# Annual Report

# of

# Accomplishments & Results

# for

# Colorado's FY1999-FY2004 Plan of Work

**Colorado State University**
**Cooperative Extension**

*(Year-Four)*
*2002-2003*

# *Colorado State University Cooperative Extension: 2003 in Review*

The year 2003 in Colorado continued to be marked by state budget, public finance, drought, and human health challenges that caused both stress and creativity in Colorado State University Cooperative Extension (CSUCE). Colorado was among the states most affected by the national economic downturn because of its continuing high cost of living, dependence on technology-related industries, and high unemployment rate impacting jobs in the construction industry, communication industry, technology field, and travel and tourism sector.

As Director Milan Rewerts indicated in his annual letter, a major factor affecting Colorado Cooperative Extension in 2003 was the state economy. An 18 percent budget reduction was imposed by the Colorado Legislature on CSU, and in turn Cooperative Extension, which represented a total of $1.62 million dollars. This budget cut required CSUCE to implement significant staff and operating budget reductions while attempting to minimize the effect on programs with the greatest impact in communities and on programs addressing critical issues across the state. Cooperative Extension eliminated a total of 33 full-time equivalent positions through a combination of staff layoffs (23 filled positions were eliminated), reduction of a number of employees from full-time to part-time, and elimination of some positions that were vacant at the time of budget decisions. Position reductions or eliminations affected Cooperative Extension staffing in 26 counties across the state. Administrative and operating budget reductions also were made, along with reductions in faculty support dollars in five colleges on campus.

Even with these state budget reductions for Cooperative Extension now being implemented, CSUCE is looking forward and asking the question, “How might Cooperative Extension best be organized, structured and focused to serve the citizens of Colorado?” Futuring efforts for Cooperative Extension have been reviewing staff roles and relationships; technology, information management and access; organizational structure; diversification of funding; and marketing challenges for Cooperative Extension. These efforts will feed into the outreach portion of the Strategic Plan for the Division of Academic Affairs being led by CSU Provost Peter Nicholls.

Despite the difficulties in dealing with the budget cuts mentioned, CSUCE continues to demonstrate commitment to the citizens of Colorado. CSUCE has had great response in 2003 to its Webbased program, *AnswerLink*, which offers individuals access to a large database of routine questions and answers via the Internet. It includes an “ask the expert” component for Coloradans to ask questions and receive an email answer. Since its inception a year ago, there have been 222,000 hits on the site by people searching for online information, and 2,200 unique questions have been answered. Our staff in 59 county Extension offices also continue to be respected resources for their constituents--working with adults and 4-H youth, answering questions and providing information and educational seminars on current issues such as food safety and nutrition, animal health, drought, and water conservation. It is important for Cooperative Extension to provide support for priority programs throughout the state. At the same time, we continue to seek new resources and increase efforts to secure more outside funding including fees and extramural dollars.

Following is a summary of some of the major impacts CSUCE has had in FY04 organized by the Goals and Objectives in our original Five-Year Plan of Work.

# GOAL I: An agricultural system that is highly competitive in a global economy.

*The business environment that agricultural producers operate in today puts the responsibility to manage risk squarely on their shoulders--it truly is the producer's "freedom to farm or fail." Price and income support programs are no longer the centerpiece of U.S. farm policy. The 1996 Farm Bill put into motion a plan to move agriculture to a market orientation, which increases risk exposure for farmers and ranchers. In addition to traditional sources of agricultural risk, such as weather, insect and disease problems, and other production issues, farmers now face increasing risk from market forces of supply and demand. Agricultural producers must take a strategic approach to managing risk in order to achieve long-term success in their operations.*

*Risk management programs define five categories of risk: production, marketing, financal, legal and human. To survive in today's risk climate, agricultural operators must combine and manage all of their resources effectively. Colorado Cooperative Extension program outcomes have shown that agricultural producers who effectively manage their farm risk and increase their operational resiliency are consistently more profitable than average and are better able to preserve their farm's integrity and enhance the land's environmental sustainability. Colorado Cooperative Extension invests in applied research and education to assist producers in managing livestock and crops to improve management strategies, develop viable management alternatives, increase production, reduce pests and disease, and enhance the quality and competitiveness of Colorado's food and fiber industries. Extension education also helps communities and local producers develop markets and value-added products in order to maximize return on production efforts.*

## Year-Four Outcomes

- Farm income and risk management are major components of keeping a long-term agricultural enterprise functioning. Both large and small Colorado producers are taking steps to improve economic viability; 60% of producers manage risk by supplementing farm income with off-farm income. Cooperative Extension programs have provided education and assistance to help producers manage risk. Farms with more than $250,000 gross income are using more management tools to hedge risk—including grain storage, production revenue insurance, management education, price hedging, financing, personal equity, and e-commerce.

- Colorado State University Cooperative Extension staff from the state's northeast and southeast counties combined resources and expertise for a multi-discipline program titled "Positive Focus" to address issues created by the Eastern Plains' sharp economic decline. Extension staff in family and consumer sciences, agriculture, and 4-H youth development worked with financial institutions, government agencies, commodity groups, community colleges, faith agencies, mental health professionals, advisory committees and the media to design a program to help multi-generational rural families increase resilience under a stressful environment. Included were a media campaign, creation of a Web site, and seminars with invited speakers. Sessions held in three locations attracted 342 participants to topics on stress, communication and building family relationships. Participants reported they learned skills to help deal with conflict and decision making, and improved ability to cope with stress. Evaluation of Extension educational programs for area producers showed that 72% enhanced profitability through development of risk management tools and 56% increased knowledge about integrating production practices with environmentally sound decision-making.

- A comprehensive curriculum—"Risk and Resilience in Agriculture"—created by Cooperative Extension specialists from Colorado, Montana and Wyoming, was designed to help agricultural families make a living in an increased risk environment. In northeastern Colorado, a concerted multi-year educational effort was undertaken to assist dryland agricultural producers through the "Risk and Resilience" program. Emphasis on a dynamic systems approach to production, grazing management, and integrating livestock and crop enterprises included creative ideas such as niche markets, specialty crops, on-farm recreation and direct marketing. Research from early adopters showed that a traditional dryland rotation could be replaced with a more profitable two-crop-in-three-years system that increased grain production by 75% with a corresponding increase in net-farm income of 25 to 40% while providing weed, soil and crop disease benefits.

- Today's farms are too complex for operators to manage finances in their heads. Farm managers must work closely with knowledgeable lenders to ensure the farm maintains positive cash flow, a sound financial base, provides for family-living costs, and allows for future growth. To assist in this task, Cooperative Extension agricultural and business management specialists conduct annual educational sessions for lenders, insurance agents, commodity brokers, and others. Last year, 52 participants from South Dakota, Nebraska, Wyoming, Kansas and Colorado heard presentations on drought, crop insurance, legislation and risk management, and all reported increased knowledge on one or more of these topics. To help producers learn about the risk-bearing capacity of their operations, Colorado Extension staff received a grant to create "Right Risk," a simulation designed to enhance alternative decision-making and risk management education. Of 857 agricultural producers and land managers reached last year through Extension programs, 80% reported enhanced profitability through development of risk management tools and/or use of business plans that considered integrated resource management techniques.

- Colorado and Nebraska farmers and ranchers who attended a "Human Side of Farming" Conference were introduced to ideas for land preservation, alternative crop and livestock enterprises, new marketing strategies for traditional crops, and ways to bring youth back into agriculture; 77% reported knowledge increases and 75% planned to use the ideas in their operations.

- Adoption of risk management practices requires a visible and profitable outcome. Crop insurance is often perceived as a one-way expense with little or no return. In Logan County, maintaining the National Agricultural Statistical Service (NASS) Crop reporting effort proved to be an encouraging action. The reporting of weekly crop conditions was enhanced for pasture and other uninsured crops, primarily hay millet. Cooperative Extension and NRCS staff provided an analysis of pasture or rangeland conditions that resulted in better payouts for the insurance program. Favorable results that were nearly double the assumed and customary payout influenced producers to increase their participation in the program. Consistent reporting of crop and range conditions supported the improved payout. The drought proved that common and ordinary tasks can have great value. For Logan County, the NASS Crop Condition report provided extra income of $772,367 for livestock producers under the LCP Emergency Feed Voucher program. This income was available as vouchers to purchase special emergency feed stuffs, based on a dry milk formula that aided the US government in reducing stored, dry milk supplies.

# GOAL II: A safe and secure food and fiber system.

*According to the Healthy People 2000 Initiative, foodborne illness in the United States is a major economic burden and cause of human suffering and death. While foodborne illnesses are often temporary, they can also result in more serious illnesses requiring hospitalization, or in long-term disability and death. The Centers for Disease Control and Prevention estimates that one in four Americans become infected with some form of foodborne illness each year, and that annually*

*foodborne contaminants cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the U.S. These estimates make the assumption that because most cases of foodborne illness are mild and/or short-lived and are difficult to trace back to a particular food, only 1% to 5% of actual cases are reported each year and even fewer are investigated.*

*The hazard of foodborne illness originating from mishandled food is an issue in any location where food is available to consumers. It is especially important when problem food is served to people with the highest risk--including pregnant women, young children, the elderly, and people with chronic disease and HIV. Food poisoning is usually a preventable disease and in most instances can be avoided simply by applying well-established hygienic standards in the production, preparation, holding and serving of food. Effective food safety education must increase knowledge as well as raise consumer awareness about food safety risks—then motivate consumers to change their food-related behaviors—primarily hand washing, adequate cooking of food, avoiding cross-contamination, and washing fresh fruits and vegetables to reduce microbial risks.*

## Year-Four Outcomes

- Colorado State University Cooperative Extension offers food safety education through ServSafe™, a certification program developed by the National Restaurant Association. Eight training teams who serve twenty Colorado counties have trained 1,157 restaurant managers/owners and food handlers from nursing homes, grocery stores, jails and prisons, catering businesses, Elks lodges and senior meal sites. ServSafe training teams are typically responsible for a class of 30 food handlers, who in turn can be responsible for serving or preparing as many as 7,000 to 10,000 meals per day in restaurants, food establishments, nursing homes, senior centers, day care homes, jails, prisons and catering businesses. Documented changes in food safety behavior showed 84% to 95% planned to adopt at least one or more recommended food handling practices, and knowledge increased 30%.

- In Larimer County, CO, the local health department has estimated health care costs per hospitalized foodborne illness case at between $7,000 and $23,000. Last year, 33 Master Food Preservers in Larimer County fielded 861 consumer questions related to food safety and food preservation; with a conservative estimate, these volunteers could have saved more than $600,000 in health care costs by preventing just 10% of potential foodborne illnesses.

- Following a suspected link between two cases of E. coli 01557:H7 infection in children who consumed watermelon with unwashed rinds at a local Farmers' Market, the Larimer County Department of Health & Environment immediately required vendors to stop providing free food samples. Cooperative Extension in collaboration with county health officials provided training for more than 200 farmers, market managers, vendors and health department officials; 90% increased their knowledge of good agricultural practices and safe produce sampling guidelines; 83% said they planned to make changes in food-handling procedures, including installation of hand-washing stations, sanitizing knives and cutting boards, and pre-washing produce prior to market. A six-month follow-up with growers and vendors indicated that most made the recommended changes or chose not to offer samples at farmers' markets.

- A survey of restaurant managers in Colorado, Wyoming and Montana found a strong preference for hiring workers with training in safe food-handling procedures; the majority of managers also indicated a willingness to pay for training, and reward trained employees with higher starting salaries, increased wages and promotions.

- Of 1,210 participants in Colorado food safety programs, 60% adopted or strengthened at least one new behavior as a result of the program to improve their understanding of food-related risks and the scientific bases for risk management decisions.

- Of 12,408 participants contacted through individual consultations, 84% increased knowledge about foodborne illness risks through safe food production, handling, preparation and consumption practices; 34% adopted the food-safety recommendation as a result of the educational contact.

- Of 486,992 participants in Colorado food safety educational program activities, 54% increased knowledge about foodborne illness risks through safe food production, handling, preparation and consumption practices; 54% planned to adopt or strengthen at least one new behavior as a result of the food safety programs; and 18% actually adopted or strengthened one new behavior as a result of the educational programs.

# GOAL III: A healthy, well-nourished population.

*One of the most disturbing aspects of life in a wealthy country like America is the persistence of hunger, the recurrent and involuntary lack of access to sufficient food due to poverty or constrained resources, which can lead to malnutrition over time. While starvation seldom occurs in this country, children and adults do go hungry and chronic under-nutrition does occur when financial resources are limited. Many established food programs help provide a safety net for many low-income families, but the mental and physical changes that accompany inadequate food intake can have harmful effects on learning, development, productivity, physical and psychological health, and family life.*

*A 2002 U.S. Census Bureau survey revealed that 11.1% of U.S. households were "food insecure," or lacking resources to access enough food to fully meet basic needs. Food insecurity occurs whenever the availability of nutritionally adequate and safe foods is limited or uncertain. In 2002, 12 million U.S. households (more than 35 million individuals) reported limited access to sufficient food because of inadequate resources; of these, nearly 3.3 million experienced hunger. In Colorado, 146,000 households (436,000 people including 182,000 children) were food insecure; of these, 42,000 experienced hunger.*

*Adults in food-insecure households often run out of food, or reduce the quality of food their family eats, or feed their children unbalanced diets, or skip meals so their children can eat, in order to adjust to the economic problems that threaten the adequacy of their family's diet. The survey showed that those at greatest risk of being hungry or on the edge of hunger live in households that are headed by a single woman, are Hispanic or Black and have incomes below the poverty line. Also, households with children experience food insecurity at more than double the rate for households without children. "Food security"--a term used to describe assured access at all times to enough food for an active healthy life, is the most basic of human needs.*

*Colorado State University Cooperative Extension educational programs help Coloradans improve their food-resource-management skills by stretching food dollars and making healthful food choices, increase food security, and improve overall health of the state's limited-resource populations. Administered by Cooperative Extension and funded by the U.S. Department of Agriculture through the Colorado Department of Human Services Food Stamp Program, the Colorado Food Stamp Nutrition Education Program (FSNEP) primarily addresses the problem of food insecurity among limited-resource Coloradans who receive food stamps. The Colorado FSNEP Program is committed to providing at-risk audiences such as children, the elderly, immigrants, emergency food assistance participants and welfare recipients with nutrition, food safety and food-resource-management education aimed at promoting food security and overall health. Each year, the program reaches more than 6,000 adults & seniors through classes, demonstrations & other methods, and 17,000 children through child care & school programs. Hunger relief advocates say the best assistance is helping people help themselves. Colorado Cooperative Extension's Food and Nutrition Education Program (EFNEP), funded for 34 years by the U.S. Department of Agriculture, is designed to teach limited-*

*resource families with young children how to make healthy food choices, stretch their food resources, and use safe food-handling practices.*

## Year-Four Outcomes

- A national cost-benefit analysis of the Extension Food and Nutrition Education Program proved it produced substantial economic impacts. Behaviors taught and measured in Colorado EFNEP programs including decreased intake of sodium and fat, reduced weight, increased intake of fiber, fruits & vegetables and improved physical activity and other behaviors could contribute a yearly $30,000 savings per person if heart disease was avoided, $28,000 per patient if diet-related cancer was avoided, and $22,000 if stroke was avoided.

- Across the country, for every $1 invested in Extension Food and Nutrition Education Programs, from $8-$10 in benefits from reduced health-care costs can be expected. A Colorado State University FSNEP cost-benefit study showed an average return of $7.06 for every federal dollar invested in teaching nutrition and resource management to those who receive and are eligible for food stamps. The USDA Economic Research Service says that increasing the food stamp participation rate helps local economies as well as recipients; each $5 in federally-funded benefits generates approximately $10 in economic activity.

- The Adult FSNEP program has been shown to improve the nutritional well-being of low-income Coloradans and to increase their ability to manage food resources--88% of adult FSNEP graduates reported a positive change in their eating habits and improvement in nutrition practices; 77% showed improvement in one or more food-resource-management practices (planning meals, not running out of food, using a shopping list, etc.); also 64% showed improvement in food safety practices.

- 10% of all Americans or 26.9 million people receive food stamps; 60% are children or elderly. The average length of food stamp usage is two years, and half of new recipients use them six months or less. In 2002 in Colorado (last available data), federal funding for food stamps contributed $165,442,169 to the state's economy.

- National EFNEP data reveal impressive improvements in food-related behaviors from the almost 100,000 participants. Colorado EFNEP data show similar results for statewide "graduates" of the program--83% improved one or more food-resource-management practices; 87% improved one or more nutrition practices; and 67% improved one or more food safety practices.

- One of the many consequences of poverty is the lack of money for food. Learning "food resource management" is key to stretching food dollars and making healthful food choices. As a result of what they learned in the programs, Colorado FSNEP participants reported an average savings of $75.64 on monthly food bills; EFNEP graduates reported an average savings of $52.80 per month on food bills.

# GOAL IV: Greater harmony between agriculture and the environment.

### *Range and Grasslands*

*The nation's forage, range, pasture and grassland resources, covering about 55% of the land area in the United States, make a vital contribution to the nation's environment and to its economy. Most important are the irreplaceable benefits provided to the public—food and fiber, wildlife habitats, aesthetically pleasing landscapes, and environmental protection for soil, water and air. Grasslands play an important role in environmental quality by providing biodiversity of plant and animal*

*populations, wildlife habitat and green space around expanding urban and suburban areas; they reduce soil erosion and prevent stream and groundwater contamination. Forages and grasslands are a foundation for sustainable agriculture by serving as an economic and environmental safety net. Rangeland contributes directly to the economic, social and environmental sustainability of rural America. Livestock producers and small-acreage landowners who make use of pastures and grazing realize direct economic benefits for themselves and their communities. Nationally, the forage-livestock industry contributes more than $60 billion in farm sales annually, and the $11 billion hay crop is the third most valuable U.S. crop after corn and soybeans. In Colorado, hay is the leading crop in value of production.*

*Almost 75% of the nation's wildlife live on private land, most of which is open-space rangeland and grassland on farms and ranches. These highly diverse lands, extending from eastern pastures and hay fields to western prairies and deserts, provide habitats for a multitude of plant and animal life, including 20 million deer, 500,000 pronghorn antelope, 400,000 elk, wild horses, and a number of endangered species. Songbirds, pheasants, and countless smaller animals thrive in these habitats. Because of the vastness and diversity of range, pasture, and forage lands, they also play a vital role in providing open space, air and water quality, and a variety of recreational opportunities.*

*In the last decade, government programs and land-grant university research and education have helped America's agricultural producers make remarkable improvements in soil and land conservation. Adoption of effective conservation practices including conservation tillage, terracing and contour farming cut soil erosion by nearly one-third. Colorado State University Cooperative Extension scientists and educators continue to work with landowners and producers to provide education for best management practices and land stewardship for forage and grassland resources. Extension education is designed to strengthen the management, productivity and health of the state's forage, range and grassland resources; sustain grassland systems that add to and enhance the state's diverse natural resources; and teach best management practices that contribute to well-managed grazing lands. Cooperative Extension works to reinforce two of the most important benefits of grasslands--the control of soil erosion and the preservation of water quality.*

## Year-Four Outcomes

- Productive rangelands are a key component of healthy watersheds and economic sustainability of western agriculture. Forage and grassland resources are the foundation of the U.S. forage-livestock industry with its 60 million beef and dairy cattle and 8 million sheep that contribute more than $60 billion in farm sales annually. Range livestock production represents almost one half of Colorado's total agricultural receipts. The predominant land use in the state's Southeast Region is for range livestock, especially cow-calf operations, which are dominated by season- or year-long use of pastures. Even at relatively conservative stocking rates, this practice often leads to over-use of plants in preferred areas, and over time, to deterioration in forage quality and quantity. Cooperative Extension provides education to help producers understand forage issues, supplemental water requirements, soil fertility, nutrient availability, business management and how to make fullest use of resources at their disposal.

- Producers in western Colorado, like in many parts of the West, have experienced conflict over livestock grazing on public lands. In Colorado's Tri-River Area, Cooperative Extension, the U.S. Forest Service, Bureau of Land Management, Natural Resources Conservation Service and ranchers designed a "Range Management School" to address this conflict. The primary objective of the School is to help grazing permit holders evaluate forage and changing range conditions while improving communication between federal land managers and ranchers. Of the more than 2,000 permitees, federal land managers, environmentalists and private range owners who have attended the schools since 1995, 86% reported increased knowledge about how to integrate production practices with

environmentally sound decision-making; 65% reported reduced production costs due to improved or more efficient management practices. The School has directly impacted improved grazing management on over 4 million acres of public land.

- In fast-growing Larimer County, public open-space managers, homeowners associations and small-acreage residents have joined farmers as land stewards, and many want to return the land to native habitat. Cooperative Extension with the Natural Resources Conservation Service, presented a five-day short course titled "Shifting the Picture: Prairie Improvement and Re-vegetation" to assist land managers in answering questions about replanting land areas, managing plant communities and selecting appropriate native species. Two dozen participants experienced hands-on studies at project sites performing resource inventories and developing re-vegetation plans; all reported an increase in knowledge about enhancing the quality of the natural resources on their land.

- For three years, Cooperative Extension in Routt County had received increased requests for help to control an expanding grasshopper infestation doing damage to area rangelands. The Extension agent researched control methods and provided information on best treatment options to agricultural producers, landowners and residents, and after 700 phone calls in one summer, coordinated treatment of 30,000 acres of land using a method developed by the University of Wyoming called Reduced Area & Agent Treatment System--RAATS. This method used less pesticide, achieved 85% to 90% control, and saved landowners $70,000 over conventional control methods.

## *Water Resources & Drought*

*The western states are settling the country's fastest growing populations into its most arid environments. Competing users see the need to optimize use, protect quality and conserve water--a valuable resource shared by all. All new water supplies in Colorado, a headwater state, result from precipitation in the form of rain, hail and snow. Annual precipitation varies considerably in Colorado—from seven inches in the San Luis Valley to more than 25 inches in the mountains. Most of the state is heavily dependent on annual snowmelt and runoff from the mountains to the eastern plains where a majority of the water is used. Colorado on average has 15,600,000 acre-feet of surface water runoff, consumptively uses approximately 6,000,000 acre-feet, and delivers the remaining water to downstream states, primarily those in the southwestern United States.*

*Through creative and diligent management, Colorado provides water to a large agricultural industry, a number of growing urban population centers, and other states as governed by interstate compacts. In addition, Colorado has been able to provide water for environmental uses, snow making, and recreation. Despite the relatively large volume of water that originates in the state, drought and limited supply conditions are very much a part of Colorado's history--and its future. Water quality also is a high-priority issue. As population growth continues, demands on finite water supplies and the risk of adverse impacts on the quality of those resources steadily increase. Approximately 80% of the state's available water supply falls on the western side of the Continental Divide while 80% of the human population lives on the eastern side. Colorado's municipal and industrial water use is projected to increase from one million acre-feet in 1998 to 2.7 million acre-feet by 2100. Increasing population growth combined with increased demand for water for recreation, scenic value, fish & wildlife habitat, and production of food & fiber from western farms and ranches will drive major conflicts between competing uses of water in the West.*

*Colorado State University Cooperative Extension provides educational programs on drought, water conservation, and water-quality issues. Extension education helps Coloradans practice water conservation techniques; increase knowledge and skills required to live with finite water supplies; learn to maximize and sustain water quality in homes, gardens, farms and communities; and benefit from research that addresses water-quality issues.*

## Year-Four Outcomes

- Extension specialists cooperated with State NRCS personnel to produce a water conservation technical guide for the High Plains aquifer, High Plains Irrigation Practices Guide – Water Saving Options for Irrigators in Eastern Colorado, which will guide NRCS as they work with growers on approximately 500,000 acres of irrigated land pumping from the High Plains (Ogallala) Aquifer.

- Colorado State University research and Extension education, focused on finding and demonstrating new irrigation practices and technology, has helped stem the salty tide of Colorado's Arkansas River, one of the most saline rivers for its size in the United States. An estimated 75% to 85% of the salt comes from rainwater flowing overland and down to the river, which then becomes concentrated on irrigated land. Reduced tillage procedures, increased use of surge irrigation and soil-stabilizing polymers has reduced erosion, enhanced water absorption and helped farmers cut costs through more efficient irrigation and reduced salty drainage to the river and groundwater basin. Overall cost savings and productivity increases to producers have amounted to $1.6 million over the last seven years.

- Colorado's dominant water-quality concerns include municipal and industrial discharges, urban and agricultural runoff, mining and abandoned mines, and modification of streams, wetlands and canals. Colorado State University Cooperative Extension personnel conduct research and educational programs to address impairments in both surface and ground-water resources. Since the early '90s Colorado Cooperative Extension has been an integral part of the Agricultural Chemicals and Groundwater Protection Program. Working with the Colorado Departments of Agriculture and Public Health and Environment, Cooperative Extension has developed and promoted Best Management Practices for agricultural chemicals use to prevent contamination of ground water resources. Programs focused on Best Management Practices (BMPs) help agricultural producers use precise irrigation and fertilization techniques to use water more efficiently, save money and protect the water supply; more than 60% of growers surveyed reported using soil-test analysis to determine fertilizer rate; 54% who applied pesticides used BMPs such as field scouting and crop rotation.

- Ground water monitoring data suggests that BMP education and promotion is paying off. In over 1,000 wells sampled since 1992, only 4 detections (0.4 % of wells sampled) of any pesticide above a drinking water standard have been found. The majority (>2/3) of wells did not have any pesticide detection. Since there are more than 200,000 wells providing domestic water to Colorado residents, this is good news. In areas of the state where contamination from agricultural chemicals is more prevalent trend analysis of several years of sampling the same wells has shown atrazine concentrations to be decreasing and nitrate concentrations to be stable. This area has received significant outreach efforts from CSUCE.

- Cooperative Extension, cooperating with the Colorado Climate Center, improved the usability of crop water-use reports using evapotranspiration estimates provided by the CoAgMet weather network; users have the ability to choose specific crops, weather stations and planting dates to customize their reports. ET rates help growers reduce irrigation pumping and conserve water and are also used to help homeowners improve lawn-watering practices.

- Of 800 participants in Cooperative Extension workshops designed to help producers understand the complex legal issues of ground-water pumping and surface-water augmentation requirements in the

South Platte River Basin, 83% increased knowledge about irrigation alternatives to fit their operations, 29% said they would use crop rotation and reduced tillage systems to raise farm profitability and sustainability, 15% indicated they were able to net excellent yields and profits from their irrigated crops as a result.

- In rapidly growing urban areas, Cooperative Extension programs help consumers reduce water consumption and minimize pollution in homes and gardens; an updated water-resources Web site provides them direct access to publications, information on water-use during drought and updates of municipal watering restrictions.

- Cooperative Extension, in collaboration with local conservation districts, continues to study and manage selenium and salinity impacts from approximately 80,000 acres under irrigation in western Colorado. Through these efforts, local growers have taken the lead in handling regulatory pressures due to endangered fish in the Colorado River Basin.

- Cooperative Extension coordinates a six-state regional water-quality program funded by an annual U.S. Department of Agriculture grant of $650,000. This regional program provides for a sharing of water-quality expertise among the participating states that strengthens Cooperative Extension's ability to address Colorado water concerns.

- In rapidly growing urban areas, Cooperative Extension education programs help users reduce water consumption, conserve water and minimize pollution. A water resources page was added to the CSUCE web system providing direct access to recent publications, links to information on water-use during drought (http://drought.colostate.edu/), and other water related web sites. From this site, an update of municipal watering restrictions was maintained throughout the 2003 growing season.

- The Colorado State University water quality interpretation tool was created specifically to help Colorado citizens evaluate the quality of their water for drinking, irrigation or livestock use. Users simply enter their water quality parameters into an online form and click on the intended use of the water to obtain the appropriate interpretation of the quality of their water and suggested treatment measures. The tool is accessible through the CSUCE Water Quality Web page.

- Colorado State University Cooperative Extension redirected significant human and limited financial resources in response to the information and educational needs of Colorado citizens during the drought period of the last several years. An Extension Drought Response Team was created to support Cooperative Extension field staff efforts dealing with drought, and to enhance communication and coordination within CSU and with partner agencies. Strategic planning resulted in identification of outreach priorities and objectives. Monthly teleconference calls on drought conditions and program updates were held during the last year and a half, and are continuing to be held to provide updates to staff and coordinate program efforts. CSU Cooperative Extension faculty serve on the Governor’s Water Availability Task Force to enhance interagency coordination.

- Cooperative Extension faculty consolidated research papers, fact sheets, and white papers into a drought resource guide for producers. This information was provided to livestock owners, ranchers and farmers operating in drought stricken areas. Additionally, research results and publications on topics such as grazing of Conservation Reserve Program lands were used by Extension educators and livestock producers.

- Extension faculty talked with the managers of green houses, municipal water boards, owners of sod farms and small acreages, home builders and owner associations, and others about xeriscaping, irrigation systems, proper settings of sprinklers, water conservation methods, etc. They worked with producer groups, irrigation companies and water user associations to determine best management practices in irrigating crop and selecting specific crops during times of little or no water availability.

Additionally, they responded to the requests for information from elected officials and other policy makers.

- The mental health of farmers and ranchers and their families was an important consideration and topic of discussion in educational meetings and individual consultations. Cooperative Extension's human development and family studies specialist talked with people and provided research-based information to strengthen the social well-being of adults and families across the state. Fact sheets and presentations were made available in the areas of communications, problem solving, anger/conflict management, strengthening relationships, and resiliency.

- Internet communications, spreadsheets and decision-making tools were developed to help irrigated crop producers, crop insurance adjusters and cow-calf owners to analyze options and financial impacts of various alternatives. Tools helped determine how many acres irrigation systems could adequately cover and how many acres needed to be abandoned. A Web site provided information about the drought. A "hay list" was used by producers to locate available hay or to give notice of hay for sale. Some county extension faculty facilitated the use of the hay list and located other sources of and transportation for supplemental feed.

- CSU Cooperative Extension worked with campus faculty on a university Drought Lab proposal and concepts to provide an outreach component to that effort. Regional and state Extension specialists served as Co-PIs on proposals to ensure that work was relevant to Colorado water managers and producers.

- The media was an excellent vehicle for disseminating information, telling people how to obtain desired various resources, and providing people around the country with current and factual information. Extension worked with print media, TV and radio in cooperation with the CSU Public Relations Department. Extension specialists gave numerous interviews to Colorado newspapers, radio stations and television stations. They talked with reporters from CNN, USA Today, NPR, The Leher News Hour, The New York Times, Farm Journal, and stations in Des Moines, Minneapolis, Chicago and many in Colorado.

- A youth and adult education program called "Fire and Water –You + 2" was launched with the objective of conducting audits of water uses in and outside of homes and fire safety around homes. Extension agents, school teachers and volunteer leaders helped clubs and schools use the checklists and related materials that were provided in an educator's guide, Internet sites and in conjunction with existing environmental education programs. Extension networked with the Colorado State Forest Service, Colorado Division of Wildlife, Colorado Agricultural Foundation and water providers to reach the goal of helping youth and adults understand their "sense of place" in an arid environment, use educational tools, work together as stewards of the environment and promote sound land-use decisions.

- The drought forced Colorado Springs Utilities and other El Paso County water suppliers to implement watering restrictions for commercial and residential water customers, with restrictions estimated to be in effect through 2008. By providing research-based information to city & county elected officials, Cooperative Extension helped structure restrictions that conserve water but minimize impact to planted landscapes. For example, the City of Manitou Springs voted to allow limited winter watering of landscape plantings specifically to preserve health and vigor of historic and significant trees and shrubs and decrease growing-season water usage. The Colorado Springs City Council watering ordinances included soil preparation requirements for all new sod and seeding projects that dramatically increased water efficiency for new landscapes.

- Rural landowners who own forest acreages have benefited from collaborative efforts among Cooperative Extension, the Colorado State Forest Service, Colorado Division of Wildlife, the Natural Resources Conservation Service and others. For the past several years, this group has offered in-depth

workshops to address the challenges of maintaining forest health, timber management and fire prevention on private land. A survey of participants showed that 100% increased their understanding of the challenges of rural living and 70% increased their knowledge about natural resource and forest management, including pest control and tree thinning practices.

# GOAL V: Enhanced economic opportunity and quality of life for Americans.

### *Child-Care Programs*

*Dramatic changes are occurring in the way families work and live, the environments in which youth learn and develop, methods of parenting and the financial security of families and communities. Decades ago, most children had seven hours a day to interact with parents and friends--they walked to school, ate lunch at home, and had the afternoon to learn and play. In today's society, with changing family structures and more demands placed on working parents, time with children is greatly diminished. Children are whisked away to childcare centers or before-school programs as early as 6 a.m., to after-school programs at the end of the school day, then returned home at 6 p.m. to eat, watch TV or do homework and go to bed. At best, they might have two hours per day to interact with parents, siblings and their community. At worst, some children are left on their own or in unsafe conditions.*

*Educating, nurturing, guiding and caring for our nation's children are increasingly becoming the responsibility of a broad array of childcare providers in an equally broad array of settings. Over the course of their developmental years, most children will spend more time in childcare than they will in formal education. Every day in America 14 million infants and preschoolers are left in childcare arrangements, 24 million school-age youth are in need of programs, and an estimated 5 million are without any adult supervision. According to the Census Bureau, there are 36.7 million children in the U.S. between the ages of 5 and 14, of which 24 million are likely to need care because they live in family structures where parents are working, going to school, or seeking employment; 75% of children under age 5, or 14.4 million infant and preschool children are in some form of childcare arrangement.*

*Participation in high-quality early childhood care and education programs can have positive effects on children's cognitive, language, and social development, particularly among children at risk. A national study by the University of Colorado-Denver, Economics Department, found that children in quality childcare programs had better language, mathematics and social skills and better relationships with teachers than those in lower-quality classrooms; quality care also had a greater impact on at-risk children's school readiness and self-perception. Studies from the High-Scope Educational Research Foundation have shown that investments in quality preschool programs save $7 for every $1 spent, by increasing the likelihood that children would be literate, employed, and enrolled in post-secondary education, and making them less likely to be school dropouts, dependent on welfare, or arrested for criminal activity or delinquency. The 7:1 cost-benefit ratio also reflects savings in the criminal justice system, reduced welfare costs and higher taxes paid from better paying jobs. Research confirms a strong and consistent link between the training received by childcare providers and the quality of care they provide. High-quality childcare helps children enter school ready to succeed in a number of ways, and has a particularly strong impact on low-income children who tend to be at greater risk for school failure.*

*Cooperative Extension with its reach into communities has a unique advantage in addressing childcare issues—staff have the ability to reach isolated rural and metropolitan areas, unregulated childcare providers and those with limited access to formal educational programs, diverse ethnic populations, migrant workers, populations needing childcare during non-traditional hours, limited-resource families, and children with special needs. Last year Colorado Cooperative Extension made*

*nearly 4,000 educational contacts with current and potential Colorado childcare providers improving their knowledge and skills through training and consultations.*

*Cooperative Extension education is improving the quality of Colorado childcare programs by training childcare providers, disseminating developmentally appropriate curriculum, and working with communities and other agencies to establish and expand childcare programs and make childcare safe and reliable for families. Extension education is helping Coloradans increase their knowledge about the social, educational and physical needs of children; recognize the importance of early child development on the long-term growth and development of youth; and improve childcare quality through research-based education and best practices for provider training, parent involvement and community support.*

## Year-Four Outcomes

- The Childcare Referral Network operated by Cooperative Extension in the Tri-River Area last year answered 771 technical assistance calls from child-care providers, provided information to more than 700 individuals interested in entering the childcare business, made educational contacts with 2,948 providers, and conducted 20 site visits to childcare facilities as part of their outreach effort; 72% of those surveyed said they found training opportunities through Extension resources.

- In Routt County, a partnership with the local Consolidated Childcare Pilot, has increased capacity of childcare providers to deliver quality programming through monthly meetings where they receive training, discuss challenges and work to create a collaborative service delivery system.

- Cooperative Extension in Gunnison County provided in-depth workshops for childcare professionals focused on infant-toddler brain development and the Colorado Department of Education's "Building Blocks for Reading and Math." A countywide Childcare Provider Appreciation Day gave local parents an opportunity to learn how to choose quality care and about the value of licensed providers. Gunnison County Cooperative Extension hosted the annual Western Colorado Early Childhood Conference, a local collaboration committed to assisting preschool and K-3 teachers, and home and center childcare providers to improve early childhood education. The 219 statewide participants received continuing education credits and increased knowledge by 20-60% about child literacy, brain development, nutrition, health, behavior, curriculum development and best business practices.

- In Pueblo County, a series of workshops using the "Better Kid Care" curricula was provided to 156 childcare providers who needed certification hours to maintain licensed homes and centers; 60% said they would immediately put the information to use to improve their daycare operations; 90% reported increased knowledge about nurturing and caring for children and child development; they also reported increased confidence in their abilities to provide competent childcare.

- Foster parents and grandparents are target audiences for Extension parenting and childcare education efforts such as "The Second Time Around: Grandparents Raising Grandchildren," which provides support and bilingual assistance to seniors who find themselves raising their childrens' children due to abuse, neglect, parent incarceration, substance abuse, death, financial hardship, or mental health issues. In Weld County, a collaboration between the Colorado Department of Human Services' Alcohol & Drug Abuse Division, the Area Agency on Aging, Catholic Charities, Extension's Partners in Parenting Program and the local Extension office provided technical assistance and train-the-trainer sessions for the "Kinship Care" program. In subsequent sessions for grandparents, participants expressed appreciation for the support, increased knowledge of resources, and improved confidence in their abilities to nurture and care for themselves and their grandchildren. Another Weld County program, "Promoting Safe and Stable Families," attracted 84 participants who learned communication and discipline, and resulted in licensing 15 new foster parents.

- Cooperative Extension offered 12 hours of pre-licensing training for daycare providers in home and center settings in the under-served counties of Bent, Crowley and Otero as a joint effort with the Tri-County Family Care Center, Colorado Department of Health and Environment, and Child Development Services. Of the 35 current and potential childcare providers who attended, 100% increased knowledge about child development and nurturing the 600 children in their care; 98% increased knowledge about nutrition and food safety. 100% of potential providers learned state requirements for being a childcare provider, and increased their confidence in working with parents and providing competent childcare.

- Extension professionals often serve as a training resource in counties where increasing need creates a market for childcare businesses. Pre-teens and teenagers, a key source of childcare in rural areas of Colorado, often help fill the childcare need by babysitting for families. Cooperative Extension staff provides these young entrepreneurs training in the best practices of childcare. Evaluations consistently show that participants increase their knowledge of child growth and development, age-appropriate expectations, health and safety concerns, and improve job skills and confidence related to caring for children. To provide a more efficient way to provide continuous education to this audience, a team of Extension agents in family and consumer sciences, 4-H/youth development, and community development developed "Starting Your Own Babysitting Business." The six-part study-by-mail course teaches both babysitting and small business skills, is adaptable to changing family structures and schedules, and continues to meet the area training demand.

- Because preschool children often receive 75-80% of their nutritional intake from childcare providers, and nutrition plays a critical role in their healthy growth and development, it requires childcare providers to face decisions about how to feed children meals and snacks that meet dietary guidelines while staying within operating budgets. Cooperative Extension educational programs help them translate nutritional concepts into appropriate food selections and make cost-effective purchasing decisions. “Developing Children’s Eating Habit’s,” a program in Eagle County given to providers caring for 82 children in their homes, showed 100% of participants increased knowledge about child nutrition, diets and health; 66% said they would immediately put the information to use.

## *4-H School-Enrichment and After-School Experiences*

*Before- and after-school care, or school-age care as it is commonly called, has become a way of life for most American families. Over the course of their developmental years, millions of children will spend more time in out-of-school-care arrangements than they will in formal education. Children spend less than 20% of their waking hours in school. Schools usually provide educational experiences only until mid-afternoon, and are typically open less than half of the days of the year. What happens in the other 80% of a child’s time is critical to children’s development. High quality before- and after-school programs have been proven to help young people develop skills that enable positive development. Successful after-school programs help create safe environments for young people in the hours when juvenile crime peaks. Research from the law-enforcement community shows that 45.5% of all violent juvenile crime on school days takes place between 2-8 p.m., the time of day millions of children and youth are left unsupervised. 57% of violent crimes committed by juveniles occur on school days. Research has also shown that unsupervised children are at significantly greater risk of truancy, academic problems, and risk-taking behavior including substance abuse and teen pregnancy.*

*A National League of Cities survey of public officials showed that they recognize the importance of school-age care as a means of developing healthy communities and families--92% of them ranked childcare and before- and after-school care as one of the most pressing needs for children and families. In survey of voters by the Afterschool Alliance, 8 of 10 people across party lines agreed that after-school programs are an absolute necessity and should be funded. Teachers, parents and*

*principals surveyed in 16 states reported that children had become more cooperative, learned to handle conflicts better, developed an interest in recreational reading and were getting better grades as a result of the after-school programs organized by the Cooperative Extension System. Estimates from a research paper on "Costs & Benefits of After-School Programs" showed the economic impact of after-school programs on high-risk youth ranged from a return on investment of approximately $3-$4, to a high of $10-$13 for every dollar spent. The conservative estimate excludes crime reduction benefits but includes reduced welfare costs, improved school performance and the savings realized by producing more productive members of society.*

*For more than a century, Cooperative Extension's 4-H Youth Development Program—the world's largest youth-serving organization—has provided positive youth development programs for school-age children between the ages of 5 and 18. Each year, nationwide, about two and a half million youth are involved in 4-H school-enrichment programs. Extension staff and volunteers partner with schools, churches, public-housing communities and community centers to provide educational, safe, caring before- and after-school programs. The 4-H Program provides critical links between formal and non-formal educational experiences and helps young people develop skills such as decision making, leadership, communication, interpersonal relations, anger management, responsibility, resiliency, citizenship and good work habits. 4-H curricula in Colorado such as Cloverbuds, Earth Gardens, Mini-Greenhouse, SPACES, Kids in Conservation, SERIES (Science Experiences and Resources for Informal Educational Settings), Ag in the Classroom, environmental appreciation and talent and literacy programs--are designed to enhance personal development, enrich classroom learning and strengthen science and math skills. Teachers find the learn-by-doing instruction of 4-H programs increases student learning and critical-thinking skills. Colorado State University Cooperative Extension helps Colorado youth access educational, safe, caring, 4-H-sponsored before- and after-school programs; benefit from 4-H school-enrichment programs with strengthened math & science skills, critical thinking abilities and improved academic performance; and enhance personal development, social interaction and life skills through participation in 4-H school-age care programs. In Colorado, 98,247 school-age youth participated in 4-H after-school and school-enrichment programs last year.*

## Year-Four Outcomes

- A Cooperative Extension 4-H after-school program in Colorado Springs, funded through the Colorado Trust, reaches low-income, high-risk youth in grades 4-9 at various community sites. In addition to providing a safe haven for youth after school, the 4-H program combines culturally appropriate strategies, developmental assets and character building to promote reading improvement, academic enrichment, leadership development and community service. Of 200 participating youth, 87% had an improvement of at least one grade point in all academic classes; 90% reported they accomplished goals related to leadership, teamwork and decision-making.

- In Moffat County, Cooperative Extension served as the catalyst among community youth-serving agencies for a Colorado Trust grant that funded "RAD--Recreational After-School Doorway" an after-school program for 5th and 6th graders at Craig Intermediate School. The grant supported a full-time coordinator and instructors for 17 programs offered four days a week throughout the school year. 62% of the students participated in the program designed to increase contact with positive adult role models and enhance academic achievement.

- Gardening provides a hands-on classroom that teaches children earth stewardship, science and the process of discovery. Cooperative Extension in Adams and Boulder counties developed two programs that are in high demand by area elementary-school educators. Each year more than 2,100 children in Adams County participate in "Earth Gardens" to design and plant a school landscape while they learn math and science concepts. Extension's "Mini-Greenhouse" program reached more than

7,000 1st-3rd graders in the metro area who were introduced to earth science by sprouting a seed and watching it grow. In Larimer County, the Master Gardener Youth Program helps dozens of 14- to 18-year-olds develop an appreciation for nature while increasing their interpersonal skills through teamwork and community service.

- Cooperative Extension is a strong participant in the Eagle River Youth Coalition, a partnership of youth-serving agencies organized to provide Eagle County youth aged 10 to 18 constructive, skill-building experiences. A wellness fair held at the high school attracted 600-plus students to workshops with such titles as Clues to the Blues, Alcohol 101, Hands Are Not for Hurting and Tests You Don't Want to Fail. Coalition follow-up included an Extension-facilitated county-wide youth assessment and asset-building education in the community.

- In Logan County, Cooperative Extension conducts school-enrichment education for elementary, middle and high school classes using the Character Counts program. Third graders did hands-on lessons on team building, respect, trust, cooperation and citizenship--77% of them could relate the "Pillars of Character" and illustrate examples of character in action. Middle school students experienced in-depth character-building activities with teacher follow-up; 72% of them increased their knowledge of character traits. Extension was also requested to conduct a presentation for high school students who participated in group problem-solving and team-building workshops.

# Stakeholder Input Process

Annual critiques and input on our Plans of Work are provided from our State Extension Advisory Committee and from County Advisory Committees. This is an ongoing process whereby critiques and requests are funneled through county faculty to regional directors and discussed at regional meetings on an annual basis.

In 2003, CSUCE embarked on a futuring effort for Cooperative Extension. The initial effort for developing the "Framework for the Future: A Strategic Plan for Cooperative Extension" was held July 22 & 23, 2003 in Denver, Colorado. Those participating in the Futuring for Extension event included: five county commissioners from around the state; seven CSU administration and faculty representatives from outside of Cooperative Extension, twenty specialists and field faculty representing all major program areas; nine administrative staff including the three regional directors from Cooperative Extension; and Cooperative Extension State Advisory members. The meeting was held after significant budget reductions demanded cuts in program and staffing throughout the state. The goal of the meeting was, after examining the current reality and the ongoing purpose of Cooperative Extension, to make recommendations regarding four strategic areas of the organizations:

- Roles and responsibilities of staff;
- Technology/information management and access;
- Diversification of funding; and
- Organizational structure.

As a result of the Futuring for Extension effort four internal task forces were established to continue, over the next several months, refining recommendations and strategies for each of the four focus areas. The leaders of the task forces formed the Steering Team for this effort which held joint meetings and a two-day retreat which led to the document "Framework for the Future: A Strategic Plan for Cooperative Extension" adopted by the Director's Advisory Committee in March 2004.

The Steering Committee also identified six foundational assumptions about the futuring effort. The finished plan had to:

1. **Answer the big question**; "Who we are and what we do."
2. **Connect the University and community**; to align with and build on the university outreach plan.
3. **Build in flexibility**; to not lose the ability to respond to changing needs.
4. **Invest in productive partnerships**.
5. **Plug in marketing and technology**; to support who we are and what we do.
6. **Act now**; to build on the awareness and excitement the effort generated

The "Framework for the Future" contains a new vision statement for Cooperative Extension, five Futures Statements with key objectives and critical action steps for each, and core Value Statements for the organization. As part of this continuing futuring effort, Core Technical Teams are currently in the process of being formed. These teams will be charged with identifying future programming efforts, including outputs and outcomes, as well as funding sources. We anticipate that the 2005-06 Update may require some adjustment over the next year as these teams clarify their roles and responsibilities.

# Program Review

The program review process has not changed since the submission in 1999. We continue to work with the Ag Experiment Station to develop joint program review processes based on our joint development of a program accountability system.

# Evaluation of the Success of Multi & Joint Activities

**Multistate Projects** - As shown in the attached table, Colorado State University Extension faculty are engaged in a great variety of multistate activities largely focused on the immediate high plains states or in the western region. The activities are organized around our ongoing Program of Work Teams and provide additional resources and synergy in high quality programming and research.

# Multistate Extension Activities

**U.S. Department of Agriculture**
**Cooperative State Research, Education, and Extension Service**
**Supplement to the Annual Report of Accomplishments and Results**
**Multistate Extension Activities and Integrated Activities**
**(Attach Brief Summaries)**

**Institution___Colorado State University_____**
**State_____Colorado_____**

**Check one: __X_ Multistate Extension Activities**
**_____ Integrated Activities (Hatch Act Funds)**
**_____ Integrated Activities (Smith-Lever Act Funds)**

| Title of Planned Program/Activity | Actual Expenditures FY 2003 |
|---|---|
| ___See Attached Description and _____ | _____$417,337_____ |
| ___ Table _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

**Total _____**

**Milan A. Rewerts_____** **_____July 7, 2004____**
**Director** **Date**

**Form CSREES-REPT (2/00)**

# Multistate Extension Activities

**Note: This chart has been adjusted to reflect the loss of three multistate programs due to funding cuts. The Funds shown identify ONLY CSU Smith-Lever dollars.**

| Program | States | FTE | Funds |
|---|---|---|---|
| Colorado Engaging Communities in Transition | Arizona, New Mexico, Utah | 1.0 | 99,000 |
| Certified Greenhouse Professional Program | Wyoming, Utah | .2 | 19,800 |
| Colorado Water Outreach Program | Wyoming, Montana, North Dakota, South Dakota, Utah | .3 | 29,700 |
| Veterinary Extension in the West | Nebraska, Wyoming, Utah | .3 | 29,700 |
| Colorado Row and Vegetable Crop Foliar Disease Management | Nebraska, Wyoming | .2 | 19,800 |
| LandHelp | New Mexico, Arizona, Wyoming | .1 | 9,900 |
| Turf Production and Management in Colorado | Wyoming, Nebraska, Arizona | .2 | 19,800 |
| Commercial Greenhouse Crops | Wyoming | .2 | 19,800 |
| 4-H Youth Life Skills Development in Archuleta County | New Mexico | .25 | 24,750 |
| Sustainable Ag Using Alternative Methods in LaPlata and Archuleta Counties and San Juan County New Mexico | New Mexico | .2 | 19,800 |
| 4-H Youth Life Skills Development in La Plata County | New Mexico | .1 | 9,900 |
| Living on the Land – Small Acreage Curriculum | Oregon, Nevada, Idaho, Washington, Utah, Montana, California | .3 | 29,700 |
| Preserve Warhill Germplasm | Wyoming, Nebraska | .1 | 9,900 |
| Southeast Colorado Dryland Cropping Systems | Kansas | .2 | 19,800 |
| Northeast Colorado Dryland Cropping Systems | Kansas | .3 | 29,700 |
| Food Safety | Wyoming, Minnesota | .2 | 19,800 |
| Sunflowers | Nebraska, Kansas | .3 | 29,700 |
| Irrigation | Nebraska | .2 | 19,800 |
| | **Total** | | **460,350** |

# Agriculture Experiment Station Integrated Activities

**U.S. Department of Agriculture**
**Cooperative State Research, Education, and Extension Service**
**Supplement to the Annual Report of Accomplishments and Results**
**Multistate Extension Activities and Integrated Activities**
**(Attach Brief Summaries)**

**Institution___Colorado State University_____**
**State_____Colorado_____**

**Check one: ____ Multistate Extension Activities**
**____ Integrated Activities (Hatch Act Funds)**
**__X_ Integrated Activities (Smith-Lever Act Funds)**

| Title of Planned Program/Activity | Actual Expenditures FY 2003 |
|---|---|
| ___See Attached Summary and the_____ | _____$580,652.00_____ |
| ___Planned Programs Report_____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

**Total _____**

**__Milan A. Rewerts_____** **July 7, 2004**
**Director** **Date**

**Form CSREES-REPT (2/00)**

# Colorado State University Cooperative Extension/Agriculture Experiment Station Integrated Activities

| Program | Funds |
|---|---|
| Information Technology for Colorado Agriculture and Natural Resource Management | $ 31,763.00 |
| Colorado Integrated Resource Management Western Center | 26,850.00 |
| Crops Testing and Alfalfa Variety Testing and Extension Education for Colorado | 30,950.00 |
| Colorado Environmental Pesticide Education Program | 15,050.00 |
| Sustainable / Organic Integrated Fruit Production for Colorado | 15,525.00 |
| Improving Certified Seed Potato Production and Management | 43,500.00 |
| Salinity Work in Colorado's Lower Arkansas River Basin | 19,900.00 |
| Turf Production and Management in Colorado | 53,986.00 |
| Colorado Row and Vegetable Crop Foliar Disease Management | 48,140.00 |
| Horticulture and the Green Industry | 22,525.00 |
| Precision Agriculture | 15,833.00 |
| Colorado Water Outreach Program | 16,675.00 |
| Colorado Sheep and Wool | 31,763.00 |
| Colorado Field Crop Entomology | 35,202.00 |
| Southeast Colorado Dryland Cropping Systems | 14,450.00 |
| Eastern Regional Range-Livestock Drought | 12,000.00 |
| Northeast Colorado Dryland Cropping Systems | 15,350.00 |
| Southeast Colorado Water Management | 17,175.00 |
| Southeast Regional Range-Livestock | 30,000.00 |
| Commercial Vegetable Crop Production | 15,075.00 |
| Technology Assessment, Applied Research and Information Delivery for Potato Production in Colorado | 68,940.00 |
| **Total** | **$580,652.00** |