Cooperative Extension System

Annual Report of Accomplishments

2005

University of Idaho Extension
College of Agricultural and Life Sciences

CONTENTS

A. PLANNED PROGRAMS

GOAL 1: SUSTAINABLE AND GLOBALLY COMPETITIVE AGRICULTURE

Overview

(a) Outputs: Seventy-six UI faculty members with Extension appointments reported 34.73 FTEs of activity in programs and projects related to sustainable and globally competitive agriculture. In total, faculty reported production of 533 publications and 360 educational events. Extension programs are developed and delivered in collaboration with dozens of other organizations and hundreds of partnering individuals. Faculty and staff combined to produce a total of 46,228 individual teaching contacts.

Extension education addresses topical issues important for most of Idaho's 100+ commercial crops and animal industry products. Expertise available through Extension includes traditional agronomic, animal science, and economics disciplines as well as interdisciplinary teams and transformational educators. Sustainable and globally competitive agriculture programs are closely inter-related with programs described under goals 4 and 5, but are categorized and described in this goal for the purposes of this report.

(b) Outcomes: Extension outcomes related to agriculture are assessed through a variety of tools. The effectiveness of potato programs is documented through evaluations at the annual University of Idaho Potato Conference, growers' yield data, and positive feedback by crop advisors, and increased profitability of the potato enterprise.

Short-term learning outcomes are often measured using pre and post-tests, conducted as part of many classes, workshops and short courses. These evaluations document learning that has occurred related to all manner of agricultural production. For example, the Small Farm Beekeeping workshops documented a significant difference between student knowledge before and after the workshop. The average increase in knowledge was 49% with all topics showing an increase in knowledge of at least 40.5%.

Motivation is often assessed using participant surveys, such as that used at the Small Farms Conference that describes participants' intentions to: look into drip tape irrigation; use better time management and organizational skills; employ better diagnostics of predatory and beneficial insects and pests; upgrade their level of pasture management; put Vaseline in sheep ears to help keep out the black flies, use the recommended recipe for aphid spray; improve networking; propagate and grow grapes; explore the use of lamb marketing strategies; talk with butcher regarding meat cuts; use the UI food technology center in Caldwell; share information with growers.

Follow up surveys are common tools to assess adoption of recommended practices, and many programs collect such data. For example, 100% of the producers who responded to the follow-up survey about the direct marketing workshop in St. Maries, and 90% of those attending the workshop in Kamiah indicated they had already or planned to implement some of the practices they learned. Approximately 90% of the participants indicated an increased level of knowledge of direct marketing strategies.

(c) Impacts: Few Extension programs invest the resources necessary to document long-term impacts of education. A portion of the impact of Extension programs can be inferred by the numbers of certification credits awarded to pesticide applicators, consultants, or others whose employment depends on formal educational accomplishment. The value of public service donated by newly-trained Master Gardeners can also be estimated: 486 new MGs in 2005, each contributing 25-hours of public service valued at $15/ hour results in $182,000 of volunteer service.

The long-term outcomes from Extension programs include saving money and time, increasing productivity and revenues, and preventing unwise decisions and failures.

For example, since Extension began testing potato culinary quality, data collected by the potato taste-testing panel helps determine whether a potato variety is approved for commercial release or eliminated from the breeding program. Several selections from the program have not had suitable culinary qualities so have not been released. However, since the establishment of a taste panel system, eleven varieties have been released. The immediate outcome is to improve the rate of success in the market place for those varieties that are eventually released. The impact is an improved likelihood that an individual farmer will produce a well-adapted variety that has high market demand.

Occasionally, Extension is involved with projects that have a direct economic impact. For example, knowledge gained through research and demonstration using pharmaceuticals to manage the timing of estrus in dairy cows is being delivered to dairy producers. Actual benefits for one producer with a 5,000 cow herd have an annual estimated gross impact in the range of $275,400 to $344,250 ($12 to $15 per 1% increase in pregnancy rate per cow).

(d) Successes: the Master Gardener program is one of Extension's most visible and successful efforts. Innovation in Idaho is helping expose new audiences to the Extension system by creating new ways to access master gardeners.

In addition to the participants in the traditional Master Gardener Volunteer Development Programs throughout the state, there were 340 participants utilizing the Spanish language Beginning Master Gardener Volunteer Development Program in Pocatello and Idaho Falls. This program has been offered for the past two years. The most important modification to this specialized course was the development and use of a Spanish Master Gardener Handbook.

At the Fort Hall Indian Reservation and in Boise at the Women's Correctional Facility, a mini-Master Gardener Series is in place to train attendees. The Junior MG (JMG) Program is well attended by teachers and children alike. Master Gardeners have assisted in training JMG facilitators. In eleven counties, more than 12,000 youth and 400 adults have been involved in the program since its inception in 2002. Eighty-five adults and two teens have completed the JMG facilitator certification course.

(e) Support: Faculty and staff combined to generate $3,116,941 in grant activity related to Goal 1. Approximately $892,880 in Smith Lever appropriations; $2,835,919 in State appropriations for Agricultural Research and Extension, and $60,018 in county appropriations for Extension were invested in goal 1-related programs.

Key Theme-Agricultural Competitiveness

(a) Over the last eight years, Extension has led a group of local beef cattle producers to develop a marketing alliance. At the request of other producers, Extension has continued creating new marketing alliances.

The Idaho potato industry has built its reputation by producing potatoes and potato products with excellent culinary quality. New potato varieties being released are attractive to Idaho potato growers because of distinctive agronomic and/or economic

advantages over Russet Burbank. A potato taste-testing panel was started about 18 years ago to evaluate new varieties for color, texture and flavor of baked potatoes. Panelists evaluate at least five varieties shortly after harvest (late October) and again after 5 months in storage (early March). Eight sessions are used per testing period giving 70 to 100 replications per variety.

To have consumer appeal and encourage purchases in retail stores, the quality of fresh-market potatoes must be maintained and potatoes must be properly displayed while also minimizing store product losses. Over time, potatoes exposed to ambient and artificial light turn green. The use of accent lighting in retail stores has focused on illuminating commodities for greater consumer eye-appeal and selection enhancement. Research was conducted to evaluate two types of fluorescent, halogen, fluorescent with filter, ceramic metal halide, and fiber optic light sources on greening of 'Russet Burbank' potatoes.

On-farm workshops for Spanish-speaking workers have been offered for the past five years. The 2005 workshops were held in Caribou, Power, Bonneville, and Bannock Counties. A total of 44 Spanish speaking farm laborers attended, up from 37 students last year. New topics for 2005 included irrigation equipment repair and management, pesticide drift management, soils, and potato disease management.

University of Idaho researchers and educators established six sites to monitor the presence of potato tuber moth. Applied research trials of nitrogen mineralization in potatoes were conducted and data were used to develop improved nutrient management practices for organic and conventional potatoes. Research trials were also conducted on the implementation of new technology for irrigation management. Performance of potato planters and assessing potato bruise damage were conducted.

(b) The Clearwater Valley Beef Alliance has had a great deal of success selling calves in common under the alliance name. An article written by UI Extension on marketing alternatives for beef producers and published in the Idaho Cattle Association magazine is one of the outreach mechanisms that have led to increased awareness and interest by producers and requests for Extension assistance with marketing alliances and alternatives.

Culinary quality data collected by the potato taste-testing panel helps determine whether a potato variety is approved for commercial release or eliminated from the breeding program. Several selections from the program have not had suitable culinary qualities so have not been released. However, since the establishment of a taste panel system, eleven varieties have been released.

Proper display and promotion of potatoes in the retail market is important, but this must be accomplished with minimal quality degradation due to light exposure. Research with six light sources indicated that using a fiber optic light source would provide approximately one-half to one day extended potato shelf-life compared with other light sources tested. Fiber optic lighting or a combination of fiber optic accent lighting and standard fluorescent lighting would help retard tuber greening yet highlight the commodity. This would be of great benefit to produce managers while maintaining a quality potato display for the consumer. It would also reduce loss of

potatoes and costs associated with wasted product. Albertsons supermarkets and others are closely looking at this data for use in their retail produce sections.

For the past five years, on-farm workshops for Spanish-speaking workers were evaluated by the students completing pre- and post-tests. Each year students have demonstrated a statistically significant increase in knowledge following this educational program. The students' average pre-test score this year was 2.74 compared with an average post-test score of 74.55, a larger increase than in previous years. Through past experience, instructors are getting better at teaching Spanish-speaking students and becoming more successful in bridging the language barrier.

The effectiveness of Extension outreach potato programs in Elmore and Eastern Owyhee Counties is indicated through evaluations at the annual University of Idaho Potato Conference, growers' yield data, and positive feedback by crop advisors, and increased profitability of the potato enterprise. PVY and PVA data helped growers to use best pest management strategies and carefully evaluate their seed source.

(c) Funding for various programs targeting agricultural competitiveness includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources.

(d) The agricultural competitiveness program is statewide. The program also interfaces with a multi-state potato breeding and release program with participation by Oregon and Washington. The beef alliances are programs that have been shared and improved through interaction with faculty involved in the COIN program (California, Oregon, Idaho, Nevada).

Key Theme-Agricultural Profitability

(a) Small grains or cereals are included in practically all Idaho rotations and are considered critical for the productivity of our cropping systems. Objective science based information pertinent to these small grain enterprises is critical for sustainability. Variety performance, cultural and fertilization practices significantly influence productivity and grower returns. Information derived from programs is widely distributed and the programs are recognized as providing highly credible information for cereal production. This is done through variety selection, fertility management, irrigation management, insect and weed management and other production issues. This information is best supplied by the University through local or regional cereals schools and one on one consultation with growers.

Small grains information was provided using newsletters, personal contacts, presentations, and articles. Seed dealers were provided the information they need to include in their seed inventory the latest variety releases with demonstrated performance in the local production system. PNW 578 provided information on the principles of protein enhancement for hard wheat to enable producers to produce hard wheat with acceptable protein and avoid price discounts. It is in its second printing.

The Cereal Sentinel Newsletter, Issues 38, 39, and 40 were produced and distributed to mailing lists of 2600. Electronic versions of each newsletter were provided on-line with electronic messages sent to about 100 announcing the postings.

UI Cereal Schools: The 2005 UI Cereal Schools in southern Idaho were held in Pocatello, Idaho Falls, Ashton, and Preston. Northern Idaho schools were held in Moscow, Lewiston, Bonners Ferry, and Green Creek. Many who attended received 3 credit hours towards their pesticide recertification requirements. Topics addressed at the schools included: specialty feed and malt barley development, crop insurance, cereal variety updates, insect update, herbicide resistance, utilizing composted manure, site-specific fertilization, and grain marketing. The number of cereal farmers who attended the schools was approximately 400.

Crop Protection School: In addition to the regular commodity schools, UI Extension faculty delivered the Crop Protection Management Training Seminar in collaboration with various agricultural chemical companies. The school was presented in Idaho Falls and Pocatello. Topics covered included: cereal diseases, new insecticides, label updates, new chemical products, seed treatments, late blight, potato diseases, seed piece decay, calcium products, and storage health. The attendance at this school was similar to the attendance at cereal school.

Variety Testing: New barley and wheat cultivars are released every year. Extension small grain nurseries provide for an objective, uniform, statistically sound evaluation of several winter and spring varieties or advanced lines (candidates for release) in diverse Idaho environments. Extension nurseries also provide performance information critical for the release of varieties for specific areas and management systems. Public varieties and advanced lines, especially from Idaho, Oregon, Washington, and Utah are evaluated, as well as selected submitted private entries. The testing program is statewide in scope.

Research and extension of technology from research is conducted in the following areas: tillage x variety interactions; rotation and fertilizer effects; Rhizobia inoculants; and growth enhancing biological materials for cereal and legume crops. This work helps growers select the appropriate varieties in different tillage management systems, plan rotations and fertility management, and use inoculants in legumes and new biological materials for production of cereals and legume crops in N. Idaho and the regions. This technology should help growers be more efficient and productive.

Transition to and adoption of direct-seed systems represents a complex change in Inland Northwest agriculture that could potentially impact the *entire* agricultural system (Cook, et al). Extension initiated the Direct Seed Grower Group, an association of 40 growers facing this transition together, with access to research, supporting institutions or organizations and to other experienced growers.

(b) As a result of the Weiser presentation, 20 growers are planning to produce hard red spring wheat from a fall planting. Response to the news release on fall planting resulted in other growers in south central Idaho also planning to try the dormant seeding.

Nearly 200 producers attending Southeast Idaho Cereal Schools learned about new varieties, production practices, and pest management strategies useful for increasing profitability of their enterprises.

At Northern Idaho schools, participants reported the following benefits:

- One hundred percent (100%) reported their knowledge of cereal production increased as a result of attending the programs.
- One hundred percent (100%) reported the information would be useful in their farm, business or occupation.
- Ten percent (10%) reported a seventy percent or greater increase in knowledge related to learner goals as a result of attending.
- Fifty three (53%) reported a fifty percent or greater increase in knowledge related to learner goals as a result of attending.
- Ninety percent (90%) indicated they had used information from previous years cereal schools in their decision making process in their business or on their farm.
- Ninety five percent (95%) indicated the information gained from the cereal school would impact their decision making process in the coming year.

Fourteen northern Idaho dry land fertilizer guides were revised and made available to the public via the web. These research-based guidelines, if followed, will result in reduced rates of nitrogen and phosphorus application and optimum economic yields, when coupled with good agronomic management practices.

Nearly forty growers from ten counties in Idaho, Washington and Oregon attend regular winter meetings of Clearwater Direct Seeders. Growers share their insights with each other using highly professional PowerPoint presentations. This exchange of success and failure results in a “collaborative synergy” with growers sharing interest in each grower's future. Growers also hear presentations and interact with university and private researchers about direct-seed system specific topics. This interaction provides growers with the latest research and is a conduit for growers to provide direction/practical insight in research programs.

Research has shown that winter feeding costs are the largest expense to range livestock operators. A winter forage trial has been initiated by the Jefferson County Extension Educator to demonstrate forages that can be grazed in late fall and winter, thus extending the grazing season.

(c) Funding for various programs targeting agricultural profitability includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources.

(d) Agricultural profitability is a part of Extension programs statewide. Cereal variety trials are collaborative with breeders in Utah, Oregon and Washington. The PNW publishing collaboration (with Idaho, Oregon and Washington) is an important partnership for faculty working in agricultural profitability.

Key theme-Animal Health

(a) Education to promote the construction and management of improved dairy facilities is a reoccurring theme for UI Extension programs. Most topics relate to animal comfort and health. Presentations, classes, workshops and tours support this theme.

Cow Cleanliness Study. Seven open-lot commercial dairy herds located in Southern Idaho were enrolled in the cow cleanliness study. A hygiene scoring system from 1 to 5 was used to investigate possible correlations between cleanliness of the cows during the close-up period and mastitis following calving. The study was conducted in summer, winter, and spring. The results from the summer and winter seasons showed no correlation and the data were summarized in the format of an abstract and presented at the American Dairy Science Association's Annual Meeting. The results from the spring season are currently being summarized and analyzed.

Heel Warts Study. Papillomatous Digital Dermatitis (PDD, hairy heel warts) is the most common cause of lameness in dairy cattle. It has been estimated that 50% of lame cows are affected with heel warts. The cause of the disease is unknown but believed to be of bacterial origin. The use of copper sulfate footbaths is the least beneficial for treatment of PDD and copper is starting to cause problems in the soil. Formaldehyde footbaths have been used to decrease the incidence of the disease on dairies. Formaldehyde footbaths pose human health hazards and are not very effective. There is a need to identify alternative footbath solutions that could maintain and improve hoof health without harming the environment.

A study was conducted to evaluate the effect of chlorine dioxide on the health and condition of hooves. The study was conducted on a commercial dairy farm located in Southern Idaho. Study cows were Holsteins and were milked three times daily. Cows were housed in a free-stall facility with concrete alleyways. Treatments were a clean water footbath followed by: 1) a chlorine dioxide solution, 2) a copper sulfate solution, or 3) a tetracycline solution. The footbath containing the chlorine dioxide solution was discarded and recharged every 500 cows. The cows walked through the chlorine dioxide three times daily. Lameness scores were not different between treatment and control at one week, two weeks, and four weeks into the study. However, the dairyman and herd manager observed an increase in clinical lameness with the chlorine dioxide treatment and decided to terminate the study.

(b) Impacts for this program are being evaluated.

(c) Funding for programs targeting issues related to animal health includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and grants from various private and public sources.

(d) Much of the work on animal health is confined to the south west and south central regions of Idaho, commensurate with areas of concentrated dairy production.

Key theme-Animal Production Efficiency

(a) Beef

To genetically increase the producing ability of cattle in their herds, beef producers must make sound selection decisions. Selection of beef cattle is an attempt to identify and retain the best animals in the current generation to be parents in the next generation. At beef schools, field days, year-end meetings, and veterinary student trainings participants learn new information on: (1) tools to evaluate and identify superior animals, (2) selection tools, (3) breeding programs, (4) economically important traits, and (5) trait relationships.

The A to Z Retained Ownership program started in 1992 to educate and provide information to cow/calf producers on how their cattle perform through the feeding and carcass grading phases. Ranchers participate by enrolling a sample of their cattle (5-50 head) in a feeding trial. Owners receive feedlot, carcass and economic information on their calves. In the 2004-2005 feeding trial, 12 ranches consigned 197 calves (124 steers, 73 heifers). Twelve individual ranch reports of data were prepared and distributed, one feedlot tour and two packing house tours were conducted, one year-end meeting held, and a summary report was published. Individual contacts with producers were made at the office, on ranch visits or at public gatherings to answer questions or provide information.

Extramural funds were received from the Idaho Beef Council to evaluate the relationship between efficiency in beef cattle (measured as residual feed intake or RFI) and carcass quality traits, particularly in a population of Angus-sired calves sired by bulls with above average, average, or below average expected progeny differences for percent intramuscular fat.

During 2005, over 16 presentations on 1) trace mineral supplementation of beef cattle, or 2) cow/calf nutrition were delivered to varying audiences (primarily cow/calf producers and Washington State University veterinary students). Topics covered included nutrient requirements, forage analysis, and nutritional management of young females to ensure reproductive success.

The North Central Idaho Grazing Conference was a collaborative effort with the Idaho Association of Soil Conservation Districts and the Natural Resources Conservation Service. The 2005 Southeastern Idaho Multi-County Beef School attracted 122 producers to classes in four communities; the North central winter school attracted 104 producers, and the Southwestern school 89 producers. This year's schools focused on animal identification as it relates to preserving heard health, bangs and trichomonaisis, poisonous plants, heifer development, and nutrition of second calf heifers.

UI faculty participating in the multistate Western Beef Resource Committee collaborated on publications accepted for the next update of the Cow-Calf Management Guide and developed and delivered WBRC-sponsored workshops for producers.

As Idaho develops a system to comply with the NAIS, work needs to be done to assist producers in complying with the law and with industry to develop tools that are "cowboy" friendly and easy to use. Extension and research faculty are collaborating with four ranches to test a "minimum technology" application, and a "high tech" application. Extension is also working with ranchers to use the project as a

marketing tool as feedlots work to develop programs that utilize EID's for records. As of Fall, 2005, 1,500 head of cattle are equipped with EID's for the pilot studies and 18 head of Junior Livestock are being tracked through the feedlot and processing.

Another emphasis for animal production efficiency education in Idaho centers around the use and management of inexpensive annual forage crops. Work in this area includes teaching at forage schools, on-farm demonstrations with annual crops, and articles and presentations delivered through grower organizations.

Dairy

Dairy Beef Quality Assurance (BQA). Dairy specialists designed and mailed a BQA survey to all Idaho dairies to assess the awareness, knowledge, and understanding of beef quality assurance principles and practices on Idaho dairies. Of the 759 surveys that were mailed to Idaho's registered dairy producers, 280 were returned for a response rate of 36.9%.

Demonstration research was conducted to investigate the response of dairy cows to feeding of low-cost, easily accessible sugar beet pulp. Results were published as a peer reviewed article, and were made available locally.

TMR (total mixed ration) management practices were surveyed on twenty eastern Idaho dairies. Surveys were conducted by personal visits to cooperating farms. Visits included: completion of survey, observation of facilities, collecting TMR samples, and timing TMR preparation steps. Some results from the survey are summarized below.

We tested a digital image method to measure particle size in mixed rations by comparing the technique to the Penn State method. The digital imaging method tended to overestimate particle size in eastern Idaho diets compared to the Penn State Method. However, the digital imaging technique may be useful for estimating alfalfa stem length. Cows tend to sort alfalfa stems over three inches in length. Stem length in prepared TMR's will be assessed by digital imaging in a trial during 2006.

To meet a need of the dairy industry, Extension faculty in eastern Idaho developed a quick test for estimating percent added water and feeding adjustments. This test was designed for producers and uses commonly available materials. Percent added water can be predicted by comparing silage density after a rainfall event with normal silage density from that farm. Required feeding adjustments can also be predicted from the change in silage density.

Results of our study were presented to producers at the 2005 Winter Dairy Forums in Preston and Rexburg. An abstract on the study was developed and presented at the 2005 American Dairy Science Association’s Annual Meeting. A field demonstration trial of the test is planned for 2006. The test will be demonstrated on the farm and producers will be required to measure silage density with the quick test following a rain or snow runoff event.

A research trial compared conception rates of cows exhibiting spontaneous estrus and receiving AI before completion of a timed AI protocol, with those of three GnRH-

$PGF_{2\alpha}$ based timed AI protocols within those cows that did not display estrus spontaneously. The manuscript has been published in the Journal of Dairy Science.

(b) Beef

Information presented at various events increased the awareness and knowledge of beef producers about: (1) tools to select superior animals; (2) tools to make sound selection decisions; (3) improvements that can be made in breeding and selection programs; (4) reducing calf stress through various weaning protocols; (5) reducing the incidence of calf scours by altering calving protocols; (6) the components and implementation of the National Animal Identification System (NAIS); and (7) the process of registering a premises. Inquiries and requests following participation affirm an increased awareness and possible adoption of breeding and selection practices.

Completing a pre- post-program evaluation, participants at the Beef Schools in Chubbuck and Downey rated their knowledge (on a scale of 1 to 10) on each of the programs that were offered at the Beef School. These included: heard health, Bangs and Trichomoniasis, poisonous plants, and heifer development. There was a significant difference between pre- and post-program test scores with an average increase in knowledge of 21 percentage points. Out of all the classes taught students learned the most from the poisonous plants section.

To gauge the effectiveness of the A to Z program, program participants were asked to complete evaluations at the year-end meeting. The participants rated the A to Z program highly successful and informative and requested that the program continue. The rankings of the usefulness of the information gained were: (1) retaining ownership of the calf crop, (2) enhanced marketing of the calf crop, (3) fine-tuning ranch management, (4) keeping abreast of changes in the beef industry, and (5) improved selection of replacement heifers and bulls. Several producers are using their individual data to market their calves to order buyers and on satellite and internet marketing systems.

The A to Z project has increased producer knowledge about the carcass qualities of their cattle, and has led to breeding changes and genetic improvement of their cattle. Approximately 12 new ranches are impacted each year through this program.

Producers continue to test their cattle using ultrasound. The ultrasound data are impacting the beef industry as a whole with more and better carcass data collected than ever before. Repeat customers indicate the success of ultrasound. Another indicator of the success of ultrasound is the number of breeds using the data.

Bull grading continues to be a valuable tool for producers in Southeast Idaho. Each year, ranchers' bulls are selected by a committee of inspectors that evaluate bull quality, condition, soundness of feet and legs and other important traits. Over the years, there has been a marked difference and improvement in quality and condition of bulls. Ranchers have gone from having 4 of 5 bulls that were graded poorly or rejected to 100% of bulls grading satisfactory or higher. Overall, this results in more cows being bred by higher quality bulls.

The results of the Creep Feeding of Fall Calves Demonstration project showed that calves fed whole oats free choice gained more at a lower cost per pound of gain than the other treatments two years in a row. As a result, three producers have announced plans to switch over to whole oats this winter.

A survey completed by participants at Central Idaho beef winter school workshops indicates that 106 of the participating producers found the information useful and 85 indicated that the information presented would cause them to make changes in their operation. Evaluation of the 2005 Southeastern Idaho beef schools showed a significant difference in participants' pre- and post-test scores. This suggests that producers are gaining knowledge and will adopt practices that improve animal production efficiency.

Dairy

Eighty-nine percent of respondents to the Dairy BQA survey indicated they followed beef quality assurance recommendations for animal care. In cows, the neck region was used by 68% of dairies for intra muscular injections and by 80% of dairies for sub-cutaneous injections. In calves, the values were 61% and 78%, respectively. Of the individuals administering injections at the dairies, 74% indicated they had been trained for the job. The primary language of those administering injections was English (73%) followed by Spanish (24%). Survey participants rated the importance of beef quality assurance in the dairy industry at 2.6 on a five-point scale (0 = low; 4 = high). Using the same scale, participants rated the impact of dairy animals on the beef industry at 2.5. Respondents cited publications, and workshops as their preferred formats for obtaining beef quality assurance information.

The sugar beet pulp feeding study showed increased milk production during certain periods of the milking cycle for cows fed beet pulp as a replacement for part of the more costly corn and silage ration normally fed in Idaho dairies. Economic analysis is pending.

Based on data from the TMR study, there is a need to improve mixed ration uniformity on eastern Idaho dairy farms. Options for correcting the issue include: longer forage processing times, altered feed loading order, and altered diet composition. A field trial is planned for 2006 to demonstrate methods for improving ration uniformity and tracking cow response to improved feeding management.

The Treasure Valley Dairy Heifer Replacement Program is in its 11th year. The short term results of this project are an increase in knowledge about the dairy industry and responsibilities of raising and showing a dairy heifer. Because of the experience and learning that participants in the program have received, many have flourished and gone beyond just learning. One young lady is now a "youth" member of the National 4-H Dairy Conference Committee, has taught dairy workshops at local Ag Days, and because of her experience, was hired by a local dairy.

On a statewide basis, indicators of reproductive efficiency do not change rapidly in the current records systems utilized by dairy producers. Therefore, more time must elapse before an accurate assessment of the outcome of an overall project may be accomplished. Nevertheless, a notable indicator of success includes:

Increased pregnancy rate (PR) for timed AI following Presynch + Ovsynch (from 10% to 27%) for a 5,000 cow Idaho dairy following consultation with UI Extension, allied industry personnel, and a veterinarian. Gross potential annual financial impact of a 17% increase in PR is in the range of $275,400 to $344,250 ($12 to $15 per 1% increase per cow) in a 12-month period.

(c) Funding for various programs related to animal production efficiency includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs. More than $170,000 in grants was received from various private and public sources.

(d) Elements of the animal production efficiency program are conducted throughout Idaho. Extension faculty collaborate with faculty from other western states to create, publish, and distribute annual modifications to the Cow-Calf Handbook – a state-of-the-art resource for experts and consultants, as part of the Western Beef Resource Committee

Key Theme-Diversified/Alternative Agriculture

(a) In 2005 the final reports were completed from the 2000-2002 raspberry and strawberry trials. A final presentation was given at the Treasure Valley Small Farm Conference in Caldwell and a refereed journal article was published. An interactive jam taste test and quality evaluation was presented at both the small farm conference in Fairfield and the Treasure Valley Small Farm Conference.

The final report of the blueberry project conducted in Camas County was submitted to the NW Center for Small Fruits research at their annual 2005 meeting; it was also displayed at annual conference. A journal article regarding the blueberry variety trial in Camas County is in preparation.

(b) Blueberries can be grown in marginal pH soils (6.2) and a short-season cold climate. Local growers have received the information as well as small fruit professionals throughout the northwest and their awareness of the potential for an industry in marginal areas has been heightened.

The potential for strawberry and raspberry production in southern Idaho has been explored and interested growers have been informed. The information has been released to a national audience through a publication in a respected and widely read journal. Producers also realize from the jam evaluations that the best tasting fresh cultivar does not necessarily make the best tasting jam!

The Western Huckleberry and Bilberry Association (formed in 2004) organized an educational program on growing, harvesting and marketing huckleberries that was held in Clearwater County (Elk River) and was attended by 20.

(c) Funding for various programs targeting issues related to diversified agriculture includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources.

(d) Diversified agriculture programs are reported under a variety of key topic headings

in this report. The programs described in this limited section are confined to the Idaho Panhandle region, and impact small fruit producers across the northwest.

Key Theme-Grazing Management

(a) Three short courses/workshops were conducted in the project and 12 presentations were made. Two range tours were also organized and delivered.

The 34th annual PNW Range Short Course on the topic "Prescription grazing management" was organized and conducted. The 3-day short course was attended by over 170 ranchers, state and federal land management agency personnel and students from 7 states and Canada. Three members of the Range Topic Team made presentations at the short course.

Salmon Range School: A 2-day workshop addressing range management issues was held in Salmon, Idaho, with 11 different range topics discussed. The 10 attendees represented federal land management agencies, a consulting firm and ranchers. Presenters included 4 University of Idaho Extension Educators/Specialists.

Following an extensive literature review, a legal declaration was submitted to Federal Court in support of a BLM proposal to convert temporary non-renewable forage to a permanent part of the grazing permit for 11 permittees grazing on 800,000 acres in the Jarbidge Resource Area.

(b) More than 300 ranchers, public land agency personnel and other interested individuals have better knowledge about grazing management and monitoring practices as a result of the PNW Range Short Course, the Salmon Range School and other workshops and presentations. Four publications reached several hundred more individuals. Evaluation of the Salmon Range School indicated that everyone ranked the topics excellent or average. Ideas that attendees plan to put into practice included: cattle distribution, make grazing after fire decisions on an allotment by allotment basis, develop a basic grazing plan and rangeland weed management.

As a result of the 2004 University of Idaho Stubble Height Report, the BLM in Idaho and Region 4 of the Forest Service developed and implemented in 2005 a new riparian monitoring procedure that puts the emphasis on long-term trend, rather than annual indicators. Both agencies are moving toward implementation of other recommendations in the UI Stubble Height Report throughout the agencies. This includes putting more emphasis on adaptive management, which should give public land permittees a greater say in grazing management on their allotments, resulting in improved rangeland conditions and greater stability of the range livestock industry.

A legal declaration submitted to a federal court for the BLM at least partially contributed to efforts to allow grazing to continue on 800,000 acres of rangeland in the Jarbidge Resource Area.

(c) Support for grazing management programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants and in-kind contributions from various

private and public sources.

(d) The PNW shortcourse is a multi-state collaboration with Washington, and Oregon, with significant contributions from other neighboring states (MT, UT). Other programs impact managers and producers from across the State and region.

Key Theme-Home Lawn and Gardening

(a) Classes developed for Advanced Master Gardener training were on a variety of topics and included xeriscape (Pend Oreille Co., WA), insect diagnostics (Clearwater), weed identification and control (Dist. III), cactus propagation and culture (Dist. III), tree identification, care and problems (Dist. III), genetic engineering of woody plants and floral crops (Washington State), two pruning demonstrations (Ada), as well as many others not taught by UI faculty. Six tours were arranged also. One in-depth 7-week course on plant problem diagnosis and management called GSI: Garden Scene Investigation was offered in Bonner County. This included classes on diagnostic methods, entomology, plant pathology, abiotic problems, integrated pest management, biological control and a field diagnostic experience. Graduates of this course were required to complete an additional 6 volunteer hours in the Plant Clinic. An advanced Master Gardener course was offered in Ada County which included a variety of topics taught by UI faculty, horticultural industry professionals, Advanced Master Gardeners, and representatives from other government agencies.

District III organized and presented a south-central Idaho Master Gardener Conference held in Twin Falls. One Impact statement was written on the outcomes of the District I Master Gardener Conference held in 2004.

There are many activities Master Gardeners carry out that provide education, community service, fund raising, and publicity for the program. Plant clinics provide a community service to the residents of the county. They are held one or more days a week during the gardening season, depending on the need. Master Gardeners provide gardening advice; diagnose problems, insects and diseases; and offer suggestions and treatment advice.

Other activities include staffing booths at county fairs and home shows, organizing garden tours, teaching classes, building and maintaining demonstration gardens, writing articles for newsletters and newspapers, and writing information bulletins and brochures. Two regular garden columns are written by Master Gardeners. Master Gardeners conducted a summer program in Jerome at the extension office with the local school district and Catholic services to provide a weekly pizza garden experience for a group of youth of a culturally diverse background. One Master Gardener wrote and distributed a brochure on home watering to their homeowners' association in Twin Falls. A weekly gardening radio show on KIDO was hosted by an Advanced Master Gardener. Total face-to-face contacts attributed to the advanced master gardener program are 6,546.

Beginning Master Gardeners. Each year at least 30 to 70 hours of horticulture lectures, demonstrations and workshops were provided in each county to educate beginning Master Gardeners around the state and in neighboring states (Oregon

and Utah). A few counties only offer a MG Program every other year. Master Gardener course lengths vary with most courses running 10 to 16 weeks. Individual classes range from 3 to 4 hours and are held weekly or bi-weekly, depending on the county.

Consumer Horticulture Education. Consumer horticulture education is by far the largest programming area of the Horticulture Topic Team. Almost every county extension educator deals with horticulture education. Classes, tours, and demonstrations were organized for garden clubs, church groups, elementary schools, businesses, other agencies and even the women's prison in Boise. More than 200 presentations were made throughout the state on consumer horticulture topics during 2005. More than 11,500 people attended these presentations. Several extension educators write weekly, bi-weekly, or monthly newspaper and newsletter columns and articles. 233 popular press articles appeared in newspapers and newsletters across the state. The number of potential readers reached by these articles is well over 300,000.

Several extension educators now participate in television and radio gardening programs. These programs reach a vast audience across the state, with estimates ranging from 450,000 to 700,000 people.

Many individuals come into extension offices across the state to get answers to their gardening questions and to pick up printed materials. Often, extension educators will visit homes of individuals who need a problem diagnosed or who have particularly difficult questions to address. There were 6,166 of these contacts reported for 2005.

Seven demonstration gardens were constructed in Idaho to be used for education and demonstration of gardening principles. Ten displays or poster sessions were conducted by extension educators at various conferences and for the state legislature. More than $32,000 in grants were secured by extension personnel for horticultural education projects.

Ada County extension organized and taught 4 landscaping classes for Boise State University; co-organized/co-taught an 8-week Botanical Garden Certification course that was needed for the Boise area; and co-organized the Boise Tree Steward Program.

(b) Program evaluation is based largely on feedback from participants. The response to the many advanced training opportunities has been very positive. At present there has not been a consistent method to measure retention of Master Gardener volunteers statewide. Some of the notable projects are as follows.

Advanced Master Gardener Course – Ada County. Written evaluations of the speakers and subject matter were collected twice during the course, one halfway through the course and one at the end of the course. Reactions from participants were favorable on the subjects covered, the speakers, and the resource materials being used. All program volunteers improved their horticultural knowledge and skills as evidenced by pre and post exams and lab work completed. Four Advanced Master Gardeners and Master Gardener participants started their own businesses or found work in the green industry.

Pizza Garden Project – Jerome County. The pizza garden project with the school district and Catholic services included 51 youth; 19 of whom were Hispanic. Two participants came to all 7 meetings and expressed a desire to continue their learning about gardening; 8 participants attended 4 to 6 classes. All 51 participants increased their knowledge of where the "parts" of a pizza come from and the number that are grown in gardens and by farmers.

GSI: Garden Scene Investigation – Bonner County. An evaluation was mailed to each student at the end of the summer, 2 months after the end of the course. Feedback was very positive with 100% of respondents indicating that the course was worth their time to attend and that they would recommend it to others. Using a retrospective post-test, students evaluated their level of knowledge before and after the course on a 1-5 point scale in three areas. Level of knowledge increased in the areas of: 1.) identifying insects, 2.) diagnosing plant problems, and 3.) understanding treatment strategies. In addition, after the students had some time to use their new skills, they were asked how the course had helped them, scoring three areas from 1 (strongly disagree) to 5 (strongly agree). The responses were:

- Has this course helped you diagnose plant problems more quickly? 4.50
- Has this course helped you be more confident of your conclusions? 4.33
- Has this course helped you understand treatment options? 4.67

Center for Assisted Living – Twin Falls County. The Center for Assisted Living serves challenged adults with day programs and day care. The garden that the Master Gardeners established provided physical activity and gardening education for about 15 members of the program. The Master Gardeners also spearheaded a booth at the Twin Falls County Fair that featured the vegetables from the garden and pictures of the activity. It received 3 large booth awards and numerous ribbons, netting $120 for operating costs that were donated to the center.

Beginning Master Gardeners. The total number of new Master Gardeners trained per county varied from 6 to 68 with a total of 483 participants being trained in Idaho. UI Extension Educators also assisted in training 147 Master Gardener volunteers in Utah and 23 MG volunteers in Oregon. These MG trainees each had the potential of contributing 20 to 30 hours of volunteer service time, depending on their county requirement, which calculates out to 9,660 to 14,490 volunteer hours. These hours directly support Extension horticulture efforts in communities throughout the state and in neighboring states. Most of this volunteer time was spent on county beautification projects, fund raisers, teaching classes to adults and children, identifying insects, weeds and diagnosing plant problems at Extension run plant clinic, and assisting with horticulture questions received at Extension offices.

Master Gardeners staffed horticulture information booths at farmers' markets and the state fairs in Eastern Idaho and Western Idaho attended by approximately 13,589 visitors and 236,000 visitors, respectively. The MG information booth at the 3-day INEEL Science and Engineering Expo reached an estimated 4,000 people. Master Gardeners were also involved in 4 annual horticulture symposiums or conferences around the state, one held in each district, which averaged close to 100 people in attendance per conference.

All Master Gardener Programs were evaluated for impact and feedback. In District IV participants were asked to score their knowledge on a scale from 1 to 10 (with 10 being the highest), prior to and following the MG course. Across the district there was a statistically significant increase in the students' self perception of their knowledge. The average knowledge rating before the classes was 3.12, while after the course the average rating rose to 7.73.

In addition to the participants in the traditional Master Gardener Volunteer Development Programs throughout the state, there were 340 participants utilizing the Spanish language Beginning Master Gardener Volunteer Development Program in Pocatello and Idaho Falls. This program has been offered for the past two years. The most important modification to this specialized course was the development and use of a Spanish Master Gardener Handbook.

At the Fort Hall Indian Reservation and in Boise at the Women's Correctional Facility, a mini-Master Gardener Series is in place to train attendees. The Junior MG (JMG) Program is well attended by teachers and children alike. Master Gardeners have assisted in training JMG facilitators. In eleven counties, over 12,000 youth and 400 adults have been involved in the program since its inception in 2002. Eighty-five adults and two teens have completed the JMG facilitator certification course.

The University of Idaho Master Gardener Website was very well utilized. Within an 11 month period (Nov. 04 to Sept. 05), 16,924 sessions were recorded at the MG Website which averages out to 1,539 sessions per month. Further statistics revealed that the files downloaded most frequently from the MG Website were from the handbook. In a 10 month period (Nov. 04 to Aug. 05), 35,349 downloads from the handbook were recorded.

Several counties do a wide range of mass media work involving MG volunteers in television appearances, radio talk shows and newsletter and newspaper articles. In Ada County, a Master Gardener hosts a radio call-in show for KIDI-AM (broadcasting range on Saturday: 3,000). Two Master Gardeners write weekly or bi-weekly garden columns for the Boise Weekly (circulation: 90,000) and the Idaho Press Tribune (circulation: 20,000).

Consumer Horticulture Education. Determining the indicators and outcomes for consumer horticulture is somewhat difficult. Based on feedback from homeowners to county faculty, Master Gardeners, or extension specialists, it is apparent that participants in the horticulture programming offered by Extension are learning new principles and adopting better practices.

In Bannock County, extension offered a beekeeping workshop. Seven months after the conclusion of the workshop a follow-up survey measured the program effectiveness. All of the respondents stated that as a result of the beekeeping workshop they are better prepared to winter their hives. They also all responded that they are managing diseases better in their hives and their hive nutrition is now more effective than ever before. A particularly popular portion of this workshop was the honey lotion and honey soap making segment of the workshop. Ninety percent of the respondents stated that they are better beekeepers as a result of the workshop.

(c) Funding for various home lawn and garden programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources.

(d) The advanced master gardener program is an important multi-state collaboration, where Idaho, Washington, and Oregon share resources and cross-train master volunteers. Training of beginning master gardeners is also conducted in collaboration with neighboring states; learners from Utah and Oregon actually receive their certification from Idaho county programs. In return, faculty from those states participate as instructors in the Idaho programs.

Key Theme-Invasive Species

(a) The Idaho Weed Resources web site has been established (www.uidaho.edu/weeds) to provide information on new invading plants. The web site has forms to submit samples to the Erickson Diagnostic Laboratory for identification or to submit pictures of plants to the experts. Publication of bulletins and handbooks is a collaborative effort with Oregon State University and Washington State University. The Center for Invasive Plant Management (MT) supports efforts to educate people on management of invasive plants.

The Lambert Erickson Weed Diagnostic Laboratory provides statewide plant identification services and is administered by UI Extension. The taxonomist identified nearly 600 plants this year.

Detection of invasive plant species in the Selway-Bitteroot and Frank Church Wilderness Areas as well as the Nez Perce National Forest was managed by UI Extension. *Berteroa incana* was found in the Frank Church Wilderness, previously unknown to occur in the wilderness area.

A course was offered to land managers in 2005 through the Center for Invasive Plant Management located at Montana State University. Land managers participated with representation throughout the United States. Idaho Extension partnered with other universities, including Oregon State and Montana State, to deliver the course. The course utilized WebCT® software environment for display of the course materials and for interaction with students who participated from across the country

Pattee Creek is an important bird migration/riparian area excluded from grazing as part of a habitat improvement project in the 1990's. Since then it has become infested with spotted knapweed. Biological control agents have been established but have been unsuccessful at controlling the infestation. UI Extension has been instrumental to investigate the managed use of grazing for control of the spotted knapweed. An initial grazing experiment showed a 50% reduction in knapweed seed head production and had minimal impact on the desirable vegetation. It was decided to continue the project for the next two years.

Seventh graders from Salmon Junior High learned about noxious weeds on September 24 at the Nancy M. Cummings Center. The science day was a

cooperative project with Bureau of Land Management, Forest Service, Lemhi County Weed Control, Extension and private industry. Youth attended workshops on identification and prevention, herbicides and reseeding, biological control, and grazing control. Youth fed the sheep and goats noxious weeds, played "weed jeopardy", went on a "biological control hunt" and utilized surfactants on flannel mullen. The goal of the day was for them to understand that integrated control is important to control noxious weeds.

Thirty nine public presentations were given on weeds. Numerous office visits and face to face discussions were also conducted.

(b) Evaluations of the Regional Invasive Plant Management course indicated that the participants either strongly agreed or agreed that: 1) the content was of interest, 2) the material was understood, 3) the instructors were supportive, 4) they found interaction with the instructors helped to understand the course material, and 5) the course increased their knowledge of the subject.

For several years UI Extension has aggressively promoted early detection and rapid response leading to eradication. The revised strategic plan for Idaho's Noxious and Invasive Weeds now includes a section on early detection and eradication.

Submissions to the Weed Diagnostic Lab continue to increase and the number of counties participating is up from 29 last year to 34 in 2005.

(c) Funding for various programs targeting invasive species includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources.

(d) Invasive species activities reported here were conducted in collaboration with Montana State University, Oregon State University, Washington State University, and the US Forest Service. These collaborative activities will impact invasive species throughout the region. Educational programs were also conducted for the benefit of land owners and managers across the State.

Key Theme- Ornamental-Green Agriculture

(a) Six county faculty and state specialists contributed to educating the green industry. At least 15 presentations were made to educate green industry personnel around the state. About 1.5 acres at the Sandpoint R&E Center are used for grant-supported research for evaluating seed sources of native fir trees for commercial use.

In Ada County, six 2- to 3-hour workshops and two one-hour clinics were held for educating garden center employees. The one-hour clinics were held at a commercial garden center. In Boundary County, a one-day workshop was held to provide nursery stock producers with the latest information on marketing and growing woody plants. Six other presentations were made to the green industry in northern Idaho. Finally, one presentation was made at a regional conference in Coeur d'Alene. A total of 442 face-to-face contacts were made via these various

presentations. Six *HomeWise* articles on entomology topics were prepared and distributed as news releases.

A nursery extension web page was also available to the green industry and public. This web site was periodically updated throughout the year. The web site provided nursery growers and landscapers around the state and region with information on cultural practices, technical procedures, research reports, updated farm gate sales information, and links to other important nursery web sites.

(b) The outcomes from the various efforts, including presentations, is difficult to document. Several of the programs award Idaho State Department of Agriculture credits toward pesticide re-certification. In Ada County, at least 20 landscape maintenance workers stopped by the county extension office seeking plant diagnostic assistance. This number of industry personnel stopping by indicates that Ada County has established credibility with the green industry and made people comfortable enough to seek assistance when needed. In Boundary County, the nursery workshop continues to attract more people each year, and program evaluations by participants are highly positive. Twenty eight participants (out of 61 people attending) completed evaluations and each (100%) wrote that this workshop was a good investment of their time. Overall, the number of green industry personnel attending various presentations increased by about 10% (442 people in 2005 compared to 402 people in 2004).

About 2,483 people visited the nursery extension web site during 2005, based on the number of sessions recorded during the year. The pages at the web site visited most often included starting a nursery business, Idaho nursery farm gate sales, and landscape plant problems. Visitors at the site downloaded many of the PDF files on cultural practices and technical information. The most popular downloads were: a brief description on sod webworm problems; a technical article about growing spruce seedlings in a gravel bed; and articles on aspen foliar diseases and bronze birch borer, respectively. Many of the people visiting the site were from Idaho, but a significant proportion of visitors were from areas outside the Pacific Northwest and even outside the U.S.

Evaluations were given to participants at many presentations for the green industry. Although a number of people attending the presentations rated them highly, the number of people ultimately helped by the educational sessions is difficult to assess since green industry personnel pass their knowledge on to their customers. County extension educators have demonstrated via evaluations that their programs and presentations are effective and highly desired based on responses from participants and people attending various programs on a continuing basis.

The fact that green industry personnel continue to attend UI Cooperative Extension Service programs and request information on additional topics demonstrates that green industry education is an important component of horticulture education efforts in the state and region. As Idaho's population grows, its green industry continues to grow as well. As more people become employed by this industry, UI educational programs will continue to be in demand by the green industry.

(c) Funding for various programs targeting issues related to ornamental horticulture

includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs.

(d) The scope of this program is statewide, with concentrated effort in north Idaho. While UI Extension personnel collaborate on these programs with faculty from neighboring States, no formal multi-state projects have been reported.

Key Theme- Plant Production Efficiency

(a) This Key theme includes programs that improve yields and reduce irrigation applications for alfalfa and other forage production situations. UI Extension delivered the Eastern Idaho Forage Symposium, the Southeastern Idaho Forage School, the Idaho Alfalfa and Forage Conference, and several local workshops and schools. Forage programs reached 1,859 people in 2005.

Idaho's IR-4 project participated in 2005 national and regional IR-4 research planning, for 2006, representing the needs and interests of Idaho producers. Extension met with the advisory committee, Idaho Minor Crop Committee, to identify pest management priorities for Idaho crops. This information was utilized at the research planning meetings. Sixteen field trials were conducted to collect residue data from 2004 pesticide priorities. This residue data will be compiled in early 2006 and be used as part of a registration data packet to be submitted to the EPA. Eventually (3-6 years) a new pesticide tolerance and subsequent registration will be issued by EPA. The residue data will also be utilized by the Idaho State Department of Agriculture to issue Section 18 registrations.

Pulse Crops. Growers need current variety performance information on public and private cool season food legume cultivars in diverse environments and cropping conditions, such as conventional and direct seeding. To provide variety performance information on pea, lentil, and chickpea, 11 variety performance trials were conducted in 2005. The results from the 2004 trials were published through University and popular press as one way to provide grower access to results. 2005 results are in preparation for publication. Field tours were held for these trials (attendance of 142) and at six winter grower education schools, results were presented to a total audience of 227. Cooperation for these trials includes county Extension educators, breeders and growers. This cooperation fosters a coordinated legume variety evaluation and technology transfer system for Idaho. The results from these trials are available to growers and other clientele through education programs, printed material, and on a Web site.

Potatoes. Information is delivered to the potato industry in many ways including farm visits, seminars, workshops, field days, popular press articles, and newsletters. Seminars and workshops presented at the annual University of Idaho Potato Conference reach the largest number of producers. At the 2005 Potato Conference, a workshop on planting management had 41 producers attend, and a workshop on harvest management had 23. A pre-post-test was given at the conclusion of each workshop. Participants were asked to evaluate their level of understanding on several topics presented on a scale of 1 (low) to 7 (high) before and after attending the workshops.

A storage workshop with approximately 75 attending was also held at the 2005 UI Potato Conference, as were workshops on soil fertility, insects, integrated pest management practices and scouting, disease management, drift management, and pesticide safety for Spanish-speaking attendees.

Along with the commercial displays at the UI Potato Conference, attendees are given an opportunity to blind-taste baked potatoes and express their preference. This is an extension of the potato taste-testing panel activity that informs people about the work that is being done before a variety is released.

(b) Licensed applicators at the Eastern Idaho Forage Symposium, the southeast Idaho Forage School, and the Idaho Alfalfa and Forage Conference were able to earn 4-recertification credits for each event. Certified Crop Advisors were eligible for 10 credits for continuing education at the Idaho Alfalfa and Forage Conference.

Participants at each of the several major schools indicated that they had acquired new knowledge about useful subjects including: irrigation and water management, fertility management and plant uptake, use of compost and alternative fertilizers, and impact of weeds and weed control. Participants also indicated their intentions to adopt new practices relating to a number of topics, with increased motivation to manage weeds the most commonly cited change reported by learners.

The data generated by Idaho magnitude of residue trials, and some regional trials, is used by the Idaho State Department of Agriculture to support Section 18 requests.

Several new pesticides were either issued tolerances by EPA or the registration petition has been submitted to EPA. A herbicide priority for lentils, 2,4 D-B, was given top priority and will be moved to the field trials for the 2006 field season. Efficacy trials for Iris Yellow Spot Virus (IYSV) conducted in 2005 resulted in a research priority to register Carzol. These efficacy trials were conducted in several western states, including Idaho. This is a top research priority identified by western onion growers at a Pest management strategic planning workshop, held in Boise, ID in 2004.

As a result of regional research priorities, the Idaho field center will conduct 25 field trials for 2006.

Pulse Crops. The positive impacts of these trials continues to be expressed as growers adopt new varieties that have been found promising through local variety trials. Direct-seed and conventional tillage are compared in the legume trials to characterize performance under different management systems. Varieties will continue to be evaluated from both public and private sources under conventional and direct seeding management. Varieties are often evaluated first as numbered lines and this allows three or more years of evaluation before the varieties are available to growers on a field scale basis. New varieties, previously evaluated by Extension, that are now being grown include: 'Bluebird', 'Stirling', 'Monarch' and 'Stratus' dry pea; 'Merrit' and 'Castillion' lentil; and 'Sierra' and 'UC27' chickpea.

Potatoes. At the conclusion of a planting management workshop at the 2005 UI Potato Conference, participants rated their knowledge on eight topics presented. The average level of understanding before the workshop was 4.89 increasing 21%

to 5.94 (7 was highest). Twenty-one participants (just over half) had attended a planting management workshop in a previous year, and nearly 24% indicated they had put into practice all the information learned at a previous workshop while another 71% said they had adopted selected practices. Participants were also asked how much of the information presented in the current workshop would be put into practice. Approximately 34% indicated they would use all of the information while 66% said they would use some.

A second evaluation was used at the planting management workshop simply asking the participants to indicate on a scale of 1 (strongly disagree) to 5 (strongly agree) the usefulness of the information presented. The average score was 4.25, which falls between "agree" and "strongly agree." They were also asked how many of the practices they would adopt and the mean response was 3.89, indicating they would adopt "most" of the practices.

In the harvest management workshop, the average level of understanding increased from 3.96 to 5.83, a 47% increase for six topics. Participants were asked if they had attended a previous UI Potato Conference harvest workshop and if they had put into practice information gained. Eight out of 23 people had attended a previous workshop, and one had put into practice all information gained while 7 (88%) had used at least some. For the current workshop, approximately 15% indicated they would use all the information presented while 80% said they would use some.

Of the approximately 75 people attending the storage management workshop, 28 completed a survey indicating that 96% strongly agreed or agreed the information was useful, and 57% indicated they will adopt all or most of the practices discussed. Another 39% indicated they would adopt some practices.

(c) Funding for various programs targeting issues related to plant production efficiency includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs. The Potato Team brought in about $250,000 in grants from various private and public sources, and the teams working on forages and pulse crops brought in another $10,000 in extramural funding.

(d) Multi-state involvement in plant production efficiency includes participation, both as instructors and learners, in the western region alfalfa symposium. Much of the work done with pulse crops is collaborative with Washington State University, as is our shared position funded through the STEEP project (reported elsewhere, but related to this theme, as well). The UI Potato Conference is an international program in which UI arranges for instructors and learners to participate and share from all of the major potato growing states. These programs are conducted, in various forms, to benefit growers statewide.

Key Theme- Rangeland/Pasture Management

(a) Eighty-six presentations about pasture management were made by UI Extension faculty during 2005 at shortcourses, workshops, and conferences for regional, statewide, and local audiences. Ten publications (extension publications, popular,

and trade-press) were written.

The Lost River Grazing Academy (LRGA) was presented twice at the Nancy M. Cummings Research, Extension and Education Center near Salmon, Idaho. This 4-day, hands-on short course provides operators and interested agency personnel an introduction to the principles of management-intensive grazing of irrigated pastures. Participation is limited to 20 per session, and is drawn from around the western US, but about half are from Idaho. The LRGA is reputed to be the premier workshop of its type in the western US. A survey of 100 past participants in the Lost River Grazing Academy was conducted to examine changes in their attitudes and grazing practices. The survey obtaining approximately a 50% response rate and the data is presently in the process of analysis.

Ada, Owyhee and Canyon County extension educators, with the help of local NRCS personnel presented a 12-hour pasture short course and tour, supported by local agricultural businesses and the NRCS. Extension educators from Nez Perce, Latah, Clearwater and Idaho counties organized and conducted a similar workshop and tour addressing pasture management issues. Gooding County Extension assisted operators in the Magic Valley with the use of annual forages to extend the grazing season and to remove excessive P from soils in response to nutrient management issues. In addition, these and other extension educators, made presentations, wrote an impact statement and newsletter articles, were interviewed for radio and magazine articles and responded to numerous inquires about improving pasture performance, conserving resources, and preventing environmental degradation from improper pasture management in commercial and non-commercial settings.

(b) Pre- and post- testing at the LRGA indicates that all participants increased their understanding of pasture ecosystems and management. All participants indicated that they had learned things at the LRGA that they intended to implement on their farm or ranch in the next 6 months. Several individuals who previously attended the LRGA have reported greatly improved harvesting efficiency from understanding the principles and adopting the practices that they learned. All of the participating operators would recommend other livestock operators attend this workshop.

An operator from the Salmon area reported that he was unable to borrow funds to put up hay on his ranch in 2003. He decided to deploy the knowledge he had gained at the LRGA. By stock piling feed as standing feed during the summer and rationing it out during the winter, as taught at the LRGA, he determined that he saved $10,000 to $15,000 in 2003, and permitted him to stay in business and actually flourish. He continues to successfully stockpile feed for wintering his cows and is currently investigating ways to change his calving season to take increased advantage stockpiles and low quality feeds.

Participants at the workshop in Idaho County were asked to rate their knowledge of pasture management on a scale of 1 to 5 with 1 being no knowledge and 5 being very knowledgeable. The survey showed that the participants on average had a knowledge level of 1.9 before the workshop which increased to 3.9 after the class and tour were concluded.

Participants in extension workshops, classes and consultations significantly

changed their perception and understanding of ecosystem principles, leading to improved management of irrigated pastures. Improved understanding resulted in increased economic sustainability, through improved productivity, reduced purchased and fossil fuel inputs and reduced potential for undesirable impacts on land and water resources.

(c) Funding for various programs targeting issues related to rangeland and pasture management includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs. Much of the educational support for LRGA comes from a Department of Labor grant.

(d) The programs in this section are accessed by residents from across the west and from neighboring states.

Key Theme – Small Farm Viability

(a) Conferences:

The 2005 Treasure Valley Small Farms Conference was held at Albertson College of Idaho on January 7 and 8 with 83 participants. The *Insect Management Super Seminar*, a successful intensive training for agricultural professionals, preceded the conference at the Caldwell R&E Center and drew 21 attendees.

Team members helped to support and teach at the super seminar and conference including two intensive 4.5 hour sessions on entomology identification techniques for the Entomology Super Seminar, plus another shorter, 2-hour version for the small farm conference; presentation of results from the raspberry and strawberry variety trials conducted in Hailey from 2000 through 2002; and conducting taste panels for the raspberry jam made from selected cultivars.

The Second Annual Diversified Agricultural Conference was held jointly with Utah State Extension in Brigham City. The USDA- Risk Management Agency was a key partner. The February 2005 conference allowed large and small agricultural producers to evaluate alternative enterprises. Producers presented and learned new ideas, methods to integrate new options, and practices related to marketing, finance and record keeping, labor management, and legal insights. Thirty attendees spent a half-day developing business plans specific to their goals. Participant numbers ranged from 130 people on Thursday, 180 on Friday, to a low of 60 on Saturday. Approximately 32 topics were presented. John Ikerd and U.S. Senator Robert Bennett were keynote speakers. Details about this conference are at www.DiverseAg.org.

The Direct Marketing in the Inland Northwest conference was held in Moscow, Idaho, March 18-19 of 2005 and was attended by 79 people. The conference focused on farm direct marketing techniques and lessons learned through a four year IFAFS project. Faculty from Washington State participate in this program.

Workshops:

Two three-part series of workshops on direct marketing were held in Benewah County for 25 local producers and in Lewis County for 45 local producers. Fifty-

three people attended the small-farm tour of three Boise area farms on September 18, 2005.

Extension Educators from Bannock and Caribou Counties developed and presented a three hour hands on workshop covering the main aspects of beekeeping, product development, and marketing. Thirty five farmers attended the workshop held in Pocatello and eighteen attended the workshop held in Soda Springs. These farmers learned how to set up a beekeeping enterprise, and the use of specific beekeeping tools. They also learned hive management, disease control, and honey extraction techniques. The lectures covered how to increase profits from the sale of honey, wax, and pollen products. The most popular session taught the procedures for making soaps, lotions, and lip balms from honey and bees wax. Marketing techniques and selling bee products in farmers markets rounded out this session. The last session emphasized the benefits of pollination by bees on small farms. All lesson plans, learning materials, class notes, and power point presentations were formatted and placed on the county web site. Students are using the web site to review the material in order to modify the management of their beekeeping enterprises. In addition clients with questions concerning bees are referred to the site by office staff. This has greatly increased our ability to quickly and effectively answer beekeepers questions.

Cultivating Success courses:

Cultivating Success courses continue to be offered and are making an impact. As a collaborative project with Rural Roots and Washington State University, this effort has brought new funding and facilitated the growth of this program in both Washington and Idaho. Over 800 people have participated in one or more of the Cultivating Success courses in WA and Idaho in the past five years. Training for interested and potential instructors of the Cultivating Success program was held in Ellensburg, Washington in June of 2005 with 25 people attending. Brochures were developed for academic students and farmer audiences - over 250 were distributed at various venues.

A Sustainable Small Acreage Farming and Ranching (SSAFR) course was taught for the fifth year to mixed extension and academic audiences in Idaho. SSAFR was offered as a web-enhanced course with five in-class meetings, supplemented by weekly on-line readings and assignments. Eight Moscow academic students and 16 Boise beginning farmers are pilot testing the hybrid course. Seven UI/CSI students in Twin Falls and one student out of Idaho Falls are taking the on-line version of the course. Students participated in three farm tours and heard numerous presentations by farmers in the class, they engaged in interactive class activities and discussion, and learned a process to help them evaluate the feasibility of a selected farm enterprise.

An Agricultural Entrepreneurship class using the NxLevel "Tilling the Soil of Opportunity" curriculum was taught in Lewis County to 10 students. Students set farm enterprise goals, conduct product and market research, conduct financial analysis and lay out a detailed farm business plan of their new farm enterprise.

(b) Conferences:

The Second Annual Diversified Agricultural Conference evaluation documented a high level of satisfaction with the conference. Typical of the post-conference observations was this from a rancher in southern Idaho, "From just one session I had six specific ideas I want to try out as I try to get more value from the elk herds that run on my ranch".

As a result of attending, participants in the Treasure Valley Small Acreage Farm Conference indicated they would take actions to include: adopting Mormon cricket control options, monitoring for black fly larvae, monitoring ponds for mosquitoes, and using more insect identification and diagnostics tools. Evaluations for the Insect Diagnostics sessions received a 4.8 for “usefulness” and 4.7 for “knowledge gained” when scored on a 1-5 scale.

Small Farms Conference participants indicated they would: look into drip tape irrigation; use better time management and organizational skills; employ better diagnostics of predatory and beneficial insects and pests; upgrade their level of pasture management; put Vaseline in sheep ears to help keep out the black flies, use the recommended recipe for aphid spray; improve networking; propagate and grow grapes; explore the use of lamb marketing strategies; talk with butcher regarding meat cuts; use the UI food technology center in Caldwell; share information with growers.

Small agricultural entrepreneurs were made aware of the production and quality characteristics of 9 strawberry and 6 raspberry cultivars that were produced in southern Idaho. Quality of jam from 8 raspberry cultivars was experienced and discussed. Participants learned that the best tasting fresh fruit may not result in the best tasting jam!

For more than half of the 79 farmers participating in the Direct Marketing in the Inland Northwest conference, this was their first exposure to farm direct marketing and local sustainable food systems education and technology transfer. Participants surveyed at the end of the conference indicated a 4.24 out of 5 that they were highly likely to implement practices they learned at the conference. Participants also indicated (4.84 out of 5) that they were highly likely to tell others about what they learned at the conference.

Workshops:

Pre and Post-tests conducted as part of the Small Farm Beekeeping workshops indicated a significant difference between student knowledge before and after the workshop. The average increase in knowledge was 49% with all topics showing an increase in knowledge of at least 40.5%. A follow up survey was sent to participants seven months after the program. All of the respondents (100%) stated that, due to the beekeeping workshop, they are better prepared to winter their hives and manage diseases in their hives. They also indicated that they are currently managing hive nutrition more effectively. Ninety percent of the students stated that they are better beekeepers, have improved the spring management of their hives, and are now dealing more effectively with swarming issues. Sixty percent of the students stated that they are using hive inspection techniques learned in the class and thirty percent have begun to raise bees or have added more hives to their

beekeeping enterprise. Twenty percent of the respondents stated they have begun to make and sell lip balms, soaps, lotions and other bee products as a result of the workshop.

100% of the producers who responded to the follow-up survey about the direct marketing workshop in St. Maries, and 90% of those attending the workshop in Kamiah indicated they had already or planned to implement some of the practices they learned. Approximately 90% participants indicated an increased level of knowledge of direct marketing strategies.

Cultivating Success Courses have been successful in helping students and beginning farmers to have a realistic perspective of what it takes to be a successful farmer on a small acreage. More than 200 Idaho learners have taken either the Sustainable Small Acreage Farming and Ranching or the Ag Entrepreneurship course since the fall of 2001. All of these students and community members now have a better understanding of sustainable production practices, direct marketing strategies and know how to analyze their resources to make wise choices when starting a farm based enterprise. At least 95% of the students in both classes have developed a farm plan or a more detailed Farm Business plan.

Cultivating Success trainings in 2005 were successful: 24 educators and farmers in WA and ID are more aware of the importance of sustainable food systems education and have a better understanding about how to offer courses to help small acreage farmers and ranchers. Networking and capacity building of "instructor groups" has improved in the locations where the training was offered. Of the 23 people trained in 2005, at least 10 are engaged in teaching or facilitating spin-off courses.

End of course surveys administered in fall of 2004 indicated 100% of respondents rated the SSAFR course as good to excellent for increasing their knowledge and skills in small acreage farming. 96% of students rated themselves as having an excellent or complete understanding of sustainable agriculture after taking this course.

(c) Funding for various small farm viability programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources.

(d) The Second Annual Diversified Agricultural Conference was held jointly with Utah State Extension, and the beekeeping workshop was created and delivered in collaboration with Utah. The Inland Northwest Marketing and Cultivating Success projects are ongoing efforts in partnership with Washington State University.

GOAL 2: FOOD SAFETY

Overview

(a) Outputs:

Twenty-three UI faculty members with Extension appointments reported 3.74 FTEs of activity in programs and projects related to Food safety and security. In addition,

several specialized staff reported an additional 0.5 FTEs of activity related to food safety. More than 3,000 phone calls were fielded by faculty and food safety advisors, providing just-in-time learning to Idaho residents. In total, UI Extension faculty reported production of 34 publications and conducted 44 classes and workshops and 5 presentations unique to Goal 2. Faculty and staff combined to accumulate 1,035 direct intensive teaching contacts and an additional 19,574 less formal teaching contacts in Food Safety and Security.

(b) Outcomes:

Thousands of Idahoans have received just-in-time information to help protect the health of themselves and their families. More than a thousand Idaho teenagers have been trained to help protect public health as they enter the workforce, most often in the food service industry. More than 50,000 low income Idahoans have learned to apply best food safety practices as part of the ENP and EFNEP educational programs. More than 1,000 hours of volunteer service have helped to reduce the risk of food borne illness in Idaho.

(c) Impacts:

Developing Your Food Product Idea was taught three times to a total of 55 students in 2005. Of these 55 aspiring entrepreneurs, 12 have gone on to establish commercial food businesses to date.

(d) Successes:

Growth in the number and activity of Food Safety Advisors and Advanced Food Safety Advisors in Idaho has helped to maintain the quality of food safety advice and knowledge of best food safety practices for all Idaho residents, even following serious reductions in the number of paid faculty and staff. In all, these advisors reported more than 4,600 direct teaching and assistance contacts with the public.

(e) Support:

Approximately $330,000 (including 15% of Idaho's EFNEP funding and Food Stamp Education funding) in grants and targeted support is used for food safety and security education. Goal 2 programs are also supported by approximately $212,110 in Smith-Lever, $190,272 in State appropriations for agricultural research and extension, and $21,126 in county appropriations for Extension.

Key Theme – Food Accessibility and Affordability

(a) Approximately 11% of Idaho adults 18 years and older have incomes below the poverty level (Census 2000). Twenty one percent of Idaho children live in poverty, compared to a national rate of 19% (Idaho Kids County Data 2000) and 12.7% of Idahoans live in poverty based on a 3 year average (1999-2001) compared to 11.6% nationally. An average of 58,726 (4.6% of the population of Idaho) persons per month received food stamp benefits during State Fiscal year 2001 (Idaho Department of Health & Welfare, Facts, Figures and Trends 2000-2001). A study

done by Brandeis University showed that 60,000 Idahoans-24,000 of them children-went hungry in our state from 1998-2000. That is a 35% increase from a study conducted from 1996-1998. These families and others with qualifying income need food safety education that is practical and realistic to their lives.

Limited income Idaho families have a particular need for good food safety information. Inadequate resources can make it difficult to follow such food safety advice as "when in doubt, throw it out" and may limit access to some food safety tools, such as adequate refrigeration and food thermometers. Specifically, food safety subject matter includes sanitation in the kitchen and home, hand washing, thawing foods properly, appropriate cooking temperatures, proper use of meat thermometers, cross-contamination, and food storage

Extension Nutrition Program (ENP).

The Idaho *Extension Nutrition Program (ENP)* is a free, community-based education program that provides instruction to low income adults, youth, and seniors in nutrition, food safety, and money management, leading them to improved health and well-being. Approximately 15% of time is spent educating and demonstrating proper food safety techniques to clientele.

Idaho's Expanded Food and Nutrition Education Program (EFNEP).

The Idaho Expanded Food and Nutrition Education Program (EFNEP) is a free nutrition education program for low-income families with children. Families are taught lessons on nutrition, food safety, and money management, leading them to improved health and well-being. Approximately, 15% of time is spent educating and demonstrating proper food safety techniques to clientele.

(b) ENP Outcomes and Outcome Indicators:

ENP contacts are categorized as direct or indirect contacts. More that 51,200 direct contacts include the number of times persons participated in a direct educational class, workshop, or group discussion. One time contacts occur when individuals complete a single nutrition or food safety or money management class. More than 173,200 indirect contacts include those exposed to food safety education material

BEHAVIORS	*Before ENP**	*After ENP**

distributed through the ENP program. The total number of ENP contacts for FY2005 was 224,448 as shown in Table 1.

Data was collected from the 223 adults who graduated from the ENP program by having them complete a retrospective survey which measured pre and post-changes in nutrition, food safety, and food resource management practices. Results are shown in Table 7. The percentages are based on people who reported doing this behavior ‘most of the time’ or ‘always.’.

Table. Outcomes from ENP Retrospective Survey (N= 223)

Food Safety		
Wash utensils and surfaces.	*82% (182)*	*98% (218)*
Thaw meat on the counter at room temperature	*34% (77)*	*6% (15)*
Cook meat, poultry, fish, eggs thoroughly	*82% (181)*	*98% (220)*
Hand washing before preparing food	*80% (179)*	*99% (220)*

EFNEP Outcomes and Outcome Indicators:

Contact summary: A total of 4,302 youth were reached by EFNEP special interest 4-H with 18,757 contacts. Six hundred fifty-six adult clients with 2,422 family members combined for 12,145 contacts. The ethnic and racial characteristics of ENP clients include: 65% White; 26% Hispanic; 5% Native Americans; 3% Black; and 1% Asian. Three hundred twenty-nine participants (50%) graduated from the program

Outcomes for EFNEP

- Youth (N=185); 70% improved food preparation and food safety.
- Youth (N=52), pre and post test data; 8% more likely to wash hands with soap and water.
- Adult Pre/Post survey results (N= 329):
- Changes in food safety behaviors; 65% showed improvement in one or more of the food safety practices (thawing and storing foods properly).

(c) Funding for various food accessibility and availability programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources. Significant programming is supported through EFNEP and Food Stamp Nutrition Education programs.

(d) Food accessibility and availability programs are conducted statewide.

Key Theme – Food Industry Assistance

(a) The development of successful new businesses and expansion of existing business create employment and add tax base and services in Idaho communities. Entrepreneurs are often interested in small-scale food businesses, but find it difficult to access the vast and varied types of information needed to get started or to make informed decisions about whether to take the plunge. The Idaho Food Protection Program (Department of Health and Welfare), the Idaho State Department of Agriculture and the Idaho Specialty Food Association provide some of the needed information. The University of Idaho has two programs assisting Idaho's food industry. UI's Food Technology Center provides food entrepreneur assistance as a primary function. UI Food Processing Extension assists larger, existing food manufacturing companies.

Knowledge of food safety principles and regulations is required to sell food to the public; at all points in the food chain, from production to processing to distribution to food service and retailing. If food companies do not have this knowledge, the devastating effect of food borne illness and the resulting loss of business may result.

Food companies processing acidified food products (pickles, salsa, mustards, etc.) are required to complete a Better Process Control School focused on acidified canned food production. The FTC hosted such a course in February 2005 for 22 students. Twenty-one of the students satisfactorily completed the course and were issued certificates of completion with the authority to manufacture acidified food products. Developing Your Food Product Idea was taught three times to a total of 55 students in 2005. Of these 55 aspiring entrepreneurs, 12 have gone on to establish commercial food businesses to date.

The Food Technology Center hosted an Artisan/Farmstead cheese making workshop, partially supported by the United Dairyman of Idaho. Twenty-eight students attended the course in October and FTC is currently providing assistance to aspiring cheese entrepreneurs. Another workshop entitled "Selling Skills" was sponsored by the FTC and taught by members of the Northeast Center for Food Entrepreneurship (Univ. of Vermont & Cornell Univ.). This workshop was sponsored by USDA rural development and was attended by 37 active clients in addition to a full-day of operational consultation provided at the FTC.

The FTC has 51 active processing clients (35 in 2004) representing over 120 different food products. These companies process and package a wide variety of value –added products including baked goods, pickled vegetables, sauces & condiments, salsas, dry mixes, dairy products, jams & jellies, ethnic items, refrigerated and frozen meal components to name a few. The FTC has purchased and is in the process of relocating a food process pilot plant to expand the use of the facility for larger food and agricultural processors. Projected opening of the pilot plant is January, 2006.

Extension coordinated and/or taught several short courses for the food industry. Topics of these short courses included Food Security ("Food Defense"), Food Safety and HACCP, Food Microbiology, and Lean Manufacturing. Workshops were held in Boise, Caldwell, and Idaho Falls. Many participants in food safety, HACCP, and microbiology short courses were required to take this training due to FDA/USDA regulatory requirements for food processing operations, or due to customer expectations. Courses in Lean Manufacturing, a new area for food processors, assisted food companies in identifying different forms of waste, improving productivity, and increasing profitability.

During the reporting period, Extension has served food industry clients across the state through on-site technical assistance and training. This includes 26 projects for 9 food processing manufacturers. These clients include the following operations: French Fry Processors (2), Nutriceutical Processor and Packaging, Salad Dressing Processor, Farmstead Cheese Processor, Baked Potato Processor, and Frozen Onion Processor. Example projects include assistance with food safety and HACCP, assistance in preparing for a 3rd party food safety audit, lean manufacturing implementation, and cheese making assistance.

In addition to these projects and public workshops, UI Extension served on the USDA CREES NIFSI Food Safety Panel in Washington, DC, April 17-21, 2005. The panel evaluated grant proposals from academia competing for over $30 million in federal funding for food safety research, extension, and education projects.

(b) The following outcomes resulted from 2005 FTC projects.

- 16 new food entrepreneurs established business and were licensed to produce food products at the FTC.
- Fortified potato flakes developed by the FTC were introduced as a potential food aid product and will be subjected to feeding analysis in 2006.
- A sanitation and ingredient sourcing program was developed to assist a cheese processor achieve organic certification for their products.

- 7 commodity producers utilized the FTC to develop and produce value-added food products from their commodity.
- A local value-added food company utilizing the FTC for production received a contract to supply 437 Albertson's stores in the Western region.
- Sponsored and designed a booth for 16 FTC clients at the Taste of Idaho Food Show at the Boise Centre on the Grove creating opportunities with powerful local buyers.
- FTC maintained operating self-sufficiency resulting from increased recruitment and development of local food businesses.
- Sponsored international intern interested in developing a local food sustainability project in Grenada.
- Provided labeling assistance to 33 Idaho companies not utilizing the FTC for production. This assistance included the development of nutritional labels, ingredient statements and allergen statements.
- Co-authored a successful USDA value-added grant proposal with a wheat farmer in a rural Idaho community who subsequently utilized the FTC for production of their products.

(c) Funding for various food industry assistance programs includes State appropriations for Agricultural Research and Extension and Manufacturing Extension, Federal Smith-Lever and Manufacturing Extension funding, and various user fees. Program support was also provided by USDA Rural Development and United Dairyman of Idaho.

(d) Food industry assistance is provided primarily to customers in the Treasure Valley and Magic Valley, but is available across the state.

Key Theme – Food Safety

(a) In 2004-05, twenty-two Idaho FCS Extension Educators and their trained volunteer assistants (Food Safety Advisors/Master Food Preservers) answered thousands of phone and in-person questions on how to safely handle, store and preserve food. County faculty receive subject matter and programming support from the Extension Food Safety Specialist, who fields and researches questions forwarded by county faculty and also tries to anticipate areas in which questions are asked to provide pertinent information via *The Communicator* (monthly newsletter from FCS specialist to county faculty*)*, emails or memos.

Training of Volunteers. Nine new Food Safety Advisors (FSAs) were trained. Advanced Food Safety Advisors (AFSAs) receive at least 20 training hours annually. This year, 46 AFSAs completed training. The advanced trainings included information on safe jerking of meat, food borne illness updates, safe handling of refrigerated foods, moving toward a plant-based diet, the new dietary guidelines, safe preparation and preservation of gourmet jams, jellies and sauces.

Volunteer Service. First-year Food Safety Advisors (FSAs) each complete more than 30 hours of volunteer service in their community, and Advanced Food Safety Advisors (AFSAs) completed more than 20 hours. Volunteers answered telephone

questions, assisted with or conducted classes, staffed Food Safety/Food Preservation booths at fairs and other events, and made displays. AFSAs presented classes at local churches, businesses and community centers on topics including home preservation and food safety when cooking for groups.

Contacts reported by FSA and AFSA Volunteers:		
	First-year FSAs	**AFSAs**
Volunteer Contacts	By 5 FSAs	By 33 AFSAs
Total hours of service donated	139	909.75
Contacts, number of individuals	324	2725
Classes and Training Taught		By 17 AFSA
Number of Classes		41
Class time, hours		283
Contacts, number of individuals		1924
TOTAL all Contacts		**4649**

Service at Fairs. Fair Food Safety Advisor booths offered information to fair goers and were staffed by volunteers at fairs in Ada, Canyon, Elmore and Owyhee Counties. Volunteers answered food safety and food preservation questions; they also gave out current information to the public. Approximately 500 food safety/food preservation publications were sold at the Western Idaho Fair.

Affirmative Action. Sixteen AFSAs and 2 FSAs assisted and gave publications to 186 low-income, minority and/or disabled contacts, and 11 AFSAs provided classes/trainings to 103 low-income and/or minority contacts.

(b) Answering food safety questions is an on-going/year-round project, but increases during food preservation season; time per call is increasing, questions are more serious than in the past. Although the volume of calls is not recorded in detail by all reporting faculty, faculty report that answering food safety phone calls and questions from the public is a major food safety activity. Nearly all counties with an FCS Extension Educator, and some with no FCS Educators, field these calls. Five counties reported the number of food safety phone calls for a minimum of one-month up to a year. One county reported 30 food safety phone calls over a one-month period; 294 food safety phone calls were reported over a 3-month period by a second county; and 45 food safety calls were reported over a 5 month period by a third county. Two counties reported a full years worth of data tracking 903 and 138 phone calls. A great deal of time is spent to research and provide accurate answers for these questions.

Throughout the year Food Safety Advisor volunteers and staff have received very positive and appreciative response from their contacts. Among the responses:

One senior citizen reported that she calls Extension on a regular basis for reliable, current information. She also mentioned that she was thrilled to receive information on Extension websites, especially the National Center for Home Food Preservation, adding "Now I'll be able to get Extension info after hours."

A client from New Plymouth with questions regarding cheese making said she always counts on the Extension for "answers to questions no one else can answer." One caller who had questions about canning nopales mentioned that she has a new daughter-in-law who is Hispanic and wanted Extension to know how valuable both the English and Spanish versions of the PNW salsa, fruits and vegetable canning bulletins have been. She said they do a lot of canning and the bulletins have not only helped to bridge the language gap, but also to ease her concerns about proper canning procedures and food safety.

The Communicator is the 16 to 18-page monthly newsletter (except August) prepared by the four FCS Extension Specialists and the Director of the School of Family and Consumer Sciences to provide various subject matter information to the FCS Extension Educators. Two to four pages of food safety information are provided monthly.

There is difficulty measuring the impact made in relation to answering food safety telephone questions. However, telephone calls received are considered to be the ultimate "teachable moment". Those individuals calling to request information are highly motivated to learn something new about the topic. These people gained an awareness and understanding of food safety practices; they learn best food-handling practices and their actions can reduce food safety problems at home.

(c) Funding for various programs related to food safety includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. In part, EFNEP and Food Stamp Nutrition grants also support food safety education.

(d) Food safety education is conducted statewide.

Key Theme – Food Service Providers

(a) University of Idaho Extension offers two training programs that meet the criteria to issue Department of Health and Welfare-approved food safety and sanitation certificates; *Ready, Set, Food Safe* and the nationally recognized *ServSafe* program. *Ready, Set, Food Safe* is a 10-hour program developed in 2002 and updated in 2005 by UI Extension faculty. The curriculum and activity kit were developed to teach high school students to serve food safely. This curriculum is specifically designed to meet the developmental stages of adolescents, the Idaho Professional Technical Education competencies and the certification requirements of the *Idaho Food Code*. The curriculum consists of a binder containing nine lessons, a CD with PowerPoint slides for each of the nine lessons (including video clips), student fill-in notes, an exam, and an Activity Kit (a box of supplies to support

most of the 26 food safety activities).

(b) The *Ready, Set Food Safe* curriculum was taught in 19 Idaho high school Family and Consumer Sciences classes by FCS Extension Educators during the reporting period. Additionally, the *Ready, Set Food Safe* curriculum was taught in 55 Idaho high school Family and Consumer Sciences classes by FCS high school teachers during the reporting period. In total, the curriculum was taught to 1572 Idaho high school students and 1120 students have received food safety and sanitation certificates in the reporting period.

For the *Ready, Set, Food Safe* curriculum, in some high school classes, a pre- and post test of thirteen questions is used to see if knowledge has significantly increased after participating in the program. A t-test ($p<0.01$) showed that post test scores (average 11.65) were significantly higher than pre test scores (average 9.64).

After completing 4 to 9 hours of classroom instruction and hands-on activities in *Ready, Set Food Safe*, a rigorous examination is administered. If students pass the certification test with an 80% or higher score, they receive a food safety and sanitation certificate (food handlers card). In 2004-05, 1,120 Idaho youth participating in *Ready, Set, Food Safe* received a food safety and sanitation certificate.

The Extension Food Safety Specialist delivered *ServSafe* training to four FCS Extension Educators and the UI Food Technology Center manager. All five passed the nationally certified test with a 91% score or better, qualifying them to apply to be *ServSafe* instructors themselves.

(c) Funding for programs that educate food service providers includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs.

(d) Food safety education for food service providers is a statewide program.

Key Theme – Foodborne Illness

(a) A safe food supply is a priority for all families. Idaho has an extremely safe food supply, but foodborne illness still affects about 1 in every 4 persons annually. Food that is mishandled can cause serious consequences for all, but infants, the elderly, pregnant women and people with weakened immune systems are particularly affected.

Forty-four classes and workshops on a variety of food safety topics were reported. These included trainings on food preservation and food storage, and food safety programs for specific audiences, such as senior centers, church groups, and home health agencies. Checking canner gauges for accuracy was also reported by many counties. The Preserve @ Home web course was also taught twice this year with 49 participants. Classes were taught by FCS Extension Educators or by Master Food Preservers under the direction of Educators.

Germ City is a program/exhibit that teaches and motivates children and families about the importance of hand washing for good health and food safety. The

program was piloted in Idaho in 2000 and is currently being used more extensively as a result of Idaho's participation in a CSREES National Food Safety Initiative grant, *The Germ City Hand Washing Program: Clean Hands, Healthy People*.

Germ City and related hand washing education programs/exhibits were presented at 45 events including twenty schools (in Blackfoot, Boise, Bonners Ferry, Caldwell, Eagle, Emmett, Kuna, Meridian, Mount Hall, Naples, Pocatello, Riggins, Ririe, and Star), two Head Start programs (Bonners Ferry, Riggins), one health fair (Coeur d'Alene), one children's carnival (Moscow), three county fairs (Latah, Canyon, and Kootenai), and two church groups (Coeur d'Alene, Meridian).

(b) Food safety programs raised the awareness of safe food handling methods for consumers. Some specific examples include:

- The Boundary County Educator continued to refine and enhance FCS 404/504 Food Preservation (Preserve @ Home), a web-based course adapted from UI/WSU Master Food Preserve curriculum that is also offered via correspondence. Forty-nine students from Idaho, Indiana, Texas and Germany with skill levels ranging from no experience or confidence to 10+ years of experience have completed the course. Students learned how to preserve high-quality products using a water bath canner, a steam pressure canner, dehydrator and freezer. They gained an understanding of the science behind food preservation techniques and food borne illness. As a result of Preserve @ Home research-based food preservation and food safety education is readily available in all Idaho communities.

  Course content evaluations of the Preserve @ Home course indicated that:
  - 69% felt very confident in pressure canning meats, poultry and vegetables;
  - 75% felt very confident canning fruits, tomatoes and soft spreads;
  - 69% felt very confident drying food products;
  - 81% felt very confident freezing foods.

- In Bonneville County, the FCS Educator assisted 93 people during face-to-face encounters in her office this year. She tested 34 pressure cooker gauges. Her office sold 40 copies of the Ball Blue Book and 10 copies of the USDA Complete Guide to Canning. The 903 phone calls answered about a food related issue indicates that our services are being utilized.

- Boundary and Canyon County Educators presented a concurrent session at the National Extension Association of Family and Consumer Sciences annual session which was attended by 52 peer faculty. During the following two week period 42 participants visited the classroom as guests. Workshop teaching evaluations reported a mean range of 4.24-4.75/5 point scale.

At some *Germ City* programs for children, participants are asked to indicate what particular hand washing times they plan to improve. Planned behavior changes reported for two programs are shown in the Table below. Germ City facilitators also reported that school nurses have reported that kids "show off" their clean hands and noted that 12 parents have reported that their child posted a hand washing window

cling (received at *Germ City*) in the family bathroom.

Table. Percentage of *Germ City* Participants Choosing a Planned Handwashing Behavior		
Choices for Planned Behavior Change in Handwashing	**Children at the North Idaho Fair, August 2005, n = 270**	**Children and adults at 2 health fairs, 4 elementary schools, and Head Start in Boundary County, n = 747**
After using the restroom	27%	19
Before preparing or eating food	25%	17
After playing with animals	19%	14
After coughing and sneezing	15%	Not reported
After playing or working outside	13%	20
No planned change	Not recorded	4

(c) Funding for various foodborne illness programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. Although now expired, the Germ City project was funded by a Federal grant.

(d) Germ City is a multi state project in collaboration with faculty from Washington, West Virginia, Alabama (A&M), and Hawaii, and earned the 2006 Western Extension Director's Award for Excellence in the multi-state program category. Other projects are delivered statewide or in selected locations within Idaho.

Foodborne Pathogen Protection

(a) National Animal Identification System (NAIS), as a priority for in-service training sessions, was the target for internal grant funding. The grant supported a NAIS workshop for Extension faculty and four training sessions for ISDA brand inspectors.

(b) Survey results from the UI Extension NAIS in-service training sessions indicated that, on average, participants increased their knowledge of the topics presented. Additionally, all (100%) of the participants at the two in-service training sessions indicated that they were better equipped to handle questions related to NAIS.

(c) Funding for NAIS training includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and a State critical issues grant.

(d) The NAIS project is conducted in collaboration with many State Extension Services, and USDA.

GOAL 3: A HEALTHY, WELL NOURISHED POPULATION

Overview

(a) Outputs: Nineteen UI faculty members with Extension appointments reported 6.29 FTEs of activity in programs and projects related to human health and nutrition. In addition, 12 specialized staff reported an additional 7.56 FTEs of activity related to health and nutrition. In total, UI Extension faculty and staff reported production of 48 publications and conducted 47 educational events unique to Goal 3 (exclusive of in-home visits and classes). Faculty and staff combined to accumulate 1,035 direct intensive teaching contacts and an additional 19,574 less formal teaching contacts in Food Safety and Security. Counting all indirect contacts, nearly one in every four Idahoans has been touched by nutrition education programs.

(b) Outcomes: Beneficial changes are documented for most of UI Extension's programs in Health and Nutrition. Changes range from improved knowledge about the impacts of nutrition on various health conditions to improvement in eating and exercise habits reported by participants. For nearly all programs, significantly improved knowledge is measured, and adoption of best practices is reported by 33% to 66% of program participants who had not used those practices before participation in the program. Among the important behavioral changes reported, Idahoans are: eating more healthy diets by increasing intake of fruits and vegetables; reading food labels and buying foods based on nutritional content; planning and serving more nutritious meals to their families; and limiting their intake of potentially harmful nutrients.

(c) Impacts: Although we do not collect long-term data about health conditions and expenditures on health care, there is ample evidence that the behaviors adopted by program participants have positive effects on health care and medical expenses. Based on our learning, motivation, and practice adoption data, thousands of Idahoans are eating better, and exercising more; thus reducing the risk of poor health and reducing the cost of health care.

(d) Successes: To measure impact of the Fit and Fall Proof Classes, each participant was given a Three-Meter Timed Up and Go Test at the beginning and end of each six-week exercise program. The length of time it takes participants to complete this test has been found to be indicative of a participant's balance, gait speed, functional capacity for household and community mobility, and risk of falling. Scoring is as follows: <10 seconds: participants are freely mobile with a low fall risk, 10-19 seconds: participants are mostly independent with a moderate fall risk, 20-29 seconds: participants functional abilities vary with high risk of falling, more than 30 seconds: participants are mostly dependent with very high risk of falling.

Participants average post-test scores (7.44 seconds) were significantly lower than their average pre-test scores (8.99 seconds) ($p<0.01$), indicating improved mobility and reduced risk of falling after participating in the program.

(e) Support: A total of $688,575 in special funding was used to support activities in Goal 3 (70% each of the Food Stamp Education Grant and Idaho's $280,000 appropriation for EFNEP). Resources for the Senior Nutrition Program are provided by the Agency on Aging. An additional investment of about $20,814 from Smith-Lever funding, and $503,106 from the State appropriation for agricultural research and extension, and $71,548 from county extension appropriations was made to Goal 3 programs.

Key Theme – Human Nutrition

(a) Diabetes Education. The 4-class series "*Eating Healthy with Diabetes*" and the "*Healthy Diabetes Plate*" workshop were presented to 433 learners in communities across the State. UI Extension partnered with regional and local health districts and health care organizations to help market and deliver these important programs.

ENP. Idaho's Food Stamp Nutrition Education program is called the *Extension Nutrition Program (ENP),* a community-based education program that provides instruction to low income adults on nutrition, food safety, and management of food and resources, guiding residents in 27 counties to improved health and well-being. Lessons cover a variety of topics in nutrition, food buying, food safety and sanitation, basic living skills, family budgeting, and decision-making. ENP also reaches youth with basic nutrition, food safety, and physical activity messages.

Each of the 27 counties where ENP is delivered collaborates with 15-20 human service agencies. These agencies provide the food and safe shelter, then Extension Educators and ENP paraprofessionals begin the education process to stabilize the family and move them toward increased self-sufficiency. During FY2005, ENP had 267 collaborators. Examples of collaborators include: WIC, Head Start, Health and Welfare, schools, Job Services, food banks, and the Migrant Council.

ENP contacts are categorized as direct or indirect contacts. Direct contacts include the number of times a person participated in a direct educational class, workshop, or group discussion. One time contacts occur when individuals complete a single nutrition or food safety or money management class. The total number of ENP contacts for FY2005 was 224,448 as shown in Table 1.

Table 1. Total number of ENP contacts

Type of contacts	Number of contacts
I. Direct contacts	51,247
II. Indirect contacts	173,201
Total number of contacts	224,448

Table 2 further subdivides direct contacts into four projects (three adult and one youth project).

Table 2. Number of Direct Contacts in All ENP Projects

Type of Direct Contacts by Projects	Number of Direct Contacts
Adult	
One-time Contacts	13,244
Enrolled Participants	4,996
Collaborators	2,432
Youth Project	30,575
Total	51,247

EFNEP

EFNEP is delivered in three Idaho Counties: Ada, Canyon and Bannock; by 17 nutrition advisors (4.8 full-time equivalents). Twenty-six training sessions for nutrition advisors were delivered by UI Extension faculty, who are partially supported by Smith-Lever funds. Two hundred-fifty volunteers worked with the EFNEP program, contributing hours equivalent to 1.2 full time employees.

EFNEP reached a total of 4,302 individual youth through special interest 4-H, resulting in 8,757 contacts. Adults reached through EFNEP included 659 individual clients with 2,422 family members, through 12,145 face-to-face contacts.

Dietary Guidelines

Five UI Extension faculty combined to teach 103 classes on various aspects of dietary guidelines, produce one refereed and seven popular articles, and contribute to 12 interview articles and a 40-minute radio program.

Meal Time In Less Time

Since 1988, the Food Marketing Institute's (FMI) Trends survey has found that approximately 75% of consumers rate nutrition as being an important factor, as to food choices, but 90% rated taste as the most important reason for why they selected that particular food item. Time constraints were cited as an obstacle by 21% of consumers. Therefore, it is important that consumers learn how to prepare nutritious meals that taste good and are quick to prepare. The planning menus and meals curriculum will meet that goal.

A needs assessment in Idaho identified the topics individuals were most interested in learning about in the area of health and nutrition. The number one priority was learning how to plan meals and menus. UI Extension faculty developed the Meal Time in Less Time curriculum to address this need, and delivered the program to 509 individuals through 30 classes in 2005.

Miscellaneous Health and Nutrition Projects

Fourteen UI faculty combined to deliver 77 classes on miscellaneous health and nutrition topics, contacting 2,224 individual learners. These faculty also produced 16 articles about health and nutrition delivered through popular press.

Senior Extension Nutrition Program

Three hundred-seven seniors participated in the Senior Nutrition Program in North Idaho, sponsored by a grant from Aging and Adult Services.

(b) Diabetes Education

Eating Healthy with Diabetes (N=34)

Data collected from 34 participants showed:

- 100% are more familiar with the American Diabetes Association's Standards of Care
- 100% feel this program made them more aware of nutrition practices that raise and lower blood cholesterol
- 100% feel they are more conscious about trying to eat a lower fat diet
- 92% feel they will use the Standards of Care cards when seeing their physician
- 98% feel more confident about buying foods at the Supermarket
- 98% will use the Idaho Plate method to help plan meals
- 100% feel more confident about managing their diabetes
- 100% of participants would encourage other people to take "Healthy Eating with Diabetes"

ENP

Data was collected from the 223 adults who graduated from the program by having them complete a retrospective survey which measured pre- and post-changes in nutrition, food safety, and food resource management practices. Results are shown in Table 7. The percentages are based on people who reported practicing this behavior 'most of the time' or 'always.'

BEHAVIORS	Before ENP*	After ENP*
Nutrition		
Use food labels to make food choices	11% (25)	59% (131)
Eat 2 or more cups of fruit daily.	22% (50)	69% (152)
Eat 2 1/2 or more cups of vegetables daily.	24% (53)	67% (151)
Eat low-fat instead of high-fat foods	14% (31)	65% (145)
Resource Management		
Food Resource Management		
Plan meals in advance	10% (22)	62% (139)
Compare prices when shopping	42% (92)	85% (188)

Ran out of food before the end of the month	20% (43)	4% (9)
Used a grocery list for shopping	27% (60)	79% (175)
Money Management		
Track expenses, using a written spending plan	21% (46)	64% (142)
Set money aside for emergencies	15% (32)	41% (93)
Food Safety		
Wash utensils and surfaces	82% (182)	98% (218)
Thaw meat on the counter at room temperature	34% (77)	6% (15)
Cook meat, poultry, fish, eggs thoroughly	82% (181)	98% (220)
Hand washing before preparing food	80% (179)	99% (220)
Physical Activity		
Were physically active	32% (71)	76% (170)

EFNEP

Outcomes are measured for EFNEP in terms of self-reported behavioral changes. For participants, numbers indicate the percentages of the sample population who reported a positive change in their behaviors.

Participating Youth:

- 29% ate a variety of foods
- 70% improved food preparation and food safety
- 8% decreased soft drink selection
- 11% more likely to eat breakfast
- 8% more likely to wash hands with soap and water
- 28% increase in knowledge of food groups on the Food Guide Pyramid

Participating Adults; Changes in food intake

- 97% increase food behavior of one of the five food groups
- Increase in eating 2+ servings of fruit a day (from 34% at pre to 68% at post)
- Increase in eating 3+ servings of vegetables a day (from 32% at pre to 58% at post)
- Increase in eating 3+ servings of calcium rich foods (from 16% at pre to 40% at post)

Participating Adults; Changes behaviors

- 65% showed improvement in one or more of the food safety practices (thawing and storing foods properly)
- 95% of the graduates showed improvement in one or more of the food resource management practices (plans meals, compares prices, does not run out of food or uses grocery lists)
- 96% showed improvement in one or more of the nutrition practices (plans meals, makes healthy food choices, prepares food without adding salt, reads nutrition labels or has children eat breakfast).

Dietary Guidelines

To measure impact of the School Nutrition Project, a pre-test was given before each lesson, and a post-test was given the following month. The results indicate that the elementary students' health and nutrition knowledge increased.

Questions	Pre-test Scores	Post-test Scores
How many fruits/vegetables should you eat every day?	38.3%	68.7%
Which fruit belongs to the white group?	85.7%	96.0%
Which food has more calcium?	68.0%	75.7%
Which activity makes bones stronger?	97.5%	98.3%
Which food is higher in fiber?	49.1%	60.7%
Which part of the body does fiber help?	28.6%	53.9%

Meal Time In Less Time

Meal Time in Less Time Self-Reported Behavioral Outcomes. One-hundred participants have completed the retrospective pre-test/post-test survey.

Question	Always Did Before	Will Do Always After
I plan ahead for meals	7%	63%
I evaluate my menus for nutrition	29 %	77 %
I practice thrifty shopping practices	37 %	97 %
I incorporate whole grains, fruits, vegetables and dairy products into meals	49 %	81 %
I practice time-saving strategies for preparing meals	8 %	65 %
I utilize healthy food preparation methods	25 %	72 %

Senior Extension Nutrition Program

Since September 2002, SENP has worked with 203 seniors with 98 graduates. Nutrition Advisors have taught more than 1,504 lessons. The following summarizes outcomes of the program:

Question	Pre-test	Post-test
Do you eat 2 or more servings of fruit each day?	41% Yes	90% Yes
Do you eat 3 or more servings of vegetables each day?	32% Yes	62% Yes
Do you eat 3 or more servings of milk, yogurt, cheese or other calcium rich foods each day?	46% Yes	80% Yes
How many times a day do you eat?	3% 1 Time 19% 2 Times 40% 3 Times 22% 4 Times 16% 5+ Times	0% 1 Time 1% 2 Times 36% 3 Times 40% 4 Times 23% 5+ Times
Do you thaw meat at room temperature?	58% No	93% No
Do you have an understanding of how to use the foods you eat to manage your health or health condition?	33% Yes	99% Yes

(c) Funding for human nutrition programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs.

(d) Human nutrition programs are conducted statewide, and are partially coordinated as a State response to a national issue, funded the USDA Food and Nutrition Service.

GOAL 4: NATURAL RESOURCES AND THE ENVIRONMENT

Overview

(a) Outputs: Fifty-eight UI faculty members with Extension appointments reported 18.47 FTEs of activity in programs and projects related to natural resources and environment. In total, UI Extension faculty reported production of 195 publications and conducted 186 educational events unique to Goal 4. Faculty and staff combined to accumulate 58,034 individual teaching in natural resources and environment.

Programs reported in Goal 4 are frequently tied to other goals. For example, much of the work reported as animal waste management, nutrient management, water quality, and IPM could as well be reported as part of Goal 1. Programs on land use involve agricultural practices that also impact farm and ranch productivity. Some of the water quality report is closely tied to home lawn and garden programming.

Specific outputs for this goal include new knowledge about and treatment options for dozens of agricultural pests affecting both major and minor crops important to Idaho and the West. Farmers, foresters, and other land managers have been trained or taught new skills and practices to protect the environment while engaged in

economic pursuits.

(b) Outcomes: Extension programs in Natural Resources and Environment have resulted in improved and increased knowledge for forest and agricultural land owners, home owners, land managers, and others who impact the use and quality of our natural resources and environment. Knowledge and motivation have been measured to document these outcomes related to pest management, soil and water protection, forest health, and managing natural resources for sustainable uses. Behavioral changes include the adoption of sustainable forestry best practices, sustainable farming best practices, best water protection and conservation practices, and best integrated pest management practices and strategies. Long-term outcomes include enhanced economic conditions for natural-resource dependent businesses (farms, forest, and rangeland products businesses) and environmental benefits (on-site and off-site) that include water quality protection and enhancement, soil conservation, water conservation, and pollution prevention, resulting from the improved practices adopted.

(c) Impacts: Economic, social, and environmental conditions in Idaho are all impacted by programs related to Goal 4. For example, the net impacts of improved water management for 1,800 acres of onions in the Treasure Valley include:

- Net economic gains (excluding water and pumping costs): $1,320 increase per acre x 1,800 acres in TV = $2,376,000 increase per year;
- Net water conservation: 432,000 gal/ac x 1,800 acres in TV = 775 Million gallons per year conserved in TV;
- Net reduction in N applied: 120 pounds per acre x 1,800 acres in TV = 216,000 pounds less N applied in TV.

(d) Successes: Education to increase the use of sustainable onion production practices in the Treasure Valley has resulted in significant change over the past five years. By measuring and demonstrating the value of soil moisture management and improved irrigation efficiencies, we have observed the annual sales of soil moisture monitoring devices as increasing 100 – 200%, and acres under drip irrigation increase annually.

Improved irrigation management has increased water use efficiency (WUE), increased nitrogen use efficiency (NUE), and increased crop yield. Increased efficiencies mean more yield per unit of applied water and nitrogen. For example, in 2005 the drip irrigated onion fields yielded an average 36.3 Cwt per inch of water per acre, while on the furrow irrigated fields this value was 24.8. The yield response is coming from growers' awareness of when to irrigate to meet the onion crop's water requirements made possible by using soil moisture monitoring and data logging equipment and resulting in improved WUE.

Through soil, water, and tissue sampling, growers are learning they do not need to apply as much N fertilizer to raise their crops as they did in the past. This is especially true with growers using drip irrigation systems to irrigate onions. Water and nitrogen applied uniformly into the root zone with drip systems improves WUE and NUE resulting in a reduced amount applied to the field. Data collected in Idaho

last winter indicates that growers using drip systems to irrigate onions apply approximately 162 pounds of N fertilizer per acre. Growers using furrow irrigation apply approximately 274 pounds N fertilizer per acre, a difference of 112 pounds per acre. Based on those growers who have already converted to drip irrigation, nitrogen application to Treasure Valley onions has decreased by more than 100 tons annually.

Through testing of water extracted from beneath the onion root zone, we have shown less nitrogen leaches from the top one-foot of soil from drip irrigated fields as compared to furrow irrigated fields. With about 9,000 acres of onions grown in the Treasure Valley of Idaho, this has significant implications for future groundwater quality.

(e) Support: Financial resources to support programs reported in Goal 4 include approximately $464,498 in Federal Smith-Lever funds, $1,483,483 in State appropriations to Agriculture Research and Extension, and $50,152 in County appropriations to Extension. A total of $723,035 in external funding also was used to support activities in Goal 4.

Key Theme – Animal Waste Management

(a) During the past year, 10 producers have received assistance to plan facilities and waste management structures to facilitate the management of the nutrients produced by their dairy cattle, dairy heifers or beef cattle operations. In most cases the plans were prepared for new facilities. Some of the plans were prepared to allow for accommodation of water purchased, for herd expansion, or to remodel facilities. The plans were prepared using the OnePlan Nutrient Management Planning Software which is the standard for the state of Idaho for the development of nutrient management plans.

Cooperating producers were involved in the planning and development of nutrient management plans which would meet the requirements of state and local laws, rules and ordinances. These plans have been reviewed and approved by the Idaho State Department of Agriculture.

The primary objective of the nutrient management planning committee was to provide education on developing, implementing and evaluating a nutrient management plan which will meet the local, state and federal regulations.

To help accomplish the objective the following educational opportunities were provided:

1) A biannual Idaho Nutrient Management Conference with knowledgeable speakers to share the latest knowledge and technology in nutrient management.
2) The sub-committees met to determine the "Planning" educational needs for nutrient management planners and producers.
3) The old curriculum for training nutrient management planners was revised to incorporate new rules and to incorporate the OnePlan training necessary to certify new planners.

4) The planning sub-committee determined there was a need for a nutrient management curriculum which could be used by extension educators and professionals to serve as a source of the latest information on nutrient management planning.

5) The OnePlan planning sub-committee worked to develop a set of training materials which would be used to train new TSP's that would improve understanding of the entire nutrient management process based on new rules and regulations**.**

(b) No outcomes reported for 2005.

(c) Funding for various animal waste programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. A grant from USDA-NRCS EQIP program is supporting a project to convert animal waste into useable energy.

(d) Animal waste management programs are conducted statewide. Work with NRCS on OnePlan and the EQIP program address national issues.

Key Theme- Forest Management

(a) Logger Education to Advance Professionalism ("LEAP"), featured over 20 hours of training to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality. The program was instructed by University of Idaho faculty, with additional presentations from Idaho Dept. of Lands personnel on state forestry laws and insects and disease. Enrollment was limited to 30 loggers per session, for an effective learning environment.

Three sessions of LEAP Update were held; each a 2-day program in which LEAP graduates build on their professional development with in-depth training on a variety of forestry topics identified each year by loggers.

Forest products companies are looking for ways to improve forestry operations on their own lands and properties they harvest. To this end, most Idaho forest products companies are participating in the "Sustainable Forestry Initiative" (SFI), a national effort of the American Forest and Paper Association. Partially stimulated by SFI, a statewide logger education committee recently developed the Idaho "Pro-Logger" program, administered through the Associated Logging Contractors of Idaho (ALC). Among other standards, the Pro-Logger credential requires participation in LEAP and 16 credits of continuing education annually. With the increased emphasis on providing educational opportunities for loggers, Extension has worked to integrate logger education needs into other education programs as well.

As part of the Idaho Forest Stewardship program, a cooperative effort with the Idaho Dept. of Lands (IDL) and many other partners, UI Extension provided a series of workshops, field days and other educational activities titled “Strengthening Forest Stewardship Skills” (supported in part by grant funds from the USFS through the IDL). The activities are designed to strengthen forest owners' ability to implement practices that improve forest health and growth, and were offered in a variety of locations and times. Other Extension programs were given to groups requesting

them, or in partnership with other agencies and organizations.

Woodland Notes, a forestry newsletter providing practical advice on forest management, is mailed out twice annually (once during this reporting period) to more than 5,500 Idaho panhandle forest owners. It is often the only consistent contact absentee forest owners have with professional forestry (roughly a third of panhandle forest owners receiving Woodland Notes reside out-of-state or south of Idaho County).

Forest owners can choose from more than 140 forestry Extension publications available through local UI Extension offices. Recent Extension videos on water quality, "selective" logging, and forest tax management, provide additional resources to help forest owners learn on their own.

Forest owners can also access archived Woodland Notes articles, a database of consulting foresters, links to relevant websites, and a variety of other useful information on the UI Extension Forestry Web site, maintained by Extension forestry staff on the UI Moscow campus.

During 2005, the WCC received formal designation as an official CES organization. Currently, 9 western states are participating, including Idaho. Collectively, we developed a WCC Regional Extension Forestry Website, progressed in development of a module for the National Forestry and Range Learning Center, and developed the first WCC Conference and Field Tour held in Tucson in February, 2005. In the Fall of 2005, Idaho, Washington, and Montana assisted the host state, Alaska, on a committee to develop the program and announcement for the 2006 WCC Regional Training Conference and Field Tour to be held in Fairbanks in August, 2006.

Since 1993, the Extension Systems of the University of Idaho and Washington State University have cooperated to hold an annual forum for consulting foresters, state-employed service foresters, and other natural resource professionals working with family forest owners. The program, titled the “Family Foresters Workshop”, updates participants on emerging technology and knowledge applicable to family forestry. It alternates between northern Idaho and eastern Washington locations.

"Strengthening Forest Stewardship Skills" is an annual series of programs focused primarily on increasing private forest owners' forest management skills. Because of professional interest in many of these programs and because of some landowners' increasing skill levels from attending previous Extension programs, we have sharpened the focus of selected forest stewardship programs to meet the continuing education needs of graduate foresters as well.

In 2005 Society of American Foresters' continuing forestry education (“CFE") credit was provided for Extension programs titled: "Current Topics in Forest Health", "Scaling & Marketing Private Timber", “Managing Forest Organic Debris & Slash”, "The Habitat Field Day" and the "Forest Insect & Disease Field Day".

In response to requests from K-12 teachers, University of Idaho credit is available for applicable Extension programs, such as the Forestry Shortcourse. This allows teachers to obtain university credit for programs that help them integrate forest

science into their classrooms.

(b) Twenty-seven people attended the one LEAP session held in the Idaho Panhandle in 2005. One-hundred eighty-seven loggers attended three LEAP Updates held in the Idaho Panhandle in 2005. As a result of LEAP Update:

- 156 loggers are better able to identify noxious weeds;
- 149 loggers will establish vegetation on bare forest roadsides;
- 163 loggers are better able identify & respond to fir engraver beetles; and
- 169 loggers have a better understanding of Idaho FPA inspections;
- 138 loggers will leave more coarse woody debris on sites needing it.

In addition to LEAP, 52 loggers attended other Extension forestry programs, such as "Current Topics in Forest Health", "Scaling & Marketing Private Timber", and the "Thinning and Pruning Field Day". In total, UI Extension provided 2,231 contact hours of continuing education for panhandle loggers last year. Thus far, 811 loggers have signed up for the Idaho Pro-Logger program.

Idaho private forest landowners, UI County faculty, green industry owners and employees, and other general public and interested citizens have increased knowledge and understanding of forest management techniques, nursery management, and forest ecosystem dynamics and health. This information was delivered via newsletter, radio, telephone, fax, surface mail, e-mail, web site hits, publications, CD-ROM, HomeWise newspaper column, Idaho Farm Bureau Publications - The Gem State Producer and the Quarterly.

Most recipients of Woodland NOTES requested that they be put on the mailing list, so I feel comfortable assuming that most read at least one article per issue, thereby increasing their knowledge and understanding of a natural resource issue. E-mail, surface mail, and telephone inquiries for information, specific publication requests, and web hits are also indicators that people are seeking information on natural resource issues. If they took the time to make the inquiry, I am assuming they have also taken the time to read the requested information sent.

The UI Extension Forestry Tree Clinic diagnosed and recommended control for 173 tree samples submitted to the clinic from 20 Idaho counties and by professionals in 3 additional states. This service allowed 20 UI County Faculty members and or Master Gardener supervisors to provide better service to their county clientele. Additionally, natural resource professionals in Wyoming, Washington, and Kodiak Island, AK, were also able to provide better service to their clientele

In FY 04-05, 345 owners of more that 78,000 private forest acres attended Extension workshops and other educational activities in the Idaho panhandle. In most program evaluations, fewer than half of participants indicated previous involvement in various forestry education or assistance programs. Based on evaluation results:

- 59 panhandle family forest owners will monitor for insect, disease, or animal damage;
- 50 will thin forest trees;

- 45 will manage to favor larch and pines;
- 42 will complete a forest management plan;
- 40 will pursue additional information on conservation easements;
- 26 will reduce vegetation competing with tree seedlings;
- 24 will contact a forester for additional assistance;
- 21 will prune forest trees;
- 18 will leave adequate amounts of coarse woody debris;
- 12 will improve log manufacturing;
- 10 will protect or enhance wildlife habitat;
- 8 will contact an expert for assistance on habitat or wildlife or rare plants; and
- 6 will identify sites with potential for rare plants.

Two-hundred ninety-six natural resource professionals attended Idaho panhandle Extension forestry programs in the in 2005, for a total of 1,560 contact hours. In the Family Forester's Workshop, 96% of the participants indicated they would be able to work more effectively with family forest owners as a result of the program. Three Idaho panhandle teachers took the forestry shortcourse for credit in 2005.

(c) Funding for various Forestry Extension programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, Renewable Resources Extension Act funding, appropriations for County Extension programs, and grants from Federal and State forest management agencies. Grants originating with USFS, administered by Idaho Department of Forestry, supported the sustainable forest initiative.

(d) A number of the UI Extension Forestry programs are conducted in collaboration with Washington State and Oregon State Universities, including nearly all programs aimed at educating forestry professionals and numerous PNW publications. Partnerships with Montana State also result in collaborative teaching and learner participation in Extension programs. Idaho participates in the WCC-Western Forestry Extension Coordinating Committee with eight other states. Most Forest Extension programs are concentrated in the panhandle region of Idaho and neighboring states (Washington and Montana). However, programs are available to residents across the state.

Key Theme-Integrated Pest Management

(a) Power County was the epicenter of a major stripe rust outbreak in winter and spring wheat. Faculty collaborated to immediately inform growers of the severity and scope of the disease. A "Stripe Rust Alert" circular was mailed to our entire mailing list plus all District IV Extension Offices. Two days after the discovery, Extension faculty toured fields and visited growers throughout the affected area. Following the tour, a letter was sent to growers recommending treatment thresholds, pictures and symptoms of the disease were posted on the Cereals Agronomy website, and growers were asked to report any new infections via e-mail. Following our recommendations, the Idaho Department of Agriculture extended the use period of

registered fungicides to treat the disease. A Field Day was organized to inform growers in a group setting. Spread of the disease was monitored and growers were kept abreast of the problem and management options.

2005 marked the completion of a 5-year cooperative program to study "Best Management Practices for Control of Jointed Goatgrass in Winter Wheat in the Intermountain States." This program was funded for 5 years through the National Jointed Goatgrass Research Program. The study involved looking at different cropping systems and treatment alternatives.

In 2005, we conducted 9 small grain and 2 field corn weed control trials; presented results of 2003-04 research at UI winter cereal schools, FWAA Fertilizer and Chemical Conference, WSSA, and WSWS meetings; and published results. Information from these and previous trials has been and will continue to be used by extension educators, crop advisors, and growers to enhance weed management decisions.

The Idaho pesticide coordinator taught pesticide registration classes for pesticide recertification credits; planned and participated in the Food Producers of Idaho Fact Finding Tour for EPA and Congressional personnel; provided field data to EPA for use with their fumigant re-registration process; attended quarterly meetings of the Idaho Agricultural Ground Water Coordinating Committee; and provided information regarding pesticide issues, on an as needed basis. The coordinator also provided technical expertise on the AgChem matrix section of the Statewide Ag Ground Water Plan; coordinated pesticide registration information with Idaho commodity organizations, University of Idaho Extension personnel, Idaho State Department of Agriculture, Region 10 EPA, USDA and other land grant Universities in the US; and coordinated pest management information and multi-state projects with the Pacific Northwest Universities through the PNW Workgroup. This workgroup is a formal project funded by USDA/CSREES Western Region IPM Center, to provide sub-regional pest management information and collaboration.

Pest Management Center personnel participated in two Idaho Minor Crop Committee meetings, presenting information both for Idaho and the PNW region; presented at the 2005 Potato Conference, and presented at 3 summer field activities for Spanish speakers. Input from those activities has been used to refine the scouting manual, so it is practical and usable for the target audience. The IPMC was funded as the Idaho Information Network, through USDA/CSREES Western IPM Center. We provided Idaho specific pest management information to the Regional IPM Center, for use by USDA and EPA to make pesticide decisions; worked on Crop Profiles and continue to develop these profiles for the Idaho Crops book in development.

The Idaho pesticide coordinator served as a grant panel member for USDA/CSREES grant program and participated in the planning and preparation for the Western Region IPM Symposium held in Portland, Oregon, including developing, managing and moderating a Symposium session on IPM and Water Quality Issues. The IPMC published six newsletters this reporting year and a webpage: http://www.ag.uidaho.edu/pmc.

UI Extension collaborated with the Idaho State Department of Agriculture to test the effectiveness of "Trap & Kill" pest control devices for Apple Maggot. Twenty six of these devices were installed in Washington County. Trap results were discussed with ISDA Field Technicians throughout the season. Arrangements were made for the ISDA technicians to use the Payette Extension Office as a data upload station.

Fruit Grower Meetings were organized to provide producers with status updates of both Codling Moth and Apple Maggot infestations. Organizational and advertising assistance was provided to Wilbur-Ellis Co. for the Chemical Fruit Fair in Ontario, OR.

Extension worked with the Payette Fruit Grower Advisory Committee to restart the formation of an Orchard Board for Payette County. This Advisory Committee advocated the need to reinstate the Orchard Board.

According to the ISDA trap results, apple maggot detections were similar to past seasons although they arrived much later in the year. The public was informed about on the Apple Maggot "trap & kill" lures so installations would not be disturbed. Since this is a new control practice, it is too early to evaluate its effectiveness.

Basic Research on Hop: The focus of the work in 2005 was on chemical ecology of mate recognition *P. californicus*. A number of studies were undertaken:

1) Determine the attraction of male beetles to female beetles in an olfactometer
2) Determine the attraction of male beetles to female beetles in field cages
3) Determine if attraction to females is due to volatile female-produced odors
4) Determine the part of the female body that produces volatile pheromones
5) Determine if contact pheromones play a role in mate recognition

Studies 1-4 were in collaboration with scientists from the University of Illinois at Urbana-Champaign and the University of California at Riverside. The studies have demonstrated that female *P. californicus* produce a volatile pheromone that attracts males over some distance in the olfactometer and in the field. The pheromone appears to be released from the ovipositor. The pheromone may have potential utility as a tool for managing California prionus. Study 5, conducted by a visiting scientist from the University of Illinois, discovered that close range mate recognition in *P. californicus* males is mediated by contact pheromone in the female cuticle. These results are the first documentation of volatile and contact pheromone use by prionine cerambycids. Two manuscripts describing these results have been submitted for publication in peer reviewed journals and a third is in preparation. These results also have been made available in non-reviewed refereed research reports. Research on *P. californicus* pheromones was supported in part by a grant funded by the WRIPM Center.

Applied research in Hop: Funding from the Hop Research Council and Busch Agricultural Resources, Inc, was used to support work in this area.

1) We conducted three IR-4 residue trials
2) Evaluated soil applied insecticide for efficacy against *P. californicus*
3) Determined the relationship between spider mite numbers and damage in hop leaves and cones.

The IR-4 magnitude of residue and efficacy studies were completed. The compounds tested did not provide control of *P. californicus* larvae. These activities are not likely to lead to peer-reviewed publications but are a high priority for the Idaho Hop Commission and the Hop Research Council. Results of these efforts were disseminated in non-peer reviewed journals and research reports.

Studies were conducted to examine the biology and ecology of lygus bug parasitoids towards determining this parasitoid's potential to contribute to effective biological management of lygus bugs in alfalfa seed. The major research thrust in 2005 was conducting experiments that:

1) Survey crop and no-crop lygus hosts for parasitism of lygus bugs
2) Determine percentage parasitism of lygus bugs attributable to *P. howardi*.

Studies 1 & 2 were in collaboration with scientists at the USDA-ARS Beneficial Insect Introduction laboratory. Parasitized lygus bugs were found in all crop and non-crop lygus hosts sampled. Percentage parasitism ranged from <10% to >80% of lygus collected. Approximately 75% of the observed parasitism was attributable to *P. howardi.* The remaining 25% was attributed to other species of *Peristenus* (~1%) and to unknown parasitoids in genera other than *Peristenus* (~20%). This is an important observation that may have significant impact on future work on biological control of lygus bugs. These results have been presented to peers at professional meetings and to clientele groups through oral and written research reports and published in a peer reviewed journal.

Studies were conducted to evaluate newer, more selective pesticide chemistries as lygus bug management tools. An additional area of focus is the influence of crop management on pollinator effectiveness and impact of pesticides on natural enemies of lygus.

1) Examine the efficacy of seven low risk pesticides against lygus bugs in field trials
2) Determine the LD_{50} to alfalfa leaf cutting bees for pesticides evaluated in 1.
3) Determine the RT_{25} to alfalfa leaf cutting bees and to several important lygus predators of pesticides evaluated in 1.
4) Survey lygus bugs for resistance to bifethrin, a pyrethroid frequently used for lygus control.

The compounds evaluated do not appear to have value as stand alone products for lygus management. Several of the compounds tested are less toxic to alfalfa leaf cutting bees and to lygus bug predators than currently labeled compounds and may, in combination with natural enemies, provide effective control. There is no evidence that natural enemies alone can provide economic lygus bug control.

Results of these efforts have been submitted for publication and have been made available to clientele groups through written research reports, and web pages (tvalfalfaseed.org), and oral presentations for clientele groups.

Weeds in sugarbeets. A sprayer calibration study was conducted in southern Idaho during 2005. The objectives of this survey were to check the accuracy of ATV and tractor sprayers in the field. A protocol was developed to facilitate the calibration process. Typically, teams of four to six people worked together to collect the data.

In the field, an applicator would be stopped at the end of the field so that spray could be collected in a 30 second time period. The applicator or grower was asked to provide their intended spray volume, sprayer speed and spray bandwidth. As soon as this was completed, the applicator was free to resume spraying. In many cases, the applicator was stopped for only 5 to 7 minutes. Sprayer speed was determined by either measuring the time for the sprayer to travel 100 feet or with a GPS unit. Additionally, since most post emergence sugar beet herbicides are applied in a band, the spray bandwidth was measured as soon as the sprayer began applying herbicide. Thus, the three main variables measured were spray bandwidth, sprayer speed and spray volume.

Research and extension efforts are needed to provide up-to-date weed management information to producers, landowners, and land managers. The weed scientist and extension specialist position time is split between applied research and extension. Applied research is conducted to expand the present understanding of weed management systems in sugar beet cropping systems. Extension programs encourage adoption of improved weed management practices that will maintain profitability and environmental safety. In 2005, 10 sugar beet weed control field trials were conducted, and results from some of the 2003-04 research was presented at Idaho Sugar Beet Conference, FWAA Fertilizer and Chemical Conference, WSSA, and WSWS meeting. Most of this information was published in the UI Commodity School Proceedings.

Diseases of sugarbeets. It is estimated that more than 50% of the sugarbeet acreage in Idaho, eastern Oregon and Washington is infested with rhizomania. We have identified a new race of beet necrotic yellow vein virus (BNYVV) that infects resistant varieties in at least seven locations in Idaho. Thirty sugarbeet samples were submitted to the laboratory for diagnosis. 25 additional samples were submitted for bioassay to determine the presence of a new strain of BNYVV. We've confirmed the occurrence of the new virus strain in Idaho, but not all the bioassays are completed.

2005 variety tests were conducted under rhizomania conditions and included 50 test varieties, two susceptible checks, replicated eight times. The new race of BNYVV has been identified at the location where the test was conducted. The test was harvested for yield, sugar content and tare. Disease ratings were taken on all varieties, and the data was published for growers and the Snake River Growers Research and Seed Committee. A separate variety test was conducted to evaluate seven transgenic Roundup-Ready sugarbeet varieties for performance under rhizomania field conditions. Entries were harvested for yield, sugar content and rated for disease.

We cooperated with the USDA in establishing their program on 130 acres of land that was purchased by the Beet Sugar Development Foundation at Kimberly, Idaho, for the USDA sugarbeet research program. We planted, cultivated and inoculated 20 acres twice with rhizomania-infested soil to establish the disease, and made cultural practice recommendations throughout the growing season. In cooperation with an ARS Geneticist, Kimberly, 30 breeding lines from the USDA program in Salinas, CA, were screened for resistance to rhizomania. The test was established on an area in

Twin Falls where we identified the new race of BNYVV with bioassays last winter. We conducted all operations for preparation, planting and field culture, and assisted with disease evaluations.

General Pest Management. Funding from USDA/CSREES was provided to conduct a two-day workshop for the purpose of developing a strategic plan for pest management in western U.S. sugarbeets. The workshop participants were selected with the objective of balancing discipline area of expertise and geographic location, in order to provide a balanced workgroup with a manageable number of members. Approximately 350 hours was expended to complete the Pest Management Strategic Plan document, incorporate peer reviewer comments, and provide input to the editor. The document was edited at Washington State University.

The Elmore County Extension Educator, in cooperation with a County Commissioner, facilitated input from different working groups, wrote a proposal, and received a $250,000 grant from the Boise National Forest Resource Advisory Committee. Working with ranchers, growers, colleagues in Northern Idaho, and agency personnel, IPM strategies for management of Mormon crickets, grasshoppers and cutworms were developed and implemented. Demonstration trials were held to establish the use of Dimilin® and Sevin® on Mormon cricket control. UI Extension facilitated a spray program for 43,000 acres and 14,000 acres, for Mormon crickets and grasshoppers respectively. The ECEE has also consulted with growers to improve pasture management in relation to soil fertility and herbicide applications.

(b) Cereal Leaf Beetle Insectary has facilitated parasite releases found to survive into the following year, providing potential biocontrol measures for the pest. Previous releases resulted in parasitism levels of 50% on the Parma Research Station.

Producers attending the Stripe Rust Field Day learned to practice early detection and timely application of fungicide sprays, reducing potential losses of 50-60% to actual losses averaging about 15%.

A fungicide trial was initiated and completed to evaluate the efficacy of fungicide products for control of *Ascochyta rabiei* (chickpea blight). Due to practical on farm research for control of Chickpea blight, growers are knowledgeable to select the most effective product to purchase and use. Moreover, in a comparison of replicated treatments, a systemic fungicide "Headline" provided significantly ($P > 0.05$) better control than other products tested.

The regional PNW Workgroup developed 86 crop profiles and pest management strategic plans for 16 crops utilized by EPA for pesticide re-registration, USDA for minor crop inputs, and University research and extension personnel and commodity organizations to set research priorities. The regional Comments Coordinator, which is supported by the PNW Workgroup, has impacted 36 pesticides under EPA review involving more than 80 minor crops and pesticide uses. Other regions of the country are looking at our project as a model, and are adopting the same project. As a result of the projects from the PNW Workgroup and pesticide education in Idaho, growers have an increased knowledge of pesticide registration, risk assessments and how to work with EPA and USDA on pest management and minor crop issues.

Growers have increased knowledge about IPM practices and have increased the use of IPM practices, such as field scouting, more timely pesticide applications and the use of reduced risk pesticides. Growers have open dialogue with EPA and USDA on pesticide usage data. Growers now voluntarily provide pesticide usage data to EPA and USDA, which enables better decisions at the federal level. The PNW Workgroup has increased the number of multi-state pest management projects and increased the collaboration of pest management coordinators, which has increased the pest management tools for regional producers and reduced duplication of effort. Efforts in Idaho and with the PNW pest management workgroup have resulted in more multi-disciplinary approaches to pest management, with more involvement with programs such as water quality, endangered species, organic production, food safety and sustainable agriculture.

As a result of the Fact Finding tour, in eastern Idaho, EPA personnel responsible for the re-registration of soil fumigants have increased knowledge and understanding about how fumigants are used and how they provide critical pest control. EPA is currently utilizing that information with the grouped soil fumigant risk assessment. The Western IPM Symposium was the first symposium of that type in the Western region. Several different stakeholders came together to discuss common concerns. The level of knowledge and cooperation among diverse stakeholders was increased as a result of that symposium. The IPMC participated in two pest management strategic plans; organized and published the sugarbeet PMSP and participated and developed preliminary documents for the rangeland beef PMSP. The PMSPs bring together diverse stakeholders, and have increased our collaboration and knowledge of specific commodities and their pest management needs.

The six newsletters published and the webpage provide useful information to our Idaho clientele. They are better informed and have increased access to needed pesticide information.

Telephone interviews indicate that growers on approximately 80,000 acres of potatoes are using fungicide scheduling based on University of Idaho recommendations. Additionally, many of these acres are using alternative pesticides that are more effective in disease control and are safer for the environment than some of the older fungicides. For example, an estimated 30,000 acres of potatoes was treated with phosphorous acid instead of Ridomil Gold. The pathogen population has developed insensitivity to Ridomil Gold products. Phosphorous acid is less toxic and more effective. Recent research helped write the phosphorous acid labels for pink rot control and almost all of the use could be attributed to UI extension efforts.

Weeds in sugarbeets. Successful weed control depends on many factors, such as application timing, application accuracy, and weather and other environmental conditions. Thus, it is challenging to see outcomes each year. However, growers have become more knowledgeable about the importance of application timing and use rates. Information from these trials and previous years' research has been and will continue to be used by extension educators, crop advisors and growers to enable making weed management decisions.

Outcomes of the sprayer calibration project showed why growers have problems controlling weeds. Using 90% calibration accuracy as the benchmark, 35% of the sprayers surveyed were under-applying, 11% were over-applying and 54% were within the 10% error margin. In other words, 46% of the sprayers surveyed were misapplying herbicide by 10% or more. At a 95% calibration accuracy benchmark, 46% of the sprayers surveyed were under-applying, 27% were over-applying, and 27% were within the 5% error margin. With 35% of the sprayers applying less than 90% of the desired spray volume, this helps explain why some growers have difficulty controlling weeds in sugar beets. This information will be presented to growers at the annual Snake River Sugarbeet Conference in 2006.

Diseases. The Snake River Growers Research and Seed Committee is using the variety test information to develop a list of varieties to be sold in Idaho. Growers are using the information to choose varieties they will purchase and plant. Seed companies are using the information developed in the variety tests in breeding programs. The data developed from the USDA screening test is currently being used to determine further steps in developing varieties with resistance or tolerance to the new strain of BNYVV.

General Pest Management. Sugarbeet growers from the Western United States now have a comprehensive pest management strategic plan for sugarbeet production. Pest Management Strategic Plans were mailed to all workgroup participants, plus interested parties. The document is posted on the USDA/CSREES IPM Centers national web page. As a result of the strategic planning, a multi-disciplinary project was developed based on the use of green manures. The project was funded by various sources including environmental interests. The workshop brought producers, federal agencies and environmental groups together.

In 2004, the Mormon cricket infestation in Elmore County covered over 200,000 acres. As a result of very effective IPM implementation, it declined to 43,000 acres. From a control standpoint, this is an excellent outcome. The Elmore County Extension Office received much positive feedback at workshops and from face-to-face contacts regarding weed control, grass variety selections, and pasture management.

(c) Funding for various IPM programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. Significant grants were received from private and public sources. Grants are made available from the Hop Research Council Sugar Beet growers, other commodity interests, and Busch Agricultural Resources, Inc. Some of UI Extension efforts were made possible through a grant from Western Region IPM.

(d) Many of UI Extension's efforts in IPM are conducted through multi-state projects. Elements of the IPM work, including PNW publications, were conducted in collaboration with Washington State and Oregon State Universities. Research on California prionus was conducted in collaboration with scientists from University of Illinois and University of California. The sugar beet strategic plan was a

collaboration with Washington State University. The PNW IPM work group combined to develop pest management profiles for 80 Idaho (and northwest) crops.

Key Theme- Land Use

(a) Nine UI faculty reported the delivery of three Living on the Land courses, two workshops, and 31 presentations about land use for small farm owners.

Ada and Canyon Counties: The outputs were 18 weeks of class with a field day/tour held at the conclusion of the class. Participants in the tour consisted of current LOTL participates, LOTL alumni, and general public. Based on comments of previous class members and focus groups, four additional modules were developed and taught this year for the first time. These last four weeks of class were offered as a mini-series to the general public to attend without enrolling in the entire course.

Twin Falls Counties: The "Living on the Land" program for small acreage owners was delivered to 19 households owning property on the edge of Rock Creek in the "Oregon Trail" subdivision in Kimberly, Idaho. A series of 16 evening classes taught at the Kimberly City hall was partially supported by a water quality grant. Guest lecturers from a variety of businesses and agencies, and UI Extension faculty taught the course.

Stewardship for Small Acreages – Bonner County: Past efforts to meet needs of small acreage landowners by offering the course Sustainable Small Acreage Farming and Ranching (Ag 416) teleconferenced from the UI campus in Moscow have met with little success due to the high cost and the lengthy time commitment. This fall a shorter course was offered called Stewardship for Small Acreages and is based on the USDA/SARE produced Living on the Land curriculum. The effort was a partnership with USDA/NRCS and the Bonner Soil and Water Conservation District. The course covered goal setting and resource evaluation for soils, water, weeds, pastures, livestock and forestry and included a field trip. Course enrollment was good (16).

(b) Living on the Land Courses

Ada and Canyon Counties: There were 17 students enrolled in the class, with several more attending the mini-series held the last four weeks. In a post test questionnaire, on a scale from 1 (not at all useful) to 5 (extremely useful) the average class score was 4.3. Thirty-nine (39) people participated in the tour. In the tour evaluation the average overall tour value was scored 9.4 on a scale of 1 to 10, with one being no value and ten being high value. Comments from the evaluation of the class as to what they learned and planned to implement included:

- Increased awareness of issues involving land use and our roles as stewards of the land was an eye opener for me.
- Understanding chemical use which will help with weed control. Understanding the value of multiple farm enterprises.
- I have a much stronger understanding of soils, fertilizer, pesticides and plants.
- Use timing more effectively to control weeds on my property.

- Start doing pasture rotation and winter paddocks.

Because of the increased awareness and aspirations of the class participates, two more tours were requested, one this fall and one early next spring. We are currently working on a grant to be submitted to Western SARE to help fund the expansion of this program to other locations and for local research on topic that LOTL alumni have requested.

After attending the Living on the Land course, participants report gaining basic knowledge and skills to: implement an inventory of the resources on their small acreage; understand soils, soil interactions and basic soil testing; understand water, water interactions and basic water testing; understand plants, plant interactions, identify weeds, insects and diseases, basic forage testing; and understand animal-soil-plant-water interactions. Participants also share information about stewardship for small acreages with others in their community. Four years of exit testing and focus group data suggests LOTL:

- Presents useful information about all aspects of land and resource management applicable to small 1-50 acreages.
- Addresses and solves critical stewardship problems of the Treasure Valley.
- Brings together the resources of the University, Industry, U.S.D.A. Agencies, Extension, and local experts.
- "It is the best single resource for learning what is involved in managing a small acreage"

2002-2005 LOTL Alumni report that they have sited and built farm structures, selected and planted appropriate forages, improved pastures and used livestock management methods advanced in LOTL. They note improving domestic and livestock water quality, establishing market or community supported agriculture (CSA) gardens, establishing fencing and irrigation systems. These practices are known to contribute to: improved animal health and productivity, improved soil and water conservation, and improved condition of the plant community.

Most participants reported that they had gained a greater understanding of weeds, land use, and resources in their community to address environmental concerns. Since 2004 four new LOTL modules (Selecting, Maintaining And Managing Farm Equipment; What To Do About Weeds, Bugs And Diseases; Rodent & Wildlife Management/Animal-Human Diseases; and Marketing Your Farm Produce-Ways & Means To A Sustainable Enterprise) have been developed for Idaho by organizers for the program based on focus groups with 2003 & 2004 LOTL alumni and instructors. Six new instructors have been added to the program delivery structure, including three Idaho LOTL Alumni. In 2005 a LOTL Market Gardening Mini-series was offered to the public the last four weeks of class.

Twin Falls County - Twenty-seven individuals from the Rock Creek community attended the Living on the Land Class series in Kimberly. Much of the information given in the class regarding protecting wellheads, septic systems, soils, pasture establishment and management, animal choice and manure management was entirely new to them. The balance of the $55,000 water quality grant is being used to provide a pressurized irrigation system to each parcel to improve their water and

manure management in order to improve the water quality of Rock Creek. DEQ has monitored the water quality above and below the sub-division before the project. After the irrigation system is in use monitoring will continue with the expectation that water quality below the subdivision will improve from the "before the program" levels. An evaluation of the program was sent to households who participated in the Living on the Land program. Returned questionnaires document a three-fold increase in knowledge demonstrated by the learners (from 17 to 55 points over 14 subject areas - an average increase of 2.7 points on a 6 point scale). The largest increase was in knowledge related to soils, fertilizing using a soil sample report, and pasture establishment and management. Participants indicated they would try composting (one participant) and rotational grazing (five participants). All had spoken to others outside of the subdivision about the program. An article for the University of Idaho Programs and People is in preparation.

(c) Funding for Land Use programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. Grants for these and related programs were received from State and Federal public sources.

(d) Programs reported for 2005 are for activities concentrated in rapidly urbanizing areas of Idaho. Related programming is available statewide.

Key Theme- Natural Resource Management

(a) The Fort Hall Extension Educator initiated a range monitoring program, wrote an interim range management plan and a request for proposals to complete a resource inventory on reservation lands. The Custer County Educator organized a 1-day workshop on riparian area monitoring.

(b) The last resource inventory and management plan on the Fort Hall Reservation was completed in the 1960's. Through educational programs and on-the-ground monitoring, Extension has increased awareness for an updated resource inventory and management plan. Bids are being solicited for the inventory and an interim plan has been completed. Monitoring has also been initiated on 302,483 acres.

Range tours, demonstrations, workshops and various other educational programs have resulted in a better understanding of grazing management on rangelands, better working relationships among various rangeland users and managers and in some cases has directly resulted in better rangeland conditions.

(c) Funding for various natural resource management programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and Federal support for the Extension Indian Reservation Program.

(d) The few programs described in this report are illustrative of programs delivered across the State.

Key Theme – Nutrient Management

(a) A regional land grant approach to nutrient management education helps avoid

duplication of efforts, increase credibility of land grant university nutrient management recommendations, increase the information resources available to address specific concerns, improve the quality of publications, and better use limited educational resources to serve regional clientele. A SARE grant, "Western Integrated Nutrient Management Education," was originally used to facilitate this interaction among PNW Extension nutrient management professionals from UI, OSU and WSU. A new EPA water quality grant, "iSNAP" was awarded to continue this regional collaboration.

Triticale was sampled for the second year in a survey of manured dairy fields to determine range P content of boot stage triticale forage.

Four professional presentations and a PNW Bulletin were developed and delivered on nutrient applications and uptake by triticale. Twenty presentations reached 633 growers and eight publications were produced for grower audiences.

(b) Collaboration with OSU and WSU Extension Faculty led to regionally planned training sessions for nutrient management planners. CCA credits were awarded at both Boise and Pasco meetings.

We have prepared several on-line proficiency tests to add to the website facility. Expected advertising of the availability of the web based testing facility is late 2005 or early 2006.

This Project had 19 presentations, workshops, short courses, 2 invited presentations and 2 professional meetings for a total of 414 face to face contacts. There were also one refereed publication and 7 other publications.

The popularity of the PNW 578 publication was indicated by it being sold out in the first few months, requiring a second printing.

CCA credits were gained at the iSNAP workshops (Boise and Pasco) on water quality, the onion fertility presentation at the FWAA Fieldmen's Conference, and the Idaho Forage School as a result of the presentations.

Triticale P content was found to range widely from NRC table values suggesting dairy producers should measure actual forage P content to better document P removal. More accurate P removal estimates would facilitate more optimal manuring rates.

(c) Funding for nutrient management programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. A SARE grant supported a multi-state component of this program.

(d) Multi-state components of the nutrient management program included the Western Integrated Nutrient Management Education project to train agricultural advisors about nutrient management planning, supported by Western SARE; and PNW publishing, including a new bulletin developed in concert with Washington State and Oregon State Universities. Other elements of the program were delivered statewide.

Key Theme- Sustainable Agriculture

(a) Managing nutrients and conserving water. The objective of this project is to demonstrate research driven production practices that can increase water and fertilizer use efficiency and reduce ground water contamination potential from nitrogen while maintaining production. Our objective is being accomplished by working with growers in their commercial onion fields utilizing furrow and drip irrigation systems and soil moisture monitoring equipment. Demonstration plots in growers' fields allow them to observe the influence of furrow and drip irrigation methods and irrigation schedules on nitrate movement, onion yield and quality.

After grant funds were awarded, soil moisture monitoring equipment was purchased and installed in drip and furrow irrigated onion fields in Canyon and Washington Counties. Data from these instruments was used to help schedule irrigation. Throughout the growing season additional data was collected on soil nitrate, soil-water nitrate, onion tissue nitrate, water use, soil nitrate mineralization, and crop yield and quality. The data was used to compare the nitrate and water use efficiencies between furrow and drip irrigated onions. In the past year, results of this project were presented at several grower meetings in the Treasure Valley.

After five continuous years of investigation the sugarbeet irrigation demonstration project was completed in the fall of 2004. Project summaries and conclusions were given at the 2005 Sugarbeet School in Nampa, ID. A draft UI Current Information Series document entitled: "Sugarbeet Irrigation Management Using Watermark Moisture Sensors" was written and is now going through the peer review process. This paper is scheduled to be available to sugarbeet growers in 2006.

(b) Managing nutrients and conserving water. Our first outcome was to raise onion growers' awareness of the benefits of using proper irrigation scheduling and fertility practices. We have made significant progress toward this outcome by employing field demonstrations, presentations at commodity schools, publications, and visits with growers and crop consultants.

There are several areas where we are seeing additional outcomes. We have seen increased water use efficiency (WUE), increased nitrogen use efficiency (NUE) and yield increases. Increased efficiencies mean more yield per unit of applied water and nitrogen. For example, in 2005 the drip irrigated onion fields yielded an average 36.3 Cwt per inch of water per acre, while on the furrow irrigated fields this value was 24.8. The yield response is coming from growers' awareness of when to irrigate to meet the onion crop's water requirements made possible by using soil moisture monitoring and datalogging equipment and resulting in improved WUE.

Datalogger sales from MK Hansen Company in Idaho have gone from 22 in 2001, to 73 in 2003 and was 54 at the end of 2004 (MK Hansen Company provided this data). Dataloggers are being installed in both sugarbeet and onion fields. Clearwater Supply Company, the leading drip irrigation business in the Treasure Valley, insists that their onion growers install soil moisture monitoring equipment with each drip irrigation system they sell. We have also seen an increase from 600 to 2,400 acres of drip irrigated onions in Idaho between 2000 and 2004. As

progressive growers see the benefits of this technology they are adopting it.

Through soil, water, and tissue sampling, growers are learning they do not need to apply as much N fertilizer to raise their crops as they did in the past. This is especially true with growers using drip irrigation systems to irrigate onions. Water and nitrogen applied uniformly into the root zone with drip systems improves WUE and NUE resulting in a reduced amount applied to the field. Data collected in Idaho indicates that growers using drip systems to irrigate onions apply approximately 162 pounds of N fertilizer per acre. Growers using furrow irrigation apply approximately 274 pounds N fertilizer per acre, a difference of 112 pounds per acre. Based on those growers who have already converted to drip irrigation, nitrogen application to Treasure Valley onions has decreased by more than 100 tons annually. Through testing of water extracted from beneath the onion root zone, we have shown less nitrogen leaches from the top one-foot of soil from drip irrigated fields as compared to furrow irrigated fields. With about 9,000 acres of onions grown in the Treasure Valley of Idaho, this has significant implications for future groundwater quality.

Sugarbeet growers involved in the Weiser Soil Conservation District '319' Water Quality Project were able to adjust and improve their surge irrigation through use of soil moisture sensors. The sensors revealed water was not getting to the ends of fields for adequate beet production. Growers made adjustments in the surge set times to supply sufficient water to the ends of rows. Growers also discovered through sensors that straw mulching was interfering with surge irrigation. The combination of straw and beet leaves slowed water movement so that ends of fields were under-irrigated.

One grower who has been using sensors during the entire five year project decided to purchase soil moisture sensors for all his fields for the 2006 season. In the first 1-3 years, he realized he was consistently over-irrigating his sugarbeet fields. Now, through the use of sensors he has the information and the confidence to limit irrigations. The results from the fifth year field trial revealed he is not saturating soil to the 3-foot depth.

A second '319' project proposal for the Sunnyside area south of Weiser was approved. This project is also directed by the Weiser Soil Conservation District with the Washington County Extension Office as a collaborator. The project will begin in 2007 and will expand water quality and improved irrigation methods to this area and its growers, including sugarbeet growers.

(c) Funding for sustainable agriculture programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. Federal and State grants also support these programs.

(d) Sustainable agriculture efforts are conducted Statewide, and vary based on local conditions and needs. Numerous projects are conducted in collaboration with faculty from neighboring States, including Oregon and Washington.

Key Theme- Water Quality

(a) **Water and Nutrient Management in Urban Landscapes**. A research and demonstration trial was continued to display the effects of different water application rates on lawn appearance and health to provide new, comparative information for decision-making. This research and demonstration trial has continued to show the effects of various water and fertilizer rates on a number of different grass species or cultivars and to generate new information.

A lawn and tree irrigation web site is available on the internet. Extension educators are using it as an informational resource for urban landscape water and fertilizer issues. The site is located at http://www.uidaho.edu/extension/lawn/

Ten presentations were made to educate citizens about water conservation in urban landscapes. All of the documented water conserving presentations were developed and delivered in southern Idaho. A tour of in the Minidoka area involved demonstrating the use of sensors and data loggers to avoid ground water contamination, and 15 people attended this tour. A field day on water conservation in the Mountain Home area attracted 340 participants.

Xeriscape demonstration gardens were planted to educate Master Gardeners and the public in Boise and Ada counties about low water use landscaping. These gardens provided information for decision-making about plants to use.

An educational series, “Water Efficient Landscaping”, was offered cooperatively with the Boise City Public Works and United Water, Inc., which attracted 720 participants, a 12.5% increase in participation over the previous year. Extension bulletins and demonstration tours were used to augment class presentations.

A water use survey conducted in Twin Falls during the summer months indicated that water use on lawns was double the necessary amount. As a result of this information, an opportunity exists to save groundwater and to protect water quality by slowing soil water infiltration and potential leaching of nitrates into groundwater.

Master Gardeners and horticulture support personnel disseminated low water use landscape information during plant clinics, educational programs, and various other avenues. Master Composters held composting clinics and hands-on workshops and the number of people attending included 430 adults and 350 children.

Idaho OnePlan. Development and implementation of the Idaho OnePlan continued this past year. The Integrated Pest Management (IPM) planner is currently being developed by a multi-state design team. The OnePlan, with its roots in Idaho is expanding to other states. Oregon will be the next state to adopt the OnePlan. At this time the nutrient and conservation management modules are completed.

Regional Groundwater Research and Extension Conference. A four state committee planned a two-day regional research and extension conference that was held in November 2005 titled "Groundwater Under the Pacific Northwest." This conference brought together research, extension and policy makers that have an interest in groundwater. Groundwater was chosen as the conference theme because the resource is currently gaining high visibility. The committee has been working on this

educational conference for the last 15 months.

2005 Satellite Conference. The fourth annual watershed theme-based satellite conference was held on October 11, 2005. The conference theme "Stormwater Management from a Watershed Perspective" originated from grass roots steering committees. This satellite conference chronicled three communities successfully meeting the EPA National Pollution Discharge Elimination System (NPDES) requirements. This conference was designed to have national appeal and highlighted watersheds in Oregon, Ohio and North Carolina. The National EPA office was our partner in this effort. The final numbers are not yet available; however, we estimate that over 1,000 people at 50 different down-linked sites viewed the broadcast. In addition many people saw the broadcast through video streaming on their personal computers.

Watershed Management Resource Directory. A regional expertise directory was developed for the watershed management national water quality theme area. This directory was developed for our local, state, regional and federal partners. It contains a summary statement of the issue in the Pacific Northwest, a list of desired outcomes, and contact information for the four most pertinent research and/or extension contacts for the specific issue at the land grant universities in Alaska, Idaho, Oregon and Washington. The directory also lists the most relevant regional and state publications related to the this theme area. Publication contact information for all four states is also provided. Printed copies of this directory were sent to relevant partners. In addition, this directory is available on our website. It is our intention to update this directory every six months.

Agricultural Water Security. In cooperation with Washington State University and USDA-CSREES, we have developed educational materials to introduce the public to agricultural water security in the Pacific Northwest. Agricultural water security is defined as the need to maintain adequate water supplies to meet food and fiber needs of the growing population - maximizing the efficiency of water use by farmers, ranchers, and rural communities. We believe that this issue will become increasingly important in the near future. We have developed the materials and the capacity to meet these educational needs in Idaho and throughout the Pacific Northwest.

Drought Resources. Low snowfall levels in mountains of the Pacific Northwest in the winter of 2004-2005 created the distinct possibility of a major drought for the summer of 2005. Based on the low snowfall totals we developed the capacity to conduct educational programs about the potential consequences of drought in both urban and rural areas of the state. We developed a drought resources directory that contained drought information from all land grant institutions in the Pacific Northwest. We also developed educational materials to reduce demand for water in urban landscapes.

Nitrogen Management. In cooperation with sugar beet, potato and small grain growers, Elmore County Extension conducted mineralization and fertilizer studies to determine the release and timing of nitrogen and fertilizer efficacy for profitable crop production and crop quality. Growers provided land, water, equipment, and their time to facilitate the trials. In 2005, three field tours, seven presentations, and a

display were used to disseminate new knowledge.

Water Education for Agricultural Professionals in the Pacific Northwest. The three Pacific Northwest states developed and delivered the Integrated Soil Nutrient and Pest (iSNAP) Water Quality Education Program. The goal of this collaborative effort is to deliver innovative education on water quality to agricultural professionals. The target audience for this educational program includes Certified Crop Advisors, Technical Service Providers, and licensed pest management professionals that want practical educational programming that is locally adapted. In Idaho workshops were conducted in Boise, Twin Falls and Coeur d' Alene. Workshop topics included nutrient management, water quality protection, drift management and phosphorus management.

Water Education for School Children. Several water education programs were conducted for school children. Extension took leadership at the annual Natural Resource Camp in southern Idaho. Over the years, more than 3,000 school-age children have attended the natural resource camp. At the camp, water education takes center stage.

Other activity

- Six presentations on irrigation management were given at grower meetings and training sessions.
- Field work continued in 2005 on nitrate use and irrigation scheduling on onions. Soil moisture monitors were installed in other crops as requested by growers. These additional crops include alfalfa, small grain, and orchards.
- The Washington County Extension Educator collaborated as a technical advisor with the Weiser Soil Conservation District on the continuation of the '319' water quality project. Results (yield, water use, nitrate use) of the 2005 season are being collected and analyzed.
- The Washington County Extension Educator participated with the Ground Water Quality Committee in planning and delivering the 2005 Water Quality 'Rodeo' for public education.
- Precision Irrigation: (1) field trial on constant rate chemical injection with center pivot, (2) field trial on precision water and nitrogen application with center pivot, (3) a Center Pivot Chemigation CIS was developed, and (4) a proceedings article was written.

(b) **Water and Nutrient Management in Urban Landscapes**. Grant funds have been garnered and research demonstration plots are in place. New knowledge is being generated from these research and demonstration projects and information is being shared with clientele for decision-making purposes. In addition, demonstration tours of these efforts are providing knowledge on how homeowners can implement these changes.

Master Gardeners received educational information on low water use landscapes and are providing an information multiplier effect as they staff summer plant clinics and educational events. Master Composters provided information to youth and adults as people want to learn how to improve their soil and environment at the same time.

As a result of these efforts, topic team members have reported the public's adoption of water-saving practices and plants. For example, extension educators report individuals are using xeriscape techniques (i.e., mulching) for landscaping purposes, replanting water-efficient plant selections in their yards, and more nurseries are offering water-efficient (xeric) plant species.

An indicator of the public interest in nutrient management is the sale of compost bins. In Ada County alone, Master Composter volunteers sold 780 compost bins during the 2005 compost bin sale held by the City of Boise Public Works Department.

A final indicator of the interest in proper management of water and nutrients while maintaining an attractive landscape is the number of people attending various tours, workshops and presentations. During the past year, 2,065 people in Idaho attended these activities during face-to-face meetings.

Key stakeholders were educated about groundwater and stormwater management at regional conferences jointly sponsored and conducted by the land grant institutions in the Pacific Northwest. Agricultural consultants were also trained at region-wide conferences. Unlike in the past, many of our 2005 water education activities were conducted on a regional basis. New educational programs were developed and delivered to address the state-wide drought and the emerging issue of water security.

Extension has advised the Mid- Snake River Regional Commission and the Recharge Sub- committee of the Interim Natural Resources Joint Committee of the Idaho Legislature. An updated version of the Economic Section of the plan for the Mid-Snake Commission was prepared. This report is used to keep county commissioners of the six counties involved up to date on what water economics is doing for the area and changes that will confront counties as changes in water and land use evolve. The second major outcome in the mid-Snake region was the report to the Interim Natural Resource committee on recommendations on what needs to be done if aquifer recharge is to take place. This report was delivered to the committee at the Idaho Capital on October 28, 2005. What actions the committee takes will affect the rate of depletion of the Eastern Snake Plain Aquifer.

The OnePlan is an ongoing project. This year we used pest decision trees to develop a crop/pest matrix for potatoes. The matrix for Colorado potato beetle was finished, and is currently being converted to web usage. We have worked more closely with NRCS, to encourage them to accept IPM as part of their Farm Bill programs. This collaboration is an outcome of our work with OnePlan. We are recognized as leaders, in the West, because of this strong collaboration between Extension and NRCS.

Growers in the Elmore and Owyhee Counties and in Eastern Ada County, and elsewhere have adapted new information and skills to their operations. For nine years, WCIECA, DEQ scientists, and regional sustainable agriculture groups have used our applied information at the state and regional water quality and nutrient management field days, conferences, and symposia. Scientists from the US Forest Service and state agencies have reported positive benefits from skills and

knowledge they gained at the workshops. Growers and field men repeatedly reported yield and quality increases as a result of applied information presented by the Educator. ISDA inquired into the use of UI mineralization data in their field guide for evaluating BMPs.

(c) Funding for various water quality programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. A regional water quality specialist is supported by a grant from EPA. Individual projects are supported by Federal and State Grants. One $160,000 grant was obtained this year to demonstrate practices and generate new, unbiased information for decision on nutrient and water management.

(d) Much of the work done on water quality is in collaboration with Alaska, Oregon, and Washington, and is coordinated by the regional Water Quality coordinator funded through an EPA grant to those four states. Other activities and projects are also collaborative with PNW states and faculty.

GOAL 5: HEALTHY AND STABLE FAMILIES

Overview

(a) Outputs: Seventy-two UI faculty members with Extension appointments reported 31.82 FTEs of activity in programs and projects related to healthy and stable families and communities. Thirty-four Extension coordinators and other staff contributed an additional 24.01 FTEs to the youth development program. In total, UI Extension faculty reported production of 184 publications and conducted 72 educational events unique to Goal 5 (exclusive of the hundreds of 4-H club events through 2005). Faculty and staff combined to accumulate 153,546 individual teaching contacts in healthy and stable families and communities.

(b) Outcomes:

Several thousand elderly learners are better prepared to use Medicare prescription drug discount cards, and hundreds more have learned about choosing long-term care options. Idaho residents are more sensitive to issues of cultural diversity, and youth are better prepared to exhibit culturally-appropriate behaviors. Idaho farmers and ranchers have improved financial management skills, and are applying those skills to their business enterprises. Idaho families (particularly those with limited resources) and teenagers have greater understanding and new skills related to financial management and protecting financial assets.

Idaho communities have access to new information, have acquired new infrastructure, have created new development plans and strategies, and have committed to better training of citizens and volunteers to help achieve community goals. Businesses have new customer relations knowledge and skills and new business management tools that they are using to improve their enterprises.

Parents and childcare providers have new skills to facilitate child development and

learning. Children of deployed military personnel have access to character- and skill-building 4-H programs. More Idaho youth than ever are acquiring important life skills, through 4-H clubs, camps, and after school programs.

(c) Impacts:

The impact of 4-H has been demonstrated to improve academic performance and reduce patterns of destructive behaviors for participating youth. Impacts of finance-related programs for seniors (such as the Medicare drug card program) are to improve the quality of life of limited resource seniors by increasing access to prescription drugs while conserving limited income. Impacts of business management programs, for agricultural and other kinds of businesses, are to maintain a larger number of successful businesses, and consequent employment and contribution to Idaho economies.

(d) Successes: The Civil Society Topic team developed an innovative educational experience grounded in an historical perspective on human rights issues in Idaho, called Idaho's Journey for Diversity and Human Rights. The program is conducted in partnership with dozens of advocacy-type organizations, and has provided a focal point for conversations about diversity and inclusivity. The experience is designed to allow older youth and adults from communities around Idaho to visit key sites that are turning points in the history of human rights and intergroup relations in the state. At each site, participants learn about the events involved and how they contributed to the course of human rights in the state.

Evaluations of the Idaho's Journey programs showed that participants increased significantly in their knowledge about, and commitment to issues of diversity, inclusivity, and human rights. An important unintended outcome was the creation of a network of individuals and organizations in Idaho working to share similar messages and accomplish similar goals.

(e) Financial resources to support programs reported in Goal 5 include approximately $729,385 in Federal Smith-Lever funds, $2,457,409 in State appropriations to Agriculture Research and Extension, and $869,337 in County appropriations to Extension. Approximately $760,394 in public and private grants also was used to support activities in Goal 5.

Key Theme- Aging

(a) **Medicare prescription drug card education**. As a result of past successful collaborations with the Idaho Department of Insurance and the Area Agency on Aging, UI Extension was one of five states chosen to receive a $50,000 grant from the Centers for Medicare and Medicaid Services (CMS) to provide Medicare drug card education to Idaho's seniors in 2005. The goals of the UI Medicare drug discount card project are to:

- Develop and implement public information and outreach campaigns through public service announcements, paid advertising, press releases, and other media.

- Implement community education and outreach efforts focused on reducing confusion, increasing understanding about resources available, and providing support to beneficiaries in decision-making and enrollment.

Extension-produced Medicare-approved prescription drug card public service announcements and purchased advertisements were aired/printed in Idaho mass media 551 times reaching a large portion of Idaho residents. Educators also used Extension and senior citizen newsletters, flyers, posters, pharmacy bag inserts, and table tents displayed in Senior Centers. Extension newsletters alone reached 10,636 Idahoans. UI Extension formed partnerships with 38 state and local organizations such as the Idaho Senior Health Insurance Benefit Advisors (SHIBA), area Offices on Aging, local senior citizen centers, hospitals, and pharmacies. Eight UI Extension educators and 22 Extension-trained volunteers provided Medicare drug card awareness and education in 39 of Idaho's 44 counties. Through a series of 260 educational events and one-on-one counseling sessions, Extension (with our partners) reached a total of 2,845 individuals in face-to-face contacts.

Long Term Care. UI Extension partnered with AARP-Idaho to facilitate long-term care workshops in multiple communities. These programs were attended by more than 500 people across the State.

The Canyon/Owyhee Financial Literacy Coalition, led by UI Extension, recognized a lack of unbiased low cost education to prepare people for later life legal issues. They teamed with community organizations and local attorneys to offer four *Legally Secure Your Financial Future: Organize, Communicate, Prepare (LSYFF)* workshops in Boise and Caldwell.

More than 300 participants attended the series and learned about legal issues they need to address to achieve financial security in later life. The program encourages individuals to make a detailed evaluation of their legal affairs and suggests resources that provide self-help or professional assistance.

- Recognize the importance of personal records, a valid will, powers of attorney, advance health directives, and other estate planning documents
- Gain an awareness of knowledge of the kinds of personal information to gather, organize and store so that family members can easily access them
- Develop a list of important documents to be organized and/or updated
- Understand how to select and work with an attorney
- Increase knowledge of estate planning and end-of-life issues, and develop a plan to address them

(b) UI Extension's drug card campaign increased Idahoans awareness of this new Medicare program. For example, in October 2004 the Idaho Falls Area Office on Aging sponsored an enrollment activity and only three people attended. After Extension's media campaign in Eastern Idaho to promote a November drug card enrollment activity, 215 phone calls were received. Sixty-four Medicare beneficiaries enrolled in a drug card program and 31 were eligible for the $600 credit.

During the first three months of the grant we documented at least 255 beneficiaries

who enrolled for a Medicare-approved drug discount card; the actual number may reach several thousand. Potential savings for Idaho seniors who enrolled in the drug discount card program during the first three months of the UI education program is $270,000. Recipients use their savings to purchase other necessities, thus improving their well-being and the economic vitality of their communities. An example is a Caribou County woman who reduced her monthly medication bill from $360.56 per month (62% of her monthly income) to $3.51 because the Medicare Program Coordinator helped her to not only enroll for the drug discount card, but to also sign up for free meds-a special program for the very limited income.

Materials developed by UI Extension for the Medicare Prescription Drug educational campaign were requested by the Center for Medicare, the Cooperative State Research Education and Extension Service (CSREES) Family Development national program leader, and other state Extension systems.

Nearly 300 participants from Ada and Canyon counties attended the long-term care workshops. Participants learned how to plan for LTC, manage the risk of LTC, and protect their financial security despite LTC's high costs. The workshops generated very positive comments and evaluations from participants, partners, and speakers.

Post-evaluations returned by workshop participants indicate:

- 95% became more aware of long-term care issues.
- 82% gained new resources to help them make long term care decisions.
- 86% became more aware of long-term care options.
- 90% felt the information gained will be useful to themselves and their families.

Actions participants plan to take as a result of attending the Long Term Care Workshop include:

- 86% will review the publications they received.
- 74% will share the information they gained with a family member or friend.
- 44% will review their financial assets to determine how they will pay for long term care.
- 53% will determine the type of long term care they prefer, in case it's needed, and will discuss their preferences with a family member or friend.

Because of the need and overwhelming response, UI Extension is continuing our AARP-Idaho partnership in 2006 to provide mid-life and older Idahoans with Long Term Care workshops in southwest Idaho. Long Term Care continues to be of concern by local Ada and Canyon county advisory committees and area residents.

At the conclusion of *Financially Secure your Legal Future* program, participants indicated that they either plan to, have begun, or have completed the following legal actions:

Tools	Plan to do	Started or completed	Response 6 months later
Inventory of important papers	60%	40%	50%
Family records organized	32%	69%	75%
Property records organized	32%	61%	61%
Written will	40%	57%	57%
Household recordkeeping system	32%	64%	50%

As a result of participating in this educational program:

- 91% have discussed legal issues with family or plan to start discussions.
- 81% indicated they are better prepared for end-of-life issues
- 70% indicated they had increased their estate planning knowledge a lot or a great deal.

(c) Funding for various programs targeting issues related to aging includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and $174,626 in grants from various private and public sources.

(d) The Medicare prescription drug card program and long-term care programs were conducted across the state. Long-term care workshops were also delivered to residents in Washington State. Legally secure your future was conducted in Treasure Valley, and Idaho faculty participated in a national effort to develop the Financial Security component of eXtension.

Key Theme- Agricultural Financial Management

(a) During the first year of the Farm Financial Management class, producers set goals specific to their enterprises, evaluate resources such as land, equipment, personnel, and finances, and analyze current production practices. A complete set of financial statements is produced by each class participant for their respective operations. Another emphasis of the first year class is to have producers obtain costs of production for each enterprise contributing to their operations. Participants then use computer software to obtain a complete financial analysis of their current operation.

In the second year of the class, producers apply the principles learned in the first year to more advanced topics such as marketing, risk management and estate planning. Personnel management is also emphasized with sections on employee management and team building. Producers are required to complete a second year of financial statements and production costs using the FINPACK financial planning and analysis program. After a second year of tracking costs of production, participants begin to develop trends and use their own information to make appropriate changes to their operations to become more efficient.

In eastern Idaho, the 10-week Farm and Ranch Management class was taught in two locations this year; Rexburg and Montpellier. Twelve operations participated in the course for a total of 22 students. Additional family members often attended the class when their schedules would permit. Several participants attend the class to satisfy FSA beginning farmer loan program requirements.

(b) Completion of financial statements and a business plan is the best method of evaluating class effectiveness. Producers that are able to learn the principles necessary to complete the statements have gained skills important to becoming better managers. These skills are the tools that will keep these producers in business and allow them to make profit a reality in their respective operations. This year the farm management classes had 16 farm families participating. Fifteen of the sixteen families completed a financial analysis. All of the families were able to compile the information they needed for a business plan by combining information from both the first and second years' class.

Producers were able to learn about and start to practice risk management strategies, especially as it relates to price risk. Producers gained hands-on experience with the futures market and were able to win and lose money in their simulated accounts. Producers were able to find answers to questions about estate planning--how to proceed and where to go for help. Producers were able to find out about the costs of retirement and received ideas on how to fund the next stage of their lives. Producers talked to a lawyer concerning the best method of estate planning within their own families. Many producers were able to start the process of

giving to the next generation in response to these classes. Producers were able to gain knowledge of working relationships with their employees and received help in creating a better working environment for their farm workers. A comment made by a program participant: “You may think I'm exaggerating, but since we've taken your class we finally feel like we've been able to get our feet under us. We've gotten so used to losing hundreds of thousands of dollars each year…we felt like there was nothing we could do. But now, we are able to keep track of things and manage what is going on. This is the first time in years I've been excited about farming.”

As a result of their participation in the University of Idaho's Trade Adjustment Technical Assistance Program for Idaho Fresh Market Potato Growers, 267 individuals were eligible to receive benefits under the Trade Adjustment Assistance program.

For potato growers attending the machinery cost management workshop, 89% found the information useful or very useful, and 50% planned to adopt most or all of the practices recommended by educators.

For sugarbeet growers who attended demonstrations of the Crop Enterprise Budget Worksheet Program software, 96% reported increased knowledge and understanding sufficient to enhance their ability to develop production cost estimates. Responses from potato growers who attended workshops on calculating cost of production indicate that all found the information useful and that more that half would apply that information on their farms.

(c) Funding for various programs in agricultural financial management includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources. Targeted support is also provided through the Risk Management Agency.

(d) Agricultural Financial Management programs are provided statewide. Risk management education programs are in response to national priorities, and are collaborative with other Land-grant institutions in partnership with the Risk Management Agency.

Key Theme – Character/Ethics Education

(a) The Civil Society Topic team developed an experiential educational program grounded in an historical perspective on human rights issues in Idaho, called Idaho’s Journey for Diversity and Human Rights. The program is designed to allow older youth and adults from communities around Idaho to visit key sites that are turning points in the history of human rights and intergroup relations in the state. At each site, participants learn about the events involved and how they contributed to the course of human rights in the state. Idaho’s Journey was launched this year, with an initial workshop in northern Idaho in July 2005, and a second workshop in the Treasure Valley area in October 2005.

In addition to Idaho’s Journey, the Civil Society Topic team offers shorter workshops on diversity and human rights, including two educational simulations, *BaFa BaFa*

and *Starpower*. *BaFa BaFa* was offered five times in the program year. The simulation is followed by a directed discussion among the participants about the challenges of intergroup relations, stereotyping and discrimination.

Manners Mishaps: Extension educators in eastern Idaho offered a program in the schools called Manners Mishaps, to help young people develop positive personal habits in a fun setting. Student knowledge was measured before and after the program. Other workshops included: *Be the best you*; *Your career, your future*; *Careers in Family and Consumer sciences*; *Spring cleaning and quick tips*; *Really enjoy life by preserving memories*; *Dressing for your body type*; *North-South-East-West Personalities*; *Home and kitchen management for the visually impaired*; and *Welcome to the area night*.

(b) Evaluations of the Idaho's Journey programs showed that participants increased significantly in their:

- Knowledge of people and events important to Idaho's past and present challenges of diversity and human rights.
- Knowledge of how Idaho's past challenges can help us understand present day issues of diversity and human rights.
- Knowledge of strategies that have been successful in addressing issues of diversity and human rights.
- Ability to speak up or take action on issues of diversity and human rights.
- Connections to others in Idaho concerned about diversity and human rights.
- Commitment to helping address issues of diversity and human rights.

The average score on the Manners Mishaps pre-test was 65% and the post-test score was 96% reflecting knowledge gained. The correct answers in the game revealed that the students were able to understand and apply the information presented. The following are student responses to the question: What is one new thing you learned as a result of participating in the Manner Mishaps program?

"Not to eat dessert until everyone else has theirs"

"How to use your napkin"

"That the dessert silverware is on the top or above the plate"

"That when you don't like a food you move it around the plate instead of just eating it."

"You use the silverware from the outside in."

"Dispose of things that can be embarrassing to the host."

"I like the program. I learned a lot."

(c) Funding for character and ethics education programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension.

(d) The character education programs are delivered in locations across the State.

Key Theme – Children, Youth, and Families at Risk

(a) Bannock County 4-H received a $2,600 grant from the Governor's Coordinating Council for Families and Children to fund the Silver Linings program in collaboration with the 6th District Court. The program provides children with emotional and physical tools to help them deal with the difficulties of their parents' divorce. The program helps children understand common emotions both they and their parents may be experiencing. It also helps the children recognize and appropriately express their feelings and concerns. During this past year Silver Linings Workshops have reached 80 participants and have received very positive evaluations.

The Juvenile Justice Intensive Supervision Program (ISP) is a program for high risk juveniles in Bannock County ages 15-18. The program helps lower or overcome participants' risky behaviors and provide them with practical skills that can help them become contributing citizens. While in this program youth are required to get their GED and fulfill responsibilities related to their previous offenses. 4-H faculty members have provided bi-weekly classes/activities for the ISP program for the past year. The 4-H classes provide these youth with experiences that will enable them to develop basic life skills and live a better life. Activities/classes have included topics such as; financial management, goal setting, employment opportunities, vegetable and flower gardening, leather craft, basic food preparation, and service opportunities. Forty youth have entered the program in the last year.

(b) No outcomes were reported this period.

(c) Funding for various programs targeting youth at risk includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and grants and in-kind support from juvenile justice advocates.

(d) The program reported for 2005 is delivered in Bannock County, ID.

Key Theme – Community Development

(a) The Community Development Topic Team's programming efforts for 2005 focused around three main areas: (1) Economic Development (2) Physical Infrastructure Development and (3) Social and Organizational Infrastructure Development. Eighteen faculty consisting of both county Extension Educators and Extension Specialists provided a total of 90 educational opportunities as follows: 12 classes, 3 seminars, 54 workshops, 3 short courses, 10 professional meetings or invited presentations, and 8 other teaching events. Total face-to-face contacts were 1,892. Educational programs were presented in 23 different counties throughout Idaho, Washington, and Wyoming. The Community Development Topic Team members published six University of Idaho Extension Impact Statements.

Specific educational programming clustered around five different topics: (1) Leadership development & training (reported in a following key theme); (2) Economic development training (3) Specific community project coaching and capacity building (4) Technical assistance for developing the physical infrastructure of communities (5) Community survey design assistance, strategic planning & feasibility studies.

Extension Educators throughout Idaho conducted specific community development programming, assistance, and coaching last year. Twelve UI Extension faculty members provided assistance to at least eleven different community projects including:

- Helping to form a Grandparents Raising Grandchildren support group in Nez Perce County.
- Development of Summer Youth Activity Camp for limited resource youth in Nez Perce and Asotin (Washington) Counties.
- Assisting the community in offering Long-Term Care Planning in Nez Perce County.
- Developing demographic brochures and presentations for community leader decision making in Teton, Bonner, Boundary, and Madison Counties.
- Conducting in-depth community reviews for the communities of Kuna & Ashton.
- Helping communities address weed control issues in Madison County.
- Helping community organizations and institutions to address learner differences and multiple intelligences in Ada, Payette, and Blaine Counties.
- Helping design an awareness and education campaign for addressing senior prescription needs in Nez Perce, Idaho, Clearwater, Lewis, and Latah Counties, and the Washington counties of Whitman, Asotin and Garfield.
- Providing grant-writing, record-keeping and financial sustainability training for small non-profits in Idaho and Lewis County.
- Providing sustainability training for Idaho's after-school programs.
- Providing in-depth coaching, mentoring, and training for community capacity building in Clearwater and Lewis Counties. (Communities of Orofino, Kamiah, Elk River, Weippe & Pierce.)
- Providing an Indian Land Tenure course to help local community residents better understand local land tenure issues and resulting conflict in Benewah County.
- Idaho faculty organized and participated in the Great Basin Summit to address regional community development issues.

(b) Two Extension Educators were involved with helping their respective county fair boards in the building and remodeling of physical infrastructure. In Teton County the fair board was able to construct a new livestock show arena and Power County was able to complete the remodel of their Community Building.

Five communities and/or community organizations benefited from survey design assistance, feasibility studies and strategic planning assistance by UI Extension Faculty. Faculty helped the Camas County Chamber of Commerce design a community survey to determine citizen interest in developing a community education center. Faculty assisted Valley County to determine the feasibility of developing a Valley County library district. Faculty conducted strategic planning sessions for the West Central Highlands RC&D Council in Emmett and the Nancy M. Cummings Research, Extension and Education Center advisory board. Faculty helped conduct an economic feasibility analyses and provide business plan assistance for the

development of a Wild Horse Interpretative Center. Faculty also assisted the Idaho's Health Care Services Industry and Sugarbeet Industry by providing economic impact data and analysis.

(c) Funding for community development programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private sources.

(d) Community development projects are conducted in communities across the State. Several projects are conducted in Washington, as well. Collaborations through the Western Rural Development Center tie Idaho to community development programs across the State. Faculty participated in professional development in Wyoming and Nevada; and with Utah, Nevada, and Oregon in the Great Basin Summit.

Key Theme – Family Resource Management

(a) **Basic Financial Management Education** outputs included 413 clients enrolled in the EFNEP program; 224 (54%) of them completed the *Dollar Decision$* class. A Spanish version of *Dollar Decision$* is currently being produced and translated. Because of overwhelming demand for the "*Surviving on Shrinking Paychecks*" series of classes co-sponsored with the Idaho Statesman in August of 2004, additional classes were offered in winter 2004-05.

Collaborating with the Bank of Commerce, UI Extension offered *I'm Banking on It!*, a four week class series design to teach sound financial strategies to improve personal finances. The Bank of Commerce contributed $400 by purchasing newspaper ads, providing the materials for the class and sponsoring two $50 savings bonds for attendance incentives.

Basic Financial Planning was taught as part of *Married and Loving It!* The *Dollar Decision$* materials were used for this class. Basic financial management topics were the topics for numerous articles in News and Views, Home Wise, and one popular press article.

Welcome to the Real World and **Give Me Credit** programs were delivered in some 71 junior high and high school classes to approximately 1,620 youth. These classes improve youth financial literacy directly, and by educating parents, teachers and youth leaders how to teach personal finance and help youth obtain employability skills. In many cases, Extension provides training and materials for others to teach the youth; in other cases, Extension delivers the programs directly. Education is goal linked, positive, team-oriented, entertaining, and exciting. Humor, silliness and irreverence are techniques to reach today's youth.

(b) Of all EFNEP participants who completed the *Dollar Decision$* class, 156 participants (70%) will more often compare prices when shopping and 176 participants (79%) will more often use a grocery list when shopping. In addition:

- 93% planned to establish an emergency savings fund (compared to 18% before participating)
- 86% gained knowledge and indicated they will set financial goals.

- 87% reported that they gained knowledge and indicated that they would budget.
- 86% reported that they learned how to decrease expenses or increase their income.
- 92% reported that they wil ask themselves whether a potential purchase is a want or a need.
- 96% learned a method that will allow them to track their spending.

More than 180 people in Idaho and Nez Perce counties attended Identity Theft presentations; more than 550 people statewide participated. At the end of the workshops, participants filled out a pre/post retrospective survey that identified the following types of behavior and knowledge:

As a result of these workshops:

- 98% of participants showed an overall increase in knowledge about identity theft and the behaviors they can implement to reduce their risk.
- 99% of participants indicated they would be more careful to whom they give their personal / financial information.
- 95% will obtain a copy of their credit report. (An increase of 9% from 2004).

Participants completed a retrospective survey at the conclusion of the I'm Banking on It! series. Participants self-reported increased knowledge about:

- the importance of tracking expenses (from 30% to 95%),
- methods for tracking expenses (20% - 80%),
- time impact on money saved (20%-70%),
- ways to save small amounts of money (15% - 75%),
- information included in a credit report (10% - 85%),
- how to request a credit report (15% -100%), how a credit score is calculated (5% -70%),
- ways Identity theft occurs, (5% - 80%),
- how the “check 21” law influences consumers (5% - 65%),
- ways to improve my financial situation (0% - 80%).

Post surveys given to those who participated in the Welcome to the Real World program, indicate the following responses from participants :

- 94% agreed (54%) or strongly agreed (40%) that the program was interesting
- 99% agreed (39%) or strongly agreed (59%) that the information was helpful.
- 93% agreed (44%) or strongly agreed (49%) that the activities were helpful
- 96% agreed (35%) or strongly agreed (61%) that participating in the program will help them in the future.

The post survey also had students indicate what skills they learned from the program:

- 57% learned how to open a checking or savings account
- 31% learned to correctly write a check

- 63% learned how to use a debit card
- 61% learned how to balance a checkbook
- 63% learned how to balance income and expenses
- 75% learned how to reconcile a bank statement
- 92% learned the national percent of the budget spent on different expenses.

(c) Funding for programs targeting issues related to family financial management includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and several grants from various private and public sources. In addition, a portion of the resources for EFNEP and the Food Stamp Education program are used for family financial management education.

(d) These family financial management programs are delivered statewide.

Key Theme – Leadership Training and Development

(a) Leadership Development and Training programs included presentations to Leadership Idaho Agriculture, participation on the Leadership Jackson Hole steering committee and in the Lincoln Leadership Institute in Wyoming.

These leadership programs were designed to enhance participant's leadership effectiveness and to help them gain an understanding of their local issues. Presentations were given on critical thinking and how to create a local steering committee for a leadership program. Four Extension faculty served as trainers for the Leadership Plenty program that was part of the Horizons Area Northwest Foundation project in the communities of Orofino, Pierce, Weippe, Elk River and Kamiah. This leadership training consisted of nine 2 ½ hour training sessions. During each session, opportunities were given for the community participants to apply new skills and techniques to existing issues in their communities.

Youth -- Several state and national leadership opportunities are offered to youth each year. Twenty-one teens and 22 adults helped plan and present the Know Your Government Conference held in Boise, February 19-21, 2005 which was attended by 157 youth and 47 adults. Sixty five elected state officials, legislators and Judges also participated in the Conference. In June, 21 youth met with the planning committee to evaluate and plan the next conference. They met with the Secretary of State and worked with a state legislator for training in their roles as committee chairs.

Eight youth and one adult attend National 4-H Conference in 2005. Idaho youth assisted with a workshop on Operation Military Kids and one of them addressed the Conference delegates about OMK at an assembly. One of the 2004 delegates served on the 2005 National Planning Committee. Nine Idaho 4-H members and two adult volunteers participated in National 4-H Congress, Nov. 25-30, 2004.

Idaho 4-H Teen Conference, held on the University of Idaho Campus June 20-24, 2005, was a collaborative effort with Washington State this year and included 30 delegates from Washington, one from California, and 229 youth from Idaho, 12

college staff, and 24 adults, including five from Washington. Idaho 4-H Teen Conference is planned each year by a committee of 13-15 youth and four adults. Additionally, two teens and one adult from Washington State participated in the 2005 planning process.

Youth and adults work in partnership to plan and implement the week-long youth development conference. Both the planning process and the conference itself are designed to give youth real-life opportunities to develop socially and emotionally, and to develop practical life skills. Faculty supports the committee by facilitating team building activities at the fall retreat to help the group work together effectively. Faculty also assists the Idaho 4-H Teen Association Officers by familiarizing them with their respective duties and giving them tools to help them fulfill their duties.

Sixty-seven participants from four states (Idaho, Washington, Oregon, and California) attended the 2005 Youth Development Institute held 15-17 March in Boise. Professions represented outside of Extension/4-H included after school program professionals, juvenile probation officers, youth ministers, Girl Scout professionals, and a staff member from the Idaho Commission on Hispanic Affairs.

(b) Data from the Kamiah and Orofino training indicated that a total of 86 participants attended the Leadership Plenty training program. Self-evaluations showed that participants believed that they had significantly increased their knowledge and abilities in leadership after completing the training program. Increases in learning were reported in the areas of:

- knowing how conflict and tension influence group work
- knowing the value of bringing citizens together to talk about issues
- knowing how partnerships influence community problem solving
- knowing how to plan and implement community change projects
- ability to work with the leadership in their organization and/or greater community
- ability to lead productive meetings
- ability to recognize leadership skills in others
- ability to guide discussions among diverse groups of people

In addition, 56% of respondents attributed half or more of their current level of knowledge and understanding about leadership and community involvement to the Leadership Plenty training they had received. Additional information regarding the Leadership Plenty training in Kamiah and Orofino is published in the “Leadership Training for Rural Communities” Impact Statement.

Youth – At Teen Conference faculty worked with a group of teens and adults to lead a workshop, using a mobile computer lab to produce a fifteen minute slide show, an eight-page newsletter, and a three minute video on the 2005 conference. All three pieces turned out very well and are being used to promote the 2006 conference. Idaho 4-H Teen Conference is evaluated using a logic-model questionnaire to determine the effectiveness of the various workshops offered at the conference. Several qualitative questions are asked to help the committee with planning for future years. In general, Idaho 4-H Teen Conference rates very high on questions

assessing short-, medium-, and long-term outcomes. Scores for all week long workshop tracks continue to be scored between 3 and 5 on a scale of 1 to 5. An additional question assesses whether the high school-age participants are considering attending the University of Idaho in the future. Two-thirds of all respondents said yes in 2005. Another question asked participants to recall what they would bring back to their counties. Many responses included life skills like leadership, communication, and teamwork. These responses help to show the positive impact an event like Idaho 4-H Teen Conference has on the youth that attend.

Participants in the youth development institute reported that knowledge about youth development improved from some to a good deal. Preparedness to do youth development improved from somewhat, to pretty well prepared. Understanding about social, physical, and mental youth development improved from some to a good deal because of YDI.

Skill levels improved for fostering multi-generational communication, ability to minimize intergenerational conflict, build teams, find and keep volunteers and effectively reach youth with education.

Overall Institute usefulness and knowledge gained at Institute were both ranked 4.3 out of 5. The most important idea presented at the institute was to incorporate intergenerational and multi-generational concepts into their youth development practice. Twenty-two individuals indicated they would use their new understanding of multi-generational concepts to work with co-workers, in building better teams, in program planning for clientele, volunteers, and teens. Other key ideas that will be incorporated into practice by five or more participants are to address marketing, and to better recruit teens and volunteers.

(c) Funding for leadership training and development includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from various private and public sources.

(d) The Idaho 4-H Teen Conference was planned with, and conducted in collaboration with Washington State. The Youth Development Institute was a collaboration with youth development specialists and leaders from Washington, Oregon, and California. Idaho contributed to the National 4-H conference, and work with Operation Military Kids is part of a multi-state network.

Key Theme – Marriage Education

(a) *Married and Loving It!* is a multi-session curriculum designed for couples at any stage of their relationship. The program continues to impact the lives of adults in couple relationships in Idaho. Critical issues funding produced a new 10 minute promotional video. The *Married and Loving It!* series held in February of 2005 in Bonneville County attracted a full class. This group included several engaged couples and those married only one year. An article describing Married and Loving It! was published in the Extension Trends. *The Married and Loving It!* pages on our county web site received 912 hits this year.

(b) *Married and Loving It!* has generated impressive outcomes over the past several years that have been included in previous reports. The *Married and Loving It!* curriculum has been distributed to 39 states and 3 foreign countries.

(c) Funding for marriage education includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, and appropriations for County Extension programs. A UI critical issues grant was also used to support this area.

(d) Marriage education programs are conducted within Idaho.

Key Theme – Parenting

(a) Thirteen counties in Idaho are host to *Parents as Teachers* sites, with county educators developing advisory committees, hiring and supervising parent educators and overseeing the data collection facet of the program. At the state level, UI brought skills in program development, research, and evaluation to develop policies as needed, devise an evaluation scheme with relevant data indicators, coordinate data collection, and analyze the data.

The UI PAT team has been working over the past 2 years on a curriculum for the parent meetings which are an integral part of *Parents as Teachers*. We are happy to say that we completed it this year. It includes complete materials for 12 meetings of parents of young children. We expect to market it to *Parents as Teachers* programs around the country and to other groups that feature parent meetings, such as parent support groups, Head Start, and preschools.

We also serve 20 home-based child care providers in the state with a *Parents as Teachers* curriculum designed for child care. This program has been very successful, especially in rural Idaho where it is hard to get to child care training. Care providers particularly like the hands-on learning with the children right in their care setting. Qualitative data from providers when asked why they enrolled: “I'm always looking for ways to make my childcare business more beneficial to me, my kids, the children I care for and their parents,” I wanted the children in my daycare to be ready for kindergarten,” and “To become more educated.”

County educators offer specialty seminars and workshops on parenting as needed in their communities, including *Parenting 101*, *Parenting - Where is the instruction manual?* and, *Active Parenting of Teens*. Boundary County Extension offered parenting programs for migrant parents, and translated handouts into Spanish for the Spanish speaking participants. In addition, UI has developed parenting handouts for limited resource families in the ENP program. Several FCS educators contribute articles on parenting to their county and district newsletters for area families.

Extension educators in some counties have been working with the Idaho Office on Aging to develop support groups for grandparents raising their grandchildren. Active Extension participation in the KinCare Coalition is developing support for grandparents around the state. Since 2001, the Coalition has increased the number of statewide support groups to 15. Extension has written a series of tip sheets

which have been used by the support groups, including three new tip sheets this year.

(b) Evaluations have shown that parents in PAT increase their knowledge about child development and their confidence in their parenting ability. In addition they gain new abilities to meet the challenges of parenting, and are better networked with other parents of young children. Our community surveys show that PAT has a good fit to Idaho communities, bringing a unique resource for children and families. Finally, an assessment of reading readiness shows that Idaho PAT children are ready for reading when they enter school.

We are currently in the final steps of evaluation including measuring parents' understanding of what it means for children to be ready for school, and what roles they can take to support their children's learning in school. In addition, we will assess the extent to which PAT children move successfully into the school environment.

The *Parents as Teachers* program has generated some "value added" features. In one county, care providers involved in the PAT child care program have developed a support group to share ideas and resources. In Bonner County, Extension developed a First Books grant to provide free books to the children in the child care centers, and also distributes Child Care Connections to participating child care providers. The Gooding County PAT parent education program is also in the First Book program and will be distributing books to participating families. Gooding County also offers a weekly play group to participating PAT families.

(c) Funding for parenting programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and grants from public sources.

(d) Parenting programs are a Statewide effort for UI Extension.

Key Theme – Promoting Business Programs

(a) Economic Development programming focused on primarily two areas (1) customer service training and (2) entrepreneurial & business/agribusiness training.

Entrepreneurship efforts included NxLevel training designed to help participants complete a comprehensive business plan. Participants received training on a variety of topics including, planning and research, management, legal structures, marketing, cash flow and budget analysis, interpreting financial statements, ratio analysis, and financing strategies. To date 80 individuals have participated in the Panhandle area and 19 in Valley County.

The impact statements, "UI Extension Program Benefits Idaho Panhandle Entrepreneurs", and "Entrepreneurship Courses Benefit Current and Potential Business Owners in Valley County" provide additional information on these entrepreneurial programs.

Customer Service programming included two 2-hour workshops in North Idaho on ten different occasions with a total of 175 participants. Thirteen individuals

participated in the course offered in Burley, Idaho. In these workshops participants learned the fundamentals of outstanding customer service.

In addition to the introductory customer relations workshops, nine follow up workshops were conducted with various businesses, non-profit and governmental agencies in Northern Idaho. Eight of the workshops were conducted on team building and one on Working with Difficult people. A total of 151 participants attended the advanced workshops.

(b) Evaluation data from post course evaluations indicate the following:

- 67% of respondents have reported a change in business practices as a result of taking the course.
- 60% of survey respondents continue to operate or have expanded their business six months after completing the course.
- At least seven full-time and sixteen part-time jobs have been created by program participants.

Workshop evaluation data revealed that the purposes of the workshops were largely realized. Participants indicated:

- Increased confidence in their ability to diffuse angry customers.
- Increased ability to make the most of first impressions with customers.
- Increased knowledge in the skills needed to delivers great customer service.

Workshop participants developed attitudes needed for customer service programs to be effective. Participant attitudes included:

- Agreeing that creating and keeping customers is important.
- Agreeing that delivering service that makes a positive impression takes more than simple courtesy.

Participants were also able to recite the six pillars of excellent customer service and discuss the meaning of those qualities in their work. One participant remarked, "I'll remember the six attributes of customer service: partnership, generosity, truth, vision, balance, and grace." Additional comments included, "Something new I learned is that it is my choice to make customers have a good or bad experience".

The UI Extension Impact Statement, "Customer Service Program Impacts County Residents", presents additional information on these programs. In additional to impacting Idaho clientele, twenty-two Idaho Extension Educators were trained on how to deliver customer service training in April in an effort to build institutional capacity to offer future programming in this area throughout Idaho.

(c) Funding for business promotion programs includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs, and contributions from various private and public sources.

(d) Promoting business programs are conducted in a variety of locations across Idaho.

Key Theme – Youth Development / 4-H

(a) Forty seven UI Extension faculty and staff reported outputs for this key topic. There

were 54,217 youth involved in Idaho 4-H programs and 3,934 volunteers working with the youth. This represents a 13% increase in youth membership and a 6% increase in volunteer involvement. The participation of Hispanic youth in 4-H programs is up 9% from last year with 4,548 Latino youth participating. Programs conducted in partnerships with schools continue to increase and represent 59% of our total involvement in 4-H programs. Last year only 36% of the youth participating in 4-H lived in rural areas. Our most popular projects were: Technology and Engineering, Foods & Nutrition, and Animals.

To assist busy individuals and reduce costs, many of the 4-H materials are now available on the web site or on CD, increasing their availability and decreasing the costs of printing and shipping. The Idaho Volunteer Handbook was updated and distributed to all counties on CD.

Expand Resources to Support 4-H Youth Development:

Grants have become a major source of support across the state. Idaho State 4-H Staff have received more than $500,000 in grant funds this past year including the new Idaho's Promise Americorp grant for $265,000. Idaho is one of 10 states receiving grant funds to work with youth of families who have a parent from the National Guard or Army Reserves deployed to Iraq.

The Idaho 4-H Endowment Board allocated more than $55,000 for a variety of statewide 4-H programs. Included in these funds is $7,500 to assist with implementing innovative 4-H programs and $8,000 in college scholarships for 4-H members. The Idaho Friends of 4-H, an annual giving membership program, was created this year.

Operation Military Kids:

Idaho 4-H coordinates a state-wide effort to help State and County Cooperative Extension staff, community agencies, schools, and 4-H Club youth reach out to military youth…before, during, and after their parents are deployed. This outreach effort is called Operation Military Kids (OMK). The project has received $140,000 in USDA funding in addition to two $30,000 grants which help the Mountain Home Air Force Base implement 4-H activities for military youth and partner in other Operation Military Kids programming. A $50,000 Mobile Technology Lab was also received to support this 4-H/Military partnership.

Expanding 4-H Youth Development Programs to Reach New Audiences

Although Idaho is 90% non-Hispanic-Caucasian, there has been a 67% increase in Hispanics since 1990. To reach this audience methods beyond the traditional 4-H clubs are being used. Statewide 3,150 Hispanic youth in 16 Idaho counties participated in 4-H After school programs last year.

In Twin Falls approximately 75 adults signed up for English as a Second Language classes each semester. For a variety of reasons only half of these actually show up for class. One of the reasons expressed by participants is the inability to leave children at home. Of those that do participate an estimated 70% bring their children to the class. Urban Extension Grant funds were received for implementing a 4-H program for youth whose parents participate in English as a Second Language

classes. Two employees have been hired and 4-H program curriculum will be provided to use every week until school is out in the spring of 2006.

A Latino Youth Empowerment Conference was conducted in south central Idaho. This conference was sponsored by the Idaho Commission of Hispanic Affairs. Youth attended an all day program to learn about 4-H.

In Ada County the 4-H faculty and staff are presently working with the Hispanic Cultural Center of Idaho and the Idaho Child Nutrition Program to address childhood obesity through the *Health and Nutrition from the Garden* curriculum.

Canyon County was awarded an Urban Extension Grant to hire a bilingual 4-H Program Assistant who will work with youth in an after school program in Nampa. The Nampa program is funded by a 21st Century Learning Center grant, which will contribute a matching amount of funds for the program assistant position. The funds were obtained to sustain the position for three years. Also in Canyon county, an after school technology program for elementary age youth was conducted at a migrant housing complex. More than 80 youth participated in the program. A week long Art and Technology Camp was also conducted for migrant youth.

In Fremont County, 4-H received a grant to teach aerospace/rocketry in 6th grade summer school. Eighty percent of the participants were Hispanic. Many are in summer school because their parents want them off the street and summer school is an inexpensive and safe activity. This project will be expanded next year and the school system has committed to fund the project.

4-H Day Camps reach many youth who do not join traditional 4-H clubs. Many counties are offering these classes and are continually increasing the number of classes they offer. Subjects cover a wide range of interests including GIS/GPS, computer skills, gardening, aerospace, visual arts, theatre arts, sewing, food and nutrition, leather craft, cowboy poetry, survival, wildlife, livestock, model horse, roping, shooting sports, and child care. Many teens are involved in helping with Day Camps. Some youth are employed to assist with the program. This gives them workforce experience that they might not get otherwise. Some are volunteers and they learn teaching and organizational skills as well as how to work with younger youth.

Overnight 4-H Camp programs continue to reach many youth. One outstanding feature is the leadership development that teen camp counselors get as they are trained and then put that training to use in a camp setting. Teens are selected to be group or cabin leaders, teach classes, lead flag ceremonies and campfire activities. These teens in leadership positions give the younger youth aspirations to be leaders at camp in the future.

Junior Master Gardeners continues to grow in participation and in community support. Eighty three adults and two youth have been certified in the JMG program. Nearly 18,000 youth in Idaho have participated in one or more JMG educational activities.

The 4-H teen exchanges continue to be an important activity for 4-H youth in Minidoka County. This helps youth continue to be active in 4-H in their teen years

where they gain considerable leadership and organizational skills as they plan the exchanges. Fund raising is always a challenge but with it comes the additional skills of planning, communication and team work. Teens that stay involved in 4-H are natural mentors for younger members in their local clubs and county activities and good candidates for national trips and scholarships.

Thirty participants representing six counties attended the county fair volunteer and superintendent training in south central Idaho. Individuals represented county fair boards, FFA, fair superintendents and volunteers, 4-H leaders, parents and University Extension personnel. Respondents indicated topics covered met their needs and improved their knowledge about county fair volunteer roles and duties.

The Shooting Sports program in Idaho continues to gain popularity with frequent requests for training to certify more volunteer instructors. There are currently 189 certified instructors in the 4-H Shooting Sports program and last year they worked with more than 2,000 youth.

Livestock Day Camps continue to educate youth in southeastern Idaho. This year 451 youth and adults participated in the learning activities that addressed giving injections, ethics, feeding and nutrition, animal handling, fitting and showmanship and livestock knowledge. In pre- and post-testing, scores improved from an average of 20% to 72% for younger youth and from 25% to 85% for older youth.

(b) Expanding 4-H Youth Development Programs to Reach New Audiences. Gooding County 4-H after school reaches Hispanic kindergarten and elementary children more effectively because of two Hispanic assistants hired with funding from the Laura Moore Cunningham Foundation and the Idaho Community Foundation. Teachers of the students being tutored and mentored are enthusiastic about the help the students are receiving as some students have raised their grades from D's and F's to A's and B's. In one school district six tutored middle school students earned spots on the honor roll. In another district, an English as a Second Language coordinator noted that, through the tutor's efforts, several Hispanic students improved their ISAT scores significantly.

Coordinators from six counties reported new ideas were brought back to their county leader councils and fair board meetings. Coordinators have already seen benefits (30 days after the program).

(c) Funding sources for Youth Development and 4-H programs include State appropriations for Agricultural Research and Extension, Federal Smith-Lever funds, County appropriations, and grants from private and public sources.

(d) Idaho Youth Development and 4-H programs are conducted statewide. Specific activities are frequently conducted to address multi state issues and include multi state partners, such as 4-H Youth Conference – collaborative with Washington State University – and the Latino Cultural Arts CCS curriculum.

Key Theme- Workforce Preparation

(a) Spanish Language Dairy Workers Classes

According to the Department of Labor in Idaho, dairy workers that speak Spanish as their first language exceed 90% of the workforce in the major dairy counties, and the percentage is expected to continue increasing. The greatest challenge accompanying this increase in the number of Spanish-speaking workers has been the language barrier which is creating communication and training problems. University of Idaho Extension's Spanish Language programs are summarized below.

Milker School. In response to the identified need, a Spanish language Milker's School was delivered to approximately 150 dairy employees during the year 2005. The presentation was delivered on farms. The presentation was versatile and was tailored to fit the situation on each dairy. A certificate of completion was awarded to all participants at the conclusion of the program.

Calf School. Building on the well-attended Spanish-language milkers' schools, and in response to requests from the Cooperative Extension Dairy Advisory Boards and the Animal and Veterinary Science Department Advisory Board (composed of dairy producers and allied industry personnel), we developed a new course for Idaho's Hispanic dairy workers. The course was entitled "Raising Healthy Calves," and it was offered in Spanish in Caldwell, Twin Falls and Blackfoot and in English in Blackfoot.

The course focused on calving area cleanliness, physiology of birth, calving assistance, basic neonatal management, colostrum feeding, calf health, calf nutrition, and calf housing. The calf schools were a success with approximately 120 workers attending the program.

A proceedings handbook was prepared for the course and includes eight technical articles (English and Spanish versions). Power Point handouts were also included in the materials. The materials are currently being finalized and submitted for publication as Current Information Series Publications. The lack of information in Spanish regarding this topic has lead to national interest in this project with several Extension professionals and allied industry personnel requesting the information.

Spanish for Dairy Producers class. In an attempt to bridge the gap between the Hispanic workers and dairy managers that speak very little Spanish, UI Extension collaborated with the College of Southern Idaho to develop and deliver a series of five classes entitled "Spanish for Dairy Managers". Forty-five producers attended the class and plans are currently underway to offer a modified version to veterinarians in the Magic Valley.

Two additional Spanish language schools are being developed, one focuses on artificial insemination and the other on dairy employees who mix and deliver feed to cattle. The delivery of Spanish language programs provides 1) an educational opportunity for a traditionally underserved group, and 2) narrows the language and culture gap between English speaking dairy owners and Spanish speaking employees.

(b) A test covering various aspects of milking management was given to a sample of the participants at the beginning and end of the class. The table below shows the

overall mean scores for participants completing the pre-test and post-test and the results of the T-test. The test showed a 27.3 % improvement in knowledge (P < 0.01).

Number of students completing test	Pre-test score, %	Post-test score, %	Difference (Post-test – pre-test), %
43	55.3	82.6	27.3 (P<0.0001)

A follow-up on two dairies that sent their milkers to attend the course showed:

- improved knowledge of proper milking procedures and milk quality by Hispanic milkers
- Reduced incidence of sub-clinical and clinical mastitis
- Improved milk quality

(c) Funding for workforce preparation includes State appropriations for Agricultural Research and Extension, Federal Smith-Lever funding, appropriations for County Extension programs.

(d) Spanish language workforce development programs are developed for local populations across Idaho.

B. STAKEHOLDER INPUT PROCESS

The University of Idaho Cooperative Extension System conducted a statewide process to gather stakeholder input in 1999, immediately prior to the development of the current plan of work. That process invited and involved Idahoans from across all counties and interests to help determine the priorities of Cooperative Extension. Findings from that effort were used to identify specific customer needs and program expectations and were built into the plan of work as priorities.

In the period since that statewide effort, stakeholder input has been solicited and gathered in a variety of ways. Our state level advisory process has been modified to help focus input. Each academic department in the College of Agricultural and Life Sciences has formed discipline-based advisory councils, and receives input at least annually. In addition, Extension has formed, assembled, and led a statewide advisory council through a process to provide regular input on issues and needs, and on programs and delivery. These new or re-formatted groups add to the input collected at the County level, through their numerous and representative advisory groups.

At the local level, educators in every county maintain a variety of advisory councils including 4-H leaders' associations and expansion (diversity) committees, agricultural producer committees, community development committees and FCS advisory committees. These groups are assembled at least annually to provide input about programs, needs, and priorities.

UI Extension collects input from stakeholders through ongoing program contacts with interest groups, commodity and industry representatives, other organized groups, and service and agency providers. Extension participates in a large number of interest-based organizations, frequently holding elected or *ad hoc* leadership positions. At many organizational meetings, faculty learn about stakeholder needs and priorities through participation on program planning committees or through participation in the meetings and conferences. Faculty often schedule specific meetings with members of organizations to discuss existing and future programs and needs that interface the industry and the university. Faculty attend priority-setting meetings with commodity commissions, professional organizations, and industry or producer groups. Extension works with Federal and State agencies to share information about problems, programs, and priorities.

Formal needs assessments are conducted with interest groups and stakeholders, as well. In 2004 the Forestry Extension program administered a survey of more than 400 forest managers and owners who participated in the forestry shortcourse over the past eight years. A greater than 75% return of the instrument provides some very specific input for future educational programs in forestry extension.

A statewide needs assessment was also conducted during 2004. For that project, nearly 5,000 surveys were randomly mailed to Idaho households, and resulted in an overall 52% response rate. Data from that survey has been published and shared with UI Extension faculty, and is being considered during program planning activities. Data and interpretations from that survey will also be consulted for the

development of the next 5-year plan of work.

Stakeholder input is incorporated throughout the development of Extension programs; from problem identification through evaluation. Extension program and planning teams gather and summarize input from stakeholders that is used to determine program priorities.

C. PROGRAM REVIEW PROCESS

At the most basic level, all Extension faculty (and all other UI faculty) develop annual position descriptions that outline major programs for the year. These position descriptions are subject to annual merit review at a number of levels, beginning with division leaders and department heads and ending with associate deans and deans. Merit and program success of each faculty member is also thoroughly reviewed throughout the tenure and promotion process by a panel of faculty, at years 3, 5, 10, 15, 20, etc. Review panels charged with specific program responsibilities conduct further merit review. These review panels may include commodity interests, other academics, agency personnel and stakeholders.

UI Extension has adopted a “Topic Team” approach to program planning and delivery. Teams of faculty meet to discuss priorities, and agree upon which of those projects should be advanced. Topic Team procedures are monitored by College administration. Topic Teams prepare and submit competitive grant applications for state critical issues funding. Successful applications are those that demonstrate that the project meets a team-identified, peer-reviewed priority, and will result in measurable outcomes for stakeholders.

An increasing number of Extension programs are supported through grants and awards made by Federal, State, or local agencies, foundations, and businesses. It is particularly true for agencies, and increasingly true for private organizations, that the projects meet high standards for quality, relevance, and impact. The success of faculty to obtain increasing support from external sources is an important indicator of program quality and effectiveness.

D. EVALUATION OF THE SUCCESS OF MULTI AND JOINT ACTIVITIES

University of Idaho Extension is involved in multi-state and integrated activities as an integral part of our plan of work. Individual faculty have described and reported their involvement in multi-state projects as part of their annual reporting process. The cumulative total of investment in multi-state programming and multistate project titles are reported for 2005 (see section E).

All extension faculty report their activities in relation to twenty Topic Teams that form the framework for our planning and reporting process. Most Topic Teams are populated by faculty from both research and extension missions, and topic team projects are intended to be fully integrated. To estimate our investment in integrated

programs, however, we limit our calculations to the portion of extension funding invested in faculty with joint appointments in both University of Idaho Extension and the Idaho Agricultural Experiment Station. Our Topic Team priorities were originally identified and characterized following a statewide effort to generate stakeholder input, and are reviewed during annual Topic Team planning meetings. The cumulative total of investment planned in integrated activities is reported for 2005.

Idaho Extension realizes significant benefits from involvement in integrated and multi-state activities. A principal benefit is that faculty and staff develop new ideas, skills, and interests through collaborations, as they share, learn, and co-develop new applications, new models, and methods with colleagues across mission areas and States. New curricula, new concepts in teaching and learning, and new ideas about how to address stakeholder needs are cornerstone benefits from collaborative efforts.

Did the planned programs address the critical issues of strategic importance, including those addressed by stakeholders?

Our efforts during 2005 directed Idaho Extension resources toward issues of importance to stakeholders. Among the many programs described in "section A. Planned Programs" (above), multi-state examples can be found to address most of the 18 critical issues identified during the statewide stakeholder input process conducted to inform the development of our plan of work. Many of our multi-state and joint activities produce annual output consistent with the objectives of the project. For example, the annual cow-calf symposium results in a predictable, annual product; and many of our research and extension trials with neighboring States result in annual gains in knowledge. However, it would be premature to proclaim that our programs have achieved their goals. Many of our intended goals and outcomes have long-term implications.

Did the planned programs address the needs of under-served and under-represented populations of the state?

Primary under-served populations in Idaho have been identified as Latinos (more than doubled over the last fifteen years, to more than 9% of the population), American Indians (1%) and economically disadvantaged persons. Programs that addressed the needs of under-served audiences were both planned and not planned. Among those planned efforts with the greatest influence on under-served residents are EFNEP, ENP (Extension Nutrition Program), EIRP (Extension Indian Reservation Program), and 4-H. Over the past several years UI Extension has increased efforts to reach Spanish-speaking farm workers through a number of vehicles, including Spanish-language milking schools and Spanish-language pest management clinics, Spanish calving schools, and many individual Spanish-language classes taught as a part of other commodity school programs. New efforts have resulted in a Spanish Master Gardener "light" program. We have increased the number of Spanish-speaking staff, specifically to work with underserved

audiences. Our contacts with Latino audiences were approximately 8.9% of all face-to-face contacts in 2003, 8.6% in 2004, and 8.7% in 2005.

Notable accomplishments in 4-H include an increase in Latino 4-Hers from 1,737 in 2001 to 4,548 in 2005. This level of minority participation seems to be stable now, and represents a formidable accomplishment in a State whose minority population is less than 9% of the population total. New initiatives for 2005 that are helping achieve these targets include delivery of 4-H youth development into migrant farm worker camps, as well as several recent innovations including the 4-H technology partnership in Canyon and Owyhee counties and after-school and in-school enrichment programs. UI Extension also continued to grow membership in the special interest EFNEP/4-H clubs.

Much of our deliberate targeting of Native Americans is conducted through our two EIRP programs. Participation in Extension programs for the Shoshone-Bannock tribe has increased. Further, Extension has begun to deliver more of our regional (multi-county) programs in partnership with the Shoshone-Bannock program (such as the Shoshone-Bannock range school), bringing traditional audiences to visit the people and programs on the Fort Hall Indian Reservation. Our EIRP program on the Coeur d' Alene reservation has made significant progress over the past year to become integrated with Tribal programs and to work with the Tribe to address their important issues. Notably, Extension is working with the Indian Health Service on diabetes and nutrition programs targeting (primarily) youth. Extension continues to work with the Tribal government in areas of youth development, community development, and natural resources. Extension is responding to an increasing number of specific requests from the leadership and membership of the Coeur d' Alene tribe, and also the Nez Perce tribe.

Did the planned programs describe the expected outcomes and impacts?

Our annual report of accomplishments reveals some valuable information about program outcomes for many of our planned programs. However, we are still learning, and in transition, and there is variable quality in the measurement and description of our diverse programs. As UI Extension more fully adopts outcome-based programs, we will develop new approaches to accountability and implement new measurement of meaningful indicators. In most cases, multi-state activities describe outputs of collaboration rather than intended outcomes. Examples of such planned multi-state outputs include workshops, publications, conferences, databases and curricula.

Did the planned programs result in improved program effectiveness or efficiency?

UI Extension has lost approximately 22% of its professional workforce since 2002. Our Topic Team process, however, has allowed our faculty to deliver quality programs and to produce outcomes exceeding those measured in previous years. Our faculty continue to rely on external collaborations. We have increased our participation on multi-state projects as well as with in-state partners. These

collaborative efforts helped Idaho CES achieve efficiency and effectiveness, especially in the development of educational products. Multi-state collaborations allow diverse faculty to combine skills, talents and resources to develop tools useful to each collaborator and their in-state colleagues. A notable multi-state collaboration to deliver education about weight management brings expertise and materials into Idaho that would not be available otherwise. Idaho participation in the eXtension project promises similar efficiencies. These collaborations greatly increase the number of programs offered through UI Extension, and reduce per learner costs to a fraction of what any state could accomplish on its own. Our involvement with the PNW publications effort enables Idaho, Washington and Oregon to develop regional products that meet the needs of multiple states, eliminating inefficiencies associated with duplication and reducing the per unit cost of production

E. MULTISTATE AND INTEGRATED EXTENSION ACTIVITIES

Summary of multi-state activities:

UI Extension faculty are involved in scores of interstate activities on multiple levels. Formal collaborations include contracts and grants in which UI is represented as PI, co-PI, or collaborator, with faculty from other land-grant institutions. Faculty also participate in regional research and coordinating committees to address issues of multi-state importance, and in CSREES-led activities to help describe priorities and direct system resources toward those priorities. National efforts to which UI faculty contribute include development of curricula (e.g., through the CCS) and development of eXtension modules and resources. UI Extension faculty and staff are active contributors to national Extension professional organizations (including NAE4HA, NAEFCS, ANREP, NACDEP, NACAA, and ESP) and their regional sections, whose goals and activities address improved capacities and competencies for Extension professionals.

In the Western Region, UI commits significant resources to PNW publishing, a formal partnership with Oregon State and Washington State Universities to pool efforts and to conserve resources to make the best information available to Extension customers in each of the participating States. UI is represented on the Board of Directors for both the Western Rural Development Center and the Western Regional Aquaculture Center. UI Extension personnel contribute to the National and Western Extension Directors Associations, the Western Program Leadership Committee, the Western Extension Leadership Development program, and Western Middle Managers training program.

Programs within Goal 1—Competitive and Profitable Agriculture—make up the single largest group of activities in which UI faculty collaborate to address issues and problems important to the region and Nation. UI Extension is represented on numerous regional research committees and coordinating committees that are identified with Goal 1. Much of the collaboration in 2005 centered on projects related to crop pests. There is significant multi state involvement for pests in potatoes, but Idaho has important interests (and expertise) related to minor crops, as well. Variety trials conducted with Oregon, Washington, and Utah are important to Idaho and the region, as are dairy, beef, forages, and other Idaho investments in multi-state collaborations. UI Extension faculty participate to help train Washington State veterinary students, and provide services to farmers and ranchers residing in neighboring states.

Within Goal 1, faculty report significant multi-state investment for commercial and consumer horticulture, partly reflecting cross-training of Master Gardeners, and partly reflecting our inter-dependence to provide knowledge and education for the green industry. Idaho participates in COIN (California, Oregon, Idaho, and Nevada) to collaborate on issues important to ranchers and beef producers.

Goal 2 programs that have multi-state partnerships and collaborations include teaching sanitation to youth (through Germ City) and to adults and food service workers. Idaho collaborates on curriculum development for these programs and serves clientele from neighboring States.

Goal 3 programs with multi-state significance include the national and regional efforts to mount a major campaign against obesity. Idaho also contributes to National goal-setting

and evaluation for important programs including EFNEP and the Food Stamp Nutrition Education Program. Idaho helped initiate the Multi-state WIN in the Rockies project, and continues to use that model to provide health and exercise education.

Within Goal 4, many of our efforts with IPM are multi-state. Work with invasive species almost always involves partners from neighboring States (and is the focus of regional activity), as does work on various crop pests, pest detection networks, and pest alert networks. The Western IPM Center and similar infrastructure are integral to the work of our faculty.

Idaho participates as part of the Western Region Committees for Forestry Extension, Rangelands, and has formal arrangements and shared personnel with Washington State University as part of the STEEP project and the PNW water quality project. Our work with small acreages and sustainable farming education are closely coordinated with Washington.

Goal 5 programs with significant multi-state involvement include much of the youth development activity, through participation in the CCS project, national conferences, professional development, and youth leadership development opportunities. Our 4-H programs in Northern Idaho are part of a unique multi-state collaboration with Washington, as are many of our programs for agricultural entrepreneurs.

Idaho has contributed faculty talent and time to lead the eXtension program for financial security later in life. The same faculty have collaborated with other states to produce an ongoing stream of materials and programs for use in Idaho and across the country. Idaho contributed to the planning, funding, and delivery of the Great Basin Summit, with Nevada, Oregon, and Utah.

Summary of integrated activities:

University of Idaho Extension supports “Topic Teams” to develop issue-area work plans and accomplishment reports for the System. In order that UI College of Agricultural and Life Sciences programs and faculty are integrated across missions, the Topic Teams are populated by County Educators, (who nearly always have Extension-only appointments), Extension Specialists (who nearly always have joint appointments with Extension and the Idaho Agricultural Experiment Station), and Research Scientists (who normally have joint appointments with the Experiment Station and Academic Programs). Although research accomplishments are barely touched upon in this report, a vast majority of the report represents some level of integration between research and Extension. In most cases, Research faculty and Specialists are integrated with County Educators to identify and prioritize needs, Research faculty and Specialists (often with County Educators) conduct research, and Specialists and County Educators disseminate that information to users.

Specific outputs and outcomes resulting from integrated Topic Teams are reported in Key Themes throughout this report. Integrated Topic Teams reporting in 2005 include:

Goal 1:	Other Commercial Crops	Goal 3:	Human Health & Nutrition
	Beef		
	Dairy	Goal 4:	Forest Management
	Cereals		Range Management

	Forages		Nutrient Management
	Potatoes		Water Quality
	Small Farms and Emerging Specialty Crops		
	Commercial and Consumer Horticulture	Goal 5:	Farm and Ranch Management
	Sugarbeets		Family Development
			4-H and Youth Development
			Community Development
Goal 2:	Food Safety		Family Economics

To quantify UI Extension expenditures for integrated programs, we calculate the amount of Extension investment into the salaries of those specialists that have joint appointments with the Experiment Station. In 2005, there were 43 such employees, spread across all of the USDA Goal areas. These Specialists are housed in CALS Departments of Agricultural Economics and Rural Sociology; Animal and Veterinary Sciences; Biological and Agricultural Engineering; Food Science and Toxicology; Plant, Soils, and Entomological Sciences; and in the School of Family and Consumer Sciences. In the College of Natural Resources, Specialists with joint research-Extension appointments are housed in the Department of Forest Resources and the Department of Rangeland Resources. Not considered in our calculations are the operating budgets of Specialists or the salaries or operating for Extension/Research Associates and Scientists who support those integrated Specialists programs.

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U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities
(Attach Brief Summaries)
Fiscal Year: 2005

Select One: ☐ **Interim** X **Final**

Institution: **University of Idaho Extension**

State: **Idaho**

	Integrated Activities (Hatch)		Multistate Extension Activities (Smith-Lever)		Integrated Activities (Smith-Lever)	
Established Target %		%	25%	%	25%	%
This FY Allocation (from 1088)			2,746,542		2,746,542	
This FY Target Amount			$686,635		$686,635	
Title of Planned Program Activity						
Goal 1; Competitive agriculture			$243,069		$373,655	
Goal 2; Safe Food			$24,549		$45,399	
Goal 3; Health & Nutrition			$24,434		$27,127	
Goal 4; Natural Resources &			$136,471		$122,927	
Goal 5; Econ Oppor & Quality of			$210,139		$100,469	
Goal 6; Systems, Admin & Mgt.			$55,807		$27,885	
Total			$694,469		$697,462	
Carryover						

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.

_____ _____
Director **Date**