2008 Purdue University Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

Purdue University and Purdue Extension
Research with Reason, Results with Relationships

Plan of Work Summary

Agriculture plays a significant role in Indiana's economy and provides a foundation of stability and sustainability for our citizens. Purdue Extension, and the College of Agriculture, College of Consumer and Family Sciences and the School of Veterinary Medicine delineated 10 Program Areas where Purdue University faculty, research and Extension staff address the needs and aspirations of the citizens of Indiana. These are identified in the strategic plans of both the State and Purdue University.

Program Areas

- Agricultural, Natural Resources, and Biological Engineering
- Animals and their Systems
- Economic, Community Development
- Economics, Markets and Policy
- Family Well Being
- Food/Non-Food Products: Development, Processing, Quality, and Delivery
- Human Nutrition, Food Safety, Human Health and Well Being
- Natural Resources and Environment
- Plants and their Systems
- Youth Development

Program Highlights

In the following section, we will address select issues where the key strengths of Purdue University are highlighted, this year primarily in the Program Area "Plants and their Systems". Here, Plan of Work Program Areas coalesce to focus diverse talents on a common issue, bringing a multi-faceted, multi-disciplinary approach to the complex challenges of agriculture in a globally connected world.

Plants and their Systems

Reason: Agribusiness personnel such as fertilizer and chemical dealers, crop consultants, seed company agronomists, producers, and county Extension Educators need pertinent and timely information on existing and potential issues tied to crop production systems and crop and pest management strategies. These individuals rely heavily on Purdue research to develop new solutions and on Purdue Extension to deliver new information. The better informed these agribusiness personnel are, the greater their ability to guide producers toward environmentally and economically sound crop production and pest management decisions. Failure to utilize this information could result in a loss of thousands of dollars per year for an agribusiness or farm operation.

Research: The Purdue University Crop Diagnostic Training and Research Center is known across the Midwest for its unique hands-on approach for teaching the art and science of accurately diagnosing agricultural crop problems. The Center provides informative topics in a "real world" environment, where agriculturists can sharpen their trouble-shooting skills and evaluate new and alternative management strategies. The Purdue Crop Diagnostic Training and Research Center coordinates an interdisciplinary team of specialists from the departments of Agronomy, Botany & Plant Pathology, and Entomology and Purdue Extension.

In 2008, the Center developed and conducted 21 advanced training workshops with University researchers and Extension specialists presenting in-depth information on crop production systems, crop management strategies and IPM recommendations. The workshops utilized many small plot demonstrations to illustrate insect, nematode, weed, disease, soil fertility and cultural

problems associated with corn, soybean, forage and small grain production. The Center annually develops two heavily utilized training publications; the Corn and Soybean Field Guide and the Forage Field Guide. These guides cover the complete range of agricultural topics such as updated fertilizer and pesticide recommendations, insect life stages and damage, and photographs for identification of diseases, herbicide injury, insects, nutrient deficiencies and weeds.

The Center's Pest Management Program produces and publishes a regular Pest & Crop newsletter providing current and forecasted information on pests and their damage throughout the state. Crop production information, weather updates, changes in pesticide regulations and/or status, pest surveys and opportunities for continuing education are included. The Newsletter aids producers and agribusiness personnel in making real-time economic risk assessments for pests and other agronomic issues, as well as assessments for the subsequent year.

Results: In 2008, 800 participants attended Crop Diagnostic Training and Research Center workshops, impacting approximately 41,000,000 acres of farmland in the Midwest. Examples of the information presented included the proper identification of agronomic pests and their damage to crops, decision making tools for delayed planting and replanting, diagnosing nutrient deficiency symptoms in plants, current fertilizer recommendations, soil fertility issues, tillage issues, forage identification and double-crop forage options. Nearly all participants indicated that the workshops clearly helped them improve their overall crop production and management abilities.

Over 72,800 Corn and Soybean Field Guides and Forage Field Guides were sold in 2008, an increase of 30% over 2007. Our Guides were distributed in 20 U.S. states and reached both Canada and Mexico. The Pest & Crop newsletter is available in two formats, free on the World Wide Web and as a weekly, or monthly off-season, email publication notification. Over 1,000 pest managers are regular subscribers. This newsletter aids pest management decision-making, saves producers money, and serves many as the main source of pest information.

Relationships: Purdue University professors and staff involved in these efforts include Thomas Bauman, Joseph Becovitz, Larry Bledsoe, Sylvie Brouder, Dennis Buckmaster, James Camberato, Sue Cambron, Kelly Delp, Jamal Faghihi, Connie Foster, Corey Gerber, Lisa Green, Brad Joern, Keith Johnson, William Johnson, Thomas Jordan, Eileen Kladivko, Charles Mansfield, Linda Mason, Larry Nees, Glenn Nice, Robert Nielsen, John Obermeyer, Phillip Owens, Gail Ruhl, Kenneth Scheeringa, Brandon Schemerhorn, Gregory Shaner, Brad Shelton, Kevin Smith, Jeff Volenec, Tony Vyn, Terry West, Kiersten Wise, Fred Whitford and Charles Woloshuk. External collaborators include The Anderson's Corp., Beck's Hybrids, Crop Production Services, Indiana Association of Professional Crop Consultants, Indiana Certified Crop Advisor Board, Indiana Seed Trade Association, and Pioneer Hybrids.

Plants and their Systems
& Natural Resources and Environment

Reason: Insects serve innumerable functions essential for the health and well-being of our world. The very same function, however, may be a benefit or a bane depending on one's perspective. Wood-boring insects for instance, provide essential ecosystem services by degrading wood and helping to maintain forest health. On the other hand, invasive insects such as the Emerald Ash Borer (EAB) are a serious threat to urban areas and the hardwood lumber industry. Four years after detection in Indiana, the Emerald Ash Borer is now in 21 counties. The timber value of woodland ash in Indiana has been estimated at $500 million. Another borer, the peach bark beetle, significantly reduces the value of black cherry veneer by triggering defensive secretions in the tree which stain the wood. Purdue University is focused on advancing our understanding and management of wood-boring insects across both natural and urban landscapes.

Research: Since infestation effects are felt beyond an individual tree or stand, there is a need to understand how natural and human-modified landscape patterns influence both pest and non-pest species. To begin, one must identify species and delineate population ranges to establish baseline distributional information. Thus, one may understand how to best configure landscapes to limit pest losses while encouraging the native biodiversity of beneficial insects. A collaborative study on the impacts of forestry practices on oak forests and biota in Morgan-Monroe and Yellowwood State Forests has finished its third year. This baseline study delineates occurrence and movement of wood-borer species using conventional surveys and molecular studies. This newly established grid of EAB traps across the Midwest led to hundreds of new county records for wood-borers. These surveys recorded 26 new beetle occurrences (5 for wood-borers, plus 2 wasp records) in Indiana. Molecular analyses of the captured insects have allowed the refinement of the taxonomic keys for invasive exotic wood-borers. Twenty-eight species of the genus *Agrilus* (which includes EAB) were identified using DNA taken from egg, larvae, pupae, and adult stages. One species of wood-borer was actually identified from frass left behind years after the tree was damaged.

Because wood borers spend the majority of their lives concealed beneath the bark of trees, they are physically protected from sprayed pesticides. Therefore, one IPM preventative measure targets the chemically-mediated (pheromone) mating system to reduce beetle reproduction. Properties of some of these contact pheromones were studied using bioassays to determine waxy

hydrocarbon residue and an olfactometer to measure volatiles.

The Extension component of the IPM program provides information to the public and translates that awareness into action. We targeted a public education campaign to campgrounds and the green industry in order to prevent the movement of firewood to reduce the spread of beetles. EAB public awareness handouts and banners were distributed through the Indiana DNR Division of State Parks and Reservoirs and an interactive training program was established and required for all gate personnel at state parks and reservoirs.

Results: Indiana's state parks and reservoirs received over 15 million visitors in 2008, all alerted to the hazards of firewood movement by EAB-trained gate personnel, and reinforced by vinyl banners at gates and nature centers, and interactive card games, children's activity booklets and bulletins distributed at the Nature Centers. The children's activities were so successful that they were added to the "Arrest That Pest" science and civic efficacy outreach curriculum at Purdue University.

To prepare cities, towns and communities for managing EAB, we focused our efforts on teaching personnel how to reduce the spread of EAB during the processing of dead ash trees by the proper use of wood chippers. These "Chipper Rodeos" were well attended by municipal and utility arborists. The largest electric utility in Indiana (Duke Energy) now requires all chipping equipment used in quarantined areas to be Rodeo-certified.

Patterns of land-use alter the distributions of both pest and non-pest insects and these relationships occur at different spatial scales across the landscape. The tools of landscape ecology informed by GIS analyses and field data allow predictive models of wood-borer occurrence to guide management activities. A new theoretical model of spatial population dynamics predicted, to within 500m across the state, new boundaries of the most important wood-boring pest of sugar maples. Thus, integrated pest management plans may be formulated to precisely match insect outbreak locations, and target specific chemical constituents involved in host location and mate recognition strategies of wood-boring insects, as well as the biochemical basis and regulation of pheromone production.

The impact of invasive insects affects all parts of our interconnected globe. Our new collaborators in Asia, Africa and Latin America focused on invasion biology and the application of this knowledge to thwart invasive species and restore impacted habitats. An international working group on invasive species of hardwood forest systems was established to improve communications and foster scientific exchanges between scientists with common interests and responsibilities for invasive insect pests of hardwood forest systems.

Relationships: Purdue University professors leading these efforts are Matthew Ginzel, Jeffrey Holland, Cliff Sadof and Steve Yaninek. Direct collaborators include other academic institutions: Ball State, Indiana University, Michigan State, Ohio State, U-C Riverside, and the University of Illinois; federal and state agencies: APHIS, US Forest Service, Indiana DNR, State Parks and Reservoirs, and the Indiana Cooperative Agricultural Pest Survey; private industries: ArborAmerica and Eli Lilly; and non-profits: INPAWS and The Nature Conservancy.

Plants and their Systems
& Food and Non-Food Products: Development, Processing, Quality, and Delivery

Reason: Indiana has a vibrant and expanding wine industry that contributes significantly to the economic wealth of our State. There were 38 wineries operating statewide in 2008. This increased demand for wine grape production resulted in increased demand for current, accurate and effective information on region-specific grape cultivars, crop sustainability, pest management, winemaking techniques and marketing strategies.

Research: The Purdue Wine Grape Action Team identified several grape cultivars able to withstand Indiana's specific growing conditions. These cultivars exhibit improved fruit quality, pest resistance and consistent yields, resulting in better wines produced. Wine production practices and quality have been improved through regular winery consultations, analytical quality control services and wine sensory evaluations by members of the Wine Grape Action Team. Professional training workshops, seminars and tastings were designed to engage the industry and disseminate the latest scientific information.

The Team teaches a 3-credit wine science course to more than 600 Purdue University students each year. In 2008, we took 15 vintners from Indiana on the first international extension trip "Italy for Wine Professionals" to study production practices in regions similar to Indiana. The annual Vintage Indiana wine festival attracts 10,000 wine lovers to Indianapolis. In cooperation with the Indiana State Fair, the Indy International Wine Competition has become one of the largest in America, attracting more than 3,000 entries from around the world, including 39 U.S. states.

Results: Grape and wine production are the fastest growing segments of Indiana value-added agriculture and agritourism. The Purdue Wine Grape Team engages the Midwestern wine industry through extension, research, marketing and promotion activities and a widely popular wine course for Purdue students. Through the leadership of Purdue University, Indiana's wine grape acreage has increased 10-fold in the past decade, with several additional wineries planned and supported. Wine production surpassed 800,000 gallons (4 million bottles) a year in 2008, a 1,700% increase since the Purdue Wine Grape Team began its efforts in 1990. Indiana wine sales have grown by more than 15% every year. Several Purdue alumni are now employed full time in the American wine industry as well as at related academic institutions. The Purdue Wine Grape Team provides strong extension and research leadership for viticulture and enology programs nationwide.

Our wineries are the primary agritourism destination in the state of Indiana with hundreds of thousands of visitors annually. Wine has emerged as a prime example of a high-value agricultural commodity made in Indiana.

Relationships: Purdue University staff and faculty members Jill Blume, Bruce Bordelon, Christian Butzke, Paul Howard and Jeanette Merritt, working with the Indiana Wine Grape Council, the Indiana Winegrowers' Guild, Inc., and the Indiana State Fair.

Total Actual Amount of professional FTEs/SYs for this State

Year:2008	Extension		Research	
	1862	1890	1862	1890
Plan	130.9	0.0	238.5	0.0
Actual	135.5	0.0	441.5	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External Non-University Panel
- Combined External and Internal University External Non-University Panel

2. Brief Explanation

Teams working on planned programs provide continual review of progress toward goals and outcomes, including assessing whether additional topics should be added to a specific planned program because of changing needs. County Extension Boards continue to review planned programs on an annual basis to ensure that programs address critical needs. PCARET, the Purdue Council on Agricultural Research, Extension and Teaching, meets semi□annually with county, district, and state administrators to discuss needs and how extension and research are or can address them. An annual conference also provides an opportunity for the state PCARET to review progress on planned programs and provide input on expectations of future needs and programs.

Hatch research projects are peer reviewed prior to submission to USDA□CSREES. Review panels consist of at least three scientists that include faculty from at least two disciplines. Faculty members are strongly encouraged to collaborate across departments, schools, and universities. Multi□state projects are reviewed by regional department head associations and the Multi□State Review Committee composed of agricultural experiment station directors. Reviewers look for relevance, feasibility, building on previous research, approach and methods, scientific and technical merit.

Academic departments are reviewed every 5 years by an external CSREES team. The research, extension, and teaching components of each department are examined during these reviews. These reviews provide an additional opportunity for merit review of research and extension programming.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public

Brief Explanation

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Open Listening Sessions
- Needs Assessments

Brief Explanation

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public

Brief Explanation

3. A statement of how the input was considered

- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Action Plans
- To Set Priorities

Brief Explanation

Brief Explanation of what you learned from your Stakeholders

Stakeholders continue to recognize Purdue as a trusted source of information to strengthen agriculture, families, youth, and communities. They ask us to continue our efforts in each of these areas. Research and Extension programs described in this plan of work reflect key concerns of stakeholders. They encourage focusing efforts on relevant issues to maximize resources.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
7969965	0	5171888	0

2. Totaled Actual dollars from Planned Programs Inputs

	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	8172545	0	5610862	0
Actual Matching	12792988	0	24442511	0
Actual All Other	1877673	0	8051705	0
Total Actual Expended	22843206	0	38105078	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years

Carryover	2583319	0	2043140	0

V. Planned Program Table of Content

Program #1

V(A). Planned Program (Summary)

1. Name of the Planned Program

Youth Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	0.0	0.0
Actual	21.9	0.0	0.2	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1187006	0	120747	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1206136	0	148947	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
760605	0	82654	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Developed Curriculum
- Participated in Collaborations with a youth focus
- Conducted Educational workshops
- Provided youth and volunteer training and development sessions
- Developed web sites

2. Brief description of the target audience

• Youth--Grades k-12 • Volunteers • Public and private school teachers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	15000	250000	250000	150000
2008	89595	516059	338149	388201

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	9	0	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of new/revised curriculum topics

Year	Target	Actual
2008	5	5

Output #2

Output Measure

- Number of evaluations conducted of 4-H Youth Development programs, events and activities

Year	Target	Actual
2008	25	18

Output #3

Output Measure

- Number involved in youth focused community collaborations

Year	Target	Actual
2008	1500	21357

Output #4

Output Measure

- Number of quality, educational workshops for youth audiences

Year	Target	Actual
2008	150	3698

Output #5

Output Measure

- Number of volunteer development opportunities

Year	Target	Actual
2008	100	1873

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of volunteers reporting management of safe environments in which 4-H youth have the opportunity to learn.
2	Number of youth who increased knowledge of good character traits, goal setting, team work, communication techniques, decision making, and handling conflict
3	Number of 4-H youth who indicate they possess the skills to practice good character, to plan and organize community service activities, and have the skills to be actively engaged in local, state, and national issues
4	Number of youth at the culmination of their 4-H career who report life skills developed through the program, know how to set goals, work cooperatively in a team, communicate effectively, make decisions based on data and the opinions of others, honor individual differences and handle conflict.
5	Number of youth involved in community service activities
6	Number of counties that have established goals for increasing the types of geographic settings in which programs are offered and increasing the opportunity for youth to be engaged in 4-H club work with a likely result in an increase in the number of youth in 4-H Youth Development Programs.
7	Number of counties that experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.
8	Number of plans developed for volunteer development focused on educating volunteers to increase their understanding of life skill development, experiential learning, risk management, and group management.
9	Number of volunteers and Extension staff who report improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.

Outcome #1

1. Outcome Measures

Number of volunteers reporting management of safe environments in which 4-H youth have the opportunity to learn.

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of youth who increased knowledge of good character traits, goal setting, team work, communication techniques, decision making, and handling conflict

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

During the pre-teen/early teen years, youth face many issues including peer pressure, assuming responsibility for one's own actions and assuming leadership roles.

What has been done

Programs have been developed to offer youth the opportunity to explore relationships with others and develop skills to assume leadership roles in club and organizational settings. 4-H Jr. Leader Programs that have as a primary target those youth enrolled in grades 8-12 have been designed to specifically target this age group and offer programs and experiences to build important interpersonal skills.

Results

4,760 Indiana youth enrolled and participated in their local Jr. Leader program and activities. 32,461 youth indicated when surveyed that after concluding participation in specific 4-H educational programs they had increased their knowledge of good character traits, goal setting, teamwork, communication techniques, decision making, and handling conflict.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #3

1. Outcome Measures

Number of 4-H youth who indicate they possess the skills to practice good character, to plan and organize community service activities, and have the skills to be actively engaged in local, state, and national issues

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth who develop decision making skills and positive personal character are more likely to cooperate and work well with others. Learning through team building skills allows youth to begin to recognize and identify needs, concerns and interests of others resulting in success when dealing with others.

What has been done

Programs were conducted in fifth grade classrooms to help students develop skills that prevent antisocial and high-risk behaviors. Students are provided with experiences that help them to clarify their roles as citizens, develop decision-making skills, interact with positive role models and explore ideas on issues that are relevant to their lives.

Results

6,175 participant evaluations using the Scale of Juvenile Legal Attitudes (pre-post-test) show that after the program, youth have a better attitude toward laws, law enforcement, the judicial system, and the idea that they must take personal responsibility to abide by laws and report unlawful acts. Additionally, classroom teachers report a positive change in general student attitude after completion.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures
Number of youth at the culmination of their 4-H career who report life skills developed through the program, know how to set goals, work cooperatively in a team, communicate effectively, make decisions based on data and the opinions of others, honor individual differences and handle conflict.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	500	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Life skills gained through experiential learning in 4-H programming develops skills needed by youth to function as leaders in the real world. Research indicates that these skills enable youth to interact with their environment in a manner that promotes responsible decision-making and understanding of self and that these skills are retained by youth as they grow into adulthood.

What has been done

Programming focused on teen skill development is ongoing in community 4-H programming. Extension staff conducted formal evaluations of leadership opportunities afforded teens that focused on youth self-reporting life skills learned through experiences in 4-H programs.

Results

100% of Indiana Counties conducted an IRB approved evaluation of life skills learned among 4-H club members in their final year of program involvement. 1303 individual 4-H members (43%) provided survey responses. 4-H involvement was perceived to have had a major influence on each of 35 life skills. The following life skills received the highest reported rating: responsibility, self- motivation, social skills, leadership and communication.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #5

1. Outcome Measures

Number of youth involved in community service activities

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2000	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Learning how to contribute to society to make life better for oneself and others is a valuable life skill. Youth who volunteer are 50% less likely to abuse drugs, alcohol, cigarettes, or engage in destructive behavior (Search Institute, 1995). Youth who volunteer are also more likely to do well in school, graduate, vote, and be philanthropic (UCLA/Higher Education Research Institute, 1991).

What has been done

Indiana 4-H Youth are encouraged to become involved in community by learning to give back to others through community service activities. Activities range from supporting the Operation Military Kids Program by assembling and distributing Hero packs to the children of recently deployed National Guard and Army Reserve units, to conducting events in health care facilities, collecting canned goods for food pantries, providing assistance to community shelters, community beautification and recycling.

Results

Participating teens' presence and involvement in their local communities provides both service and encouragement to individuals who sometimes have difficulty fulfilling basic needs. Teens reported an increased awareness of the level of need in the local community as well as options for serving others. They also indicated they are able to 'put a face on poverty' and developed a sense of pride in giving to others. 16,844 youth were directly involved in community service activities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

Number of counties that have established goals for increasing the types of geographic settings in which programs are offered and increasing the opportunity for youth to be engaged in 4-H club work with a likely result in an increase in the number of youth in 4-H Youth Development Programs.
Not reporting on this Outcome for this Annual Report

Outcome #7

1. **Outcome Measures**
   Number of counties that experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.
   Not reporting on this Outcome for this Annual Report

Outcome #8

1. **Outcome Measures**
   Number of plans developed for volunteer development focused on educating volunteers to increase their understanding of life skill development, experiential learning, risk management, and group management.
   Not reporting on this Outcome for this Annual Report

Outcome #9

1. **Outcome Measures**
   Number of volunteers and Extension staff who report improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.
   Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. **Evaluation Studies Planned**
   - After Only (post program)
   - Retrospective (post program)
   - Before-After (before and after program)
   - Time series (multiple points before and after program)
   - Case Study
   - Other (ongoing needs assessment)

Evaluation Results

Key Items of Evaluation

Program #2

V(A). Planned Program (Summary)

1. Name of the Planned Program

Economics, Markets, and Policy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	15%		15%	
602	Business Management, Finance, and Taxation	8%		8%	
603	Market Economics	13%		13%	
604	Marketing and Distribution Practices	27%		27%	
605	Natural Resource and Environmental Economics	11%		11%	
606	International Trade and Development	11%		11%	
607	Consumer Economics	7%		7%	
609	Economic Theory and Methods	3%		3%	
610	Domestic Policy Analysis	4%		4%	
611	Foreign Policy and Programs	1%		1%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	0.0	18.0	0.0
Actual	18.9	0.0	30.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1301133	0	458773	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1350531	0	1783163	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
124797	0	203309	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- The Center for Trade Policy Analysis conducted workshops with stakeholders on the expected economic impacts of trade and domestic agricultural policy.
- The New Ventures Team and staff in the Agricultural Innovation and Commercialization Center offered training programs throughout the state on entrepreneurship and starting new value-added businesses.
- Agricultural policy workshops were conducted with farm groups such as the Indiana Farm Bureau and the Farm Policy Study Group.
- Websites such as the Agricultural Economic Reports provided timely analysis on marketing, management, and policy issues.
- Econometric and simulation modelswere specified and validated to determine the socioeconomic impacts of proposed international trade and domestic agricultural policy proposals.

2. Brief description of the target audience

•Indiana farmers •State and Federal government policy makers, especially the Indiana State Department of Agriculture and the Office of the Secretary of Agriculture •Indiana general farm and commodity organizations such as Indiana Farm Bureau, Indiana Pork Producers, Indiana Soybean Alliance •Agricultural input supply industry managers such as Monsanto, DuPont-Pioneer, John Deere, Beck Hybrids, Dow-AgroSciences •Agricultural marketing firms such as Tate & Lyle, ADM, Countrymark, Cargill •International trade organizations and officials including the Office of the U.S. Special Trade Representative and WTO in Geneva

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	10000	25000	250	2000
2008	44076	105300	12861	255020

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	15	25	
2008	4	67	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs with state and federal government officials on trade and farm policy development and impact assessment

Year	Target	Actual
2008	10	7

Output #2

Output Measure

- Number of programs offered to food and agri-business leaders by the Center for Food and Agricultural Business

Year	Target	Actual
2008	15	17

Output #3

Output Measure

- Number and quality of peer reviewed research publications in professional journals on economics, management, markets, new and small business development, and policy

Year	Target	Actual
2008	25	70

Output #4

Output Measure

- Number of programs with Indiana farmers on farm management and commodity marketing such as the annual Top Crop Farmer Workshop, Farm Management Tour, and the Outlook Campaign

Year	Target	Actual
2008	50	96

Output #5

Output Measure

- Number of programs offered to tax professionals, attorneys, lenders and other professionals advising farmers and small business owners

Year	Target	Actual
2008	20	30

Output #6

Output Measure

- Number of programs offered to entrepreneurs and small business owners as part of the Agricultural Innovation and Commercialization Center/New Ventures

Year	Target	Actual
2008	25	53

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of participants who increase their knowledge of commodity markets and marketing contracts
2	Number of Indiana farmers who increase the use of commodity markets and marketing contracts to reduce price risk and increase profitability
3	Number of Indiana farms that increase productivity and profitability
4	Number of farm and commodity organization members who increase their knowledge of the potential economic impacts of alternative farm commodity program provisions such as implications for exports, domestic utilization and price, farm income, and government farm program expenditures
5	Number of research-based studies, publications, and reports for policy organization members and legislators on the consequences of their international trade and farm commodity program choices in Farm Bill and related federal legislation
6	Number of research-based analyses of trade liberalization and market-oriented policies to guide government policy-makers as they draft appropriate legislation to increase the competitiveness of U.S. agriculture in a global market
7	Number of food and agribusiness firms, private investors, commodity organization leaders, and government officials who increase their knowledge of the economic potential to increase the number and size of new and current value-added agricultural industries such as grain and livestock processing.
8	Number of new value-added agricultural associated small businesses in Indiana
9	Number of farmers generating additional farm income from additional market opportunities for grain, livestock, and specialty crops
10	Number of participants who increase their knowledge of tax and legal issues affecting farmers and small businesses
11	Number of food and agribusiness managers who increase their knowledge of marketing and sales strategies, general business management, and making decisions under highly uncertain situations
12	Number of entrepreneurs and small businesses that improve efficiency and increase profitability
13	Number of potential entrepreneurs who avoid making bad investment decisions following analysis they did with assistance from AICC/New Ventures programs and resources

Outcome #1

1. Outcome Measures

Number of participants who increase their knowledge of commodity markets and marketing contracts

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of Indiana farmers who increase the use of commodity markets and marketing contracts to reduce price risk and increase profitability

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	30	306

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

Outcome #3

1. Outcome Measures

Number of Indiana farms that increase productivity and profitability

Not reporting on this Outcome for this Annual Report

Outcome #4

1. Outcome Measures

Number of farm and commodity organization members who increase their knowledge of the potential economic impacts of alternative farm commodity program provisions such as implications for exports, domestic utilization and price, farm income, and government farm program expenditures

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Number of research-based studies, publications, and reports for policy organization members and legislators on the consequences of their international trade and farm commodity program choices in Farm Bill and related federal legislation

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	10	14

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
606	International Trade and Development
610	Domestic Policy Analysis

Outcome #6

1. Outcome Measures
Number of research-based analyses of trade liberalization and market-oriented policies to guide government policy-makers as they draft appropriate legislation to increase the competitiveness of U.S. agriculture in a global market

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	5	32

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
606	International Trade and Development

Outcome #7

1. Outcome Measures

Number of food and agribusiness firms, private investors, commodity organization leaders, and government officials who increase their knowledge of the economic potential to increase the number and size of new and current value-added agricultural industries such as grain and livestock processing.

Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Number of new value-added agricultural associated small businesses in Indiana

Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Number of farmers generating additional farm income from additional market opportunities for grain, livestock, and specialty crops

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	2816

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The potential for enhancing meat and live animal demand by developing differential products and animals to fit those product specifications exists in the pork and beef industries. The goal of this project is to enahnce the competitiveness of U.S. farmers and meat industries.

What has been done

Research focused on the analysis of the economic feasibility of alternative lifestock production methods/technologies and the assessment of the demand for differentiated livestock products in a mature industry. Researchers demonstrated a heterogeneity among pork consumers that is a result of nonlinear preferences for antibiotic free, environmentally certified, and animal friendly attirbutes of pork chops. Optimal manure management and the use of DDGS as a swine feed ingredient were examined in the context of a whole farm optimization model.

Results

The distinctions in pork demand lead directly to important marketing and production strategies to be implemented by participants in the pork supply chain. Industry participants and government agents become more aware of alternative approaches. Farmers have more accurate information about the full range of economic impacts associated with feeding DDGS and the impact on meat quality and profitability.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices
601	Economics of Agricultural Production and Farm Management

Outcome #10

1. Outcome Measures

Number of participants who increase their knowledge of tax and legal issues affecting farmers and small businesses

Not reporting on this Outcome for this Annual Report

Outcome #11

1. Outcome Measures

Number of food and agribusiness managers who increase their knowledge of marketing and sales strategies, general business management, and making decisions under highly uncertain situations

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	100	892

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #12

1. Outcome Measures

Number of entrepreneurs and small businesses that improve efficiency and increase profitability

Not reporting on this Outcome for this Annual Report

Outcome #13

1. Outcome Measures

Number of potential entrepreneurs who avoid making bad investment decisions following analysis they did with assistance from AICC/New Ventures programs and resources

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	156

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Diffusion of new technology)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention
- Other (periodic assessment of policy)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #3

V(A). Planned Program (Summary)

1. Name of the Planned Program

Agricultural, Natural Resources, and Biological Engineering

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
401	Structures, Facilities, and General Purpose Farm Supplies	19%		19%	
402	Engineering Systems and Equipment	27%		27%	
403	Waste Disposal, Recycling, and Reuse	38%		38%	
404	Instrumentation and Control Systems	9%		9%	
405	Drainage and Irrigation Systems and Facilities	7%		7%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	5.9	0.0	15.5	0.0
Actual	6.5	0.0	27.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
502944	0	313470	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1279045	0	1726877	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
52788	0	452498	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conducted energy workshops and educational programs throughout the state that involved key research scientists ranging from chemical engineers to logistics experts to economists. •A team of scientists including experts in animal nutrition, soil fertility, and farm management conducted research and worked with farmers to reduce water pollution, especially phosphorus. •Food safety experts, along with microbiologists and nanotechnology experts, developed sensors that will enhance food safety and risks from bioterrorism. •Livestock facilitiesdesigned and analyzed to determine optimal nutrient management systems from an environmental and cropping systems perspective. •Electro-hydraulic sensors and off-road machine operation systems designed and tested. •Scientists monitored air quality of selected concentrated livestock systems on farms in multiple states to facilitate the determination of science-based EPA regulatory standards.

2. Brief description of the target audience

•Indiana livestock producers, especially those managing confined feeding operations •Crop farmers interested in applying animal wastes to enhance yields and reduce water pollution •Stakeholders in the bio-energy industry including Country Mark Cooperative, Indiana State Department of Agriculture, Indiana Soybean Alliance, Indiana Corn Growers,grain processors such as ADM, Cargill, and Tate & Lyle •Officials with federal (EPA) and state (IDEM) regulatory agencies •Off-road farm and industrial equipment manufacturers will be contacted and offered patent licensing opportunities as sensors for machine operation and maintenance are developed and tested

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	5000	40000	2500	5000
2008	51904	140847	28117	5469

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	3
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	5	20	
2008	0	0	66

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational workshops and seminars on nutrient management and air quality

Year	Target	Actual
2008	15	30

Output #2

Output Measure

- Number of research-based educational programs on bio-fuel production, distribution, and policy

Year	Target	Actual
2008	25	21

Output #3

Output Measure

- Number of websites and publications developed

Year	Target	Actual
2008	20	66

Output #4

Output Measure

- Number of patents applied for and licensing arrangements entered into with off-road farm and industrial equipment manufacturers

Year	Target	Actual
2008	5	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of producers who increase awareness and knowledge concerning science-based methods to manage animal wastes so as to minimize potential soil and air pollution
2	Number of environmental pollution incidents caused by inappropriate application of animal wastes to soils or emission of animal odors from production facilities
3	Number of farmers who enhance soil fertility and reduce soil pollution through less reliance on commercial fertilizer and increased reliance on properly applied animal waste
4	Number of energy producers, farmers, and consumers who increase their knowledge of the technical and economic implications of increased use of Indiana produced corn and soybeans in bio-fuels
5	Number of technologies developed and disseminated that will increase the efficiency of bio-fuel production
6	Number of bushels of Indiana produced corn and soybeans used in bio-fuels
7	Number of farmers who increase their knowledge of livestock building designs that are energy efficient as well as more animal welfare friendly
8	Number of efficient and animal sensitive farm structures designed that optimize livestock welfare
9	Number of farmers who increase total livestock production and profitability through the adoption of building designs that are energy efficient as well as more animal welfare friendly
10	Number of livestock facitlities designed that minimize odor emissions and potential air pollution

Outcome #1

1. Outcome Measures

Number of producers who increase awareness and knowledge concerning science-based methods to manage animal wastes so as to minimize potential soil and air pollution

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of environmental pollution incidents caused by inappropriate application of animal wastes to soils or emission of animal odors from production facilities

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	10	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Number of farmers who enhance soil fertility and reduce soil pollution through less reliance on commercial fertilizer and increased reliance on properly applied animal waste

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	5	1010

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #4

1. Outcome Measures
Number of energy producers, farmers, and consumers who increase their knowledge of the technical and economic implications of increased use of Indiana produced corn and soybeans in bio-fuels
Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures
Number of technologies developed and disseminated that will increase the efficiency of bio-fuel production
Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures
Number of bushels of Indiana produced corn and soybeans used in bio-fuels
Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures
Number of farmers who increase their knowledge of livestock building designs that are energy efficient as well as more animal welfare friendly
Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures
Number of efficient and animal sensitive farm structures designed that optimize livestock welfare

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	10	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #9

1. Outcome Measures
Number of farmers who increase total livestock production and profitability through the adoption of building designs that are energy efficient as well as more animal welfare friendly

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	20	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

402	Engineering Systems and Equipment

Outcome #10

1. Outcome Measures

Number of livestock facitlities designed that minimize odor emissions and potential air pollution

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	5	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparison between locales where the program operates and sites without program intervention
- Other (hits and use of web site)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #4

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food and Non-Food Products: Development, Processing, Quality, and Delivery

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	31%		31%	
502	New and Improved Food Products	22%		22%	
503	Quality Maintenance in Storing and Marketing Food Products	18%		18%	
504	Home and Commercial Food Service	2%		2%	
511	New and Improved Non-Food Products and Processes	25%		25%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	2%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	14.5	0.0
Actual	3.7	0.0	21.8	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
472320	0	353616	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1052734	0	1521890	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
49230	0	297208	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conducted research •Developed programs and conducted workshops •Developed Extension curricula •Providee outreach training programs •Established distance education programs and web-based programs •Coordinated meetings with important stakeholders (researchers, industry, farmers, regulatory, etc.) •Worked with media

2. Brief description of the target audience

•Farmers •Animal production personnel •Plant production personnel •Biofuels processing industry personnel •Food manufacturing and processing plant personnel •Non-food manufacturing plant personnel •Professional engineers •State and county health departments •Federal regulatory officials •State industry associations

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	1000	10000	100	1000
2008	6497	354	6368	1088

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	1

Patents listed
Biosensor and Related Method

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	5	10	
2008	5	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to farmers or production agriculture specialists

Year	Target	Actual
2008	10	30

Output #2

Output Measure

- Number of programs offered to the food industry

Year	Target	Actual
2008	10	49

Output #3

Output Measure

- Number of programs offered to the non-food industry

Year	Target	Actual
2008	5	14

Output #4

Output Measure

- Number of research projects on bioprocessing

Year	Target	Actual
2008	5	21

Output #5

Output Measure

- Number of research projects on air quality

Year	Target	Actual
2008	3	4

Output #6

Output Measure

- Number of research projects on wood science and technology

Year	Target	Actual
2008	3	3

Output #7

Output Measure

- Number of research projects on grain storage and processing

Year	Target	Actual
2008	5	9

Output #8

Output Measure

- Number of research projects related to dairy products

Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Number of research projects related to aquaculture products

Year	Target	Actual
2008	3	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of persons gaining knowledge in bioprocessing
2	Number of products produced using new bioprocessing technologies
3	Nnumber of new products produced by new bioprocessing, bioenergy, and biotechnology
4	Number of new bioprocessing techniques used to increase efficiency
5	Number of persons gaining knowledge in food processing and food processing automation
6	Numbers of persons or companies adopting new food automation technologies
7	Number of food and non-food automation technologies used
8	Number of persons gaining knowledge in wood science and wood technologies
9	Numbers of persons and companies involved in new wood technologies
10	Number of furniture and other wood products produced
11	Number of persons gaining knowledge in air quality control systems
12	Number of farming operations using air quality control systems
13	Numbers of animal production facilities adopting better air quality practices
14	Number of production facilities with improved air quality
15	Number of persons gaining knowledge in grain processing
16	Numbers of persons and companies adopting better grain processing practices
17	Number of grain processes that result in higher quality grain products

Outcome #1

1. Outcome Measures

Number of persons gaining knowledge in bioprocessing

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of products produced using new bioprocessing technologies

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The USDA advised Americans to increase their physical activity and their intake of dietary fiber, and reduce consumption of starches and caloric sweeteners. The incorporation of fibers in snacks and breakfast cereals will contribute to achieving those fiber intake requirements.

What has been done

When properly modified, common and inexpensive dietary fibers (corn, wheat, and rice brans) can be incorporated at high levels in breakfast cereal and snack formulations, improving the functionality of the fiber and extrudate expansion.

Results

Modification technologies allow the use of underutilized by-products of agricultural operations, improving the nutritional and organoleptic quality of cereal foods by incorporating higher fiber content. This information is indispensable to food manufacturers in designing enhanced food products to consumers, as well as assisting them in the creation of high fiber, crispy extruded puffed products aiding in the fight against obesity in the United States.

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes
502	New and Improved Food Products

Outcome #3

1. Outcome Measures

Nnumber of new products produced by new bioprocessing, bioenergy, and biotechnology

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #4

1. Outcome Measures
Number of new bioprocessing techniques used to increase efficiency

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #5

1. Outcome Measures

Number of persons gaining knowledge in food processing and food processing automation
Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Numbers of persons or companies adopting new food automation technologies
Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Number of food and non-food automation technologies used
Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Number of persons gaining knowledge in wood science and wood technologies
Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Numbers of persons and companies involved in new wood technologies

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #10

1. **Outcome Measures**
   Number of furniture and other wood products produced
   Not reporting on this Outcome for this Annual Report

Outcome #11

1. **Outcome Measures**
   Number of persons gaining knowledge in air quality control systems
   Not reporting on this Outcome for this Annual Report

Outcome #12

1. **Outcome Measures**
   Number of farming operations using air quality control systems
   Not reporting on this Outcome for this Annual Report

Outcome #13

1. **Outcome Measures**
   Numbers of animal production facilities adopting better air quality practices
   Not reporting on this Outcome for this Annual Report

Outcome #14

1. **Outcome Measures**
   Number of production facilities with improved air quality
   Not reporting on this Outcome for this Annual Report

Outcome #15

1. **Outcome Measures**
   Number of persons gaining knowledge in grain processing
   Not reporting on this Outcome for this Annual Report

Outcome #16

1. **Outcome Measures**
   Numbers of persons and companies adopting better grain processing practices
   Not reporting on this Outcome for this Annual Report

Outcome #17

1. **Outcome Measures**
   Number of grain processes that result in higher quality grain products
   Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)
- Other (State & National Priorities)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #5

V(A). Planned Program (Summary)

1. Name of the Planned Program

Family Well-Being

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	26%		26%	
802	Human Development and Family Well-Being	74%		74%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	4.0	0.0
Actual	11.3	0.0	18.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
606649	0	228440	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1244999	0	1315362	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
114855	0	156385	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

• Conduct edworkshops • Provided training • Developed web-based and distance educational materials •Worked with the media • Conducted research • Created Displays •Collaborated with other agencies

2. Brief description of the target audience

•immigrants •welfare-to-work individuals •job loss individuals •youth •adults •limited resource families •farm families •families in divorce •child care professionals •trainers of child care professionals •policy makers •parents •volunteers that work with parents •elder caregivers •adult children •retirement associations •community leaders •planners

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	40000	160000	19500	73000
2008	97411	1319525	19941	32089

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	33

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of staff development opportunties for Extension Educators

Year	Target	Actual
2008	5	35

Output #2

Output Measure

- Number of programs offered to parents, childcare providers, youth, adults, low-wealth households and consumers

Year	Target	Actual
2008	50	1348

Output #3

Output Measure

- Number of research projects

Year	Target	Actual
2008	3	10

Output #4

Output Measure

- Number of publications

Year	Target	Actual
2008	2	33

Output #5

Output Measure

- Number of web sites developed

Year	Target	Actual
2008	1	7

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of participants who increased their knowledge of debt management
2	Number of participants who adopted one or more practices to reduce debt
3	Number of participants reporting decreased debt
4	Number of participants who increased their knowledge of the benefits of saving on a regular basis
5	Number of participants who increased the amount of money they save regularly
6	Number of participants who save regularly as a result of educational programming
7	Number of participants who increased their knowledge of basic personal financial management
8	Number of participants who have established financial goals to guide financial decisions
9	Number of participants who develop a plan for achieving financial security
10	Number of participants who report increased financial security
11	Number of participants who increased their knowledge of childcare and how to manage care giving roles and responsibilities
12	Number of participants who increased their knowledge of decision making skills necessary to make quality of life decisions for caregivers and receivers
13	Number of child care professionals who are working toward or who have obtained the Child Development Accreditation
14	Number of child care slots
15	Number of child care professional positions
16	Number of quality and affordable child care facilities
17	Number of participants who increased their knowledge of basic parenting skills
18	Number of participants reporting improved parent-child communication
19	Number of participants reporting significant improvement in satisfaction and quality of parent-child relationships

Outcome #1

1. Outcome Measures

Number of participants who increased their knowledge of debt management

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of participants who adopted one or more practices to reduce debt

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	841

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #3

1. Outcome Measures

Number of participants reporting decreased debt

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	75	133

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #4

1. Outcome Measures

Number of participants who increased their knowledge of the benefits of saving on a regular basis

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Number of participants who increased the amount of money they save regularly

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	1469

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #6

1. Outcome Measures

Number of participants who save regularly as a result of educational programming

Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Number of participants who increased their knowledge of basic personal financial management

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	5090

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Achieving and maintaining financial stability is a challenge for many Hoosiers. National surveys of workers report that 28% sometimes have trouble paying their monthly bills and feel they are just one major setback from a financial disaster.

What has been done

Purdue Extension, National City Bank and the IRS convened an 18 member coalition to organize Money Smart Week, a financial literacy event. Educational workshops and financial displays were used to increase the financial literacy of the 150 participants.

Results

94% of participants completing an evaluation said the Money Smart event was valuable or very valuable. 81% said they were likely or very likely to change the way they manage money because of what they learned. The Money Smart Week Coalition became part of the Allen County Financial Stability Partnership under the leadership of the United Way to promote financial literacy year round.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #8

1. Outcome Measures

Number of participants who have established financial goals to guide financial decisions

Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Number of participants who develop a plan for achieving financial security

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	815

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Forty percent of American families spend money as fast as it comes into their households. They may find themselves in debt when unplanned expenses occur.

What has been done

Extension educators developed a program to help consumers understand how current money management practices affect financial security and to increase consumer's knowledge of money management practices that can lead to financial control.

Results

Follow up evaluations showed that one out of two participants reported they tracked expenses and used a spending/saving plan after the workshop. Eighty percent reported they saved money with the average amount saved at $438.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #10

1. Outcome Measures
Number of participants who report increased financial security

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	300	230

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #11

1. Outcome Measures

Number of participants who increased their knowledge of childcare and how to manage care giving roles and responsibilities

Not reporting on this Outcome for this Annual Report

Outcome #12

1. Outcome Measures

Number of participants who increased their knowledge of decision making skills necessary to make quality of life decisions for caregivers and receivers

Not reporting on this Outcome for this Annual Report

Outcome #13

1. Outcome Measures

Number of child care professionals who are working toward or who have obtained the Child Development Accreditation

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	121

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #14

1. Outcome Measures

Number of child care slots

Not reporting on this Outcome for this Annual Report

Outcome #15

1. Outcome Measures

Number of child care professional positions

Not reporting on this Outcome for this Annual Report

Outcome #16

1. Outcome Measures

Number of quality and affordable child care facilities

Not reporting on this Outcome for this Annual Report

Outcome #17

1. Outcome Measures

Number of participants who increased their knowledge of basic parenting skills

Not reporting on this Outcome for this Annual Report

Outcome #18

1. Outcome Measures

Number of participants reporting improved parent-child communication

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	2430

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #19

1. Outcome Measures

Number of participants reporting significant improvement in satisfaction and quality of parent-child relationships

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	603

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Parents need reliable information on parenting topics such as reading, age-appropriate activities, communication and discipline.

What has been done

Extension worked with community based organizations to offer programs focused on age appropriate activities they can repeat at home for little or no cost. Families also received a newsletter, take home activities and a book at each program. Approximately 130 kindergarten children and 200 parents benefitted from this program in 2007-08.

Results

Parents reported that they learned something new at this program. Eighty-six percent of those responding to a survey reported something they would try at home as a result of this program. A participant said 'this is a great opportunity for kindergarteners to be able to have one on one time with Mom or Dad because in a lot of cases, family fun night is the only time that kindergarten kids get to have 'me' time with Mom and Dad.'

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #6

V(A). Planned Program (Summary)

1. Name of the Planned Program

Human Nutrition, Food Safety and Human Health and Well-Being

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food	1%		1%	
702	Requirements and Function of Nutrients and Other Food Components	30%		30%	
703	Nutrition Education and Behavior	11%		11%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.	7%		7%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	28%		28%	
721	Insects and Other Pests Affecting Humans	7%		7%	
723	Hazards to Human Health and Safety	16%		16%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	**Extension**		**Research**	
	1862	**1890**	**1862**	**1890**
Plan	15.5	0.0	53.5	0.0
Actual	3.7	0.0	20.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		**Research**	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
612787	0	596671	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1005908	0	1389625	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
134868	0	213612	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research-based programs focused on conducting research experiments and programs emphasizing our key interest areas including:

•detection and control of foodborne pathogens, •effects of diet and nutrition on human health, •beneficial effects of nutrition, functional foods and biomedical research, and •nutritional impact on chronic diseases including diabetes, heart disease, and obesity

A wide variety of programs were delivered to our targeted audiences.Some programs included a complete development of curriculum, while others involved the use of readily available programs used in other states and/or available for purchase through different organizations.Our output effort included:

•partnering with important stakeholders •development of workshop materials and curricula •conducting workshops
•development of web-based and distance education materials •working with the media

Most programs involved some type of collaboration or partnerships with our stakeholders, with industry, with consumers, or with regulatory agencies.Evaluation tools vary greatly depending on the intended audience and program type ranging from surveys, to pre-and post test, to national certification exams, and intensive follow up surveys to better assess knowledge gain.

2. Brief description of the target audience

• Animal production personnel •Plant production personnel •Food manufacturing and processing plant personnel •The transportation industry •Foodservice and food retail workers •Consumers •Healthcare providers •Day care providers •Nursing homes •Youth •State and county health departments •Federal regulatory officials •State industry associations •First Responders

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

Year	Direct Contacts Adults Target	Indirect Contacts Adults Target	Direct Contacts Youth Target	Indirect Contacts Youth Target
Plan	3000	20000	300	2000
2008	202550	1064406	79007	77851

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	2
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	27

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to consumers

Year	Target	Actual
2008	100	5086

Output #2

Output Measure

- Number of programs offered to the food industry

Year	Target	Actual
2008	100	45

Output #3

Output Measure

- Number of research projects on food safety, human nutrition, and health

Year	Target	Actual
2008	25	46

Output #4

Output Measure

- Number of nutrition related research publications

Year	Target	Actual
2008	4	27

Output #5

Output Measure

- Number of research publications related to detection of foodborne pathogens

Year	Target	Actual
2008	5	3

Output #6

Output Measure

- Number of research publications related to control of foodborne hazards

Year	Target	Actual
2008	4	9

Output #7

Output Measure

- Number of research publications related to food defense and protection

Year	Target	Actual
2008	2	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of persons who increased their knowledge of proper hand washing
2	Number of persons who increased their knowledge of cooking foods adequately
3	Number of persons who increased their knowledge of avoiding cross-contamination
4	Number of persons who increased their knowledge of keeping food at a safe temperature
5	Number of persons who increased their knowledge of storing foods properly
6	Number of participants passing food handler certificate
7	Number of participants entering or being retained in the food service workforce as a result of training
8	Number of incidents of food borne illness associated with unsafe food handling practices
9	Number of deaths due to unsafe food handling practices
10	Number of persons who increased their knowledge of the connection between food choices and risk of chronic disease.
11	Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories
12	Number of persons who increased knowledge of USDA serving sizes
13	Number of participants consuming appropriate USDA serving sizes
14	Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories
15	Number of participants with decreased risk factors for chronic disease (including diabetes, heart disease, obesity)
16	Number of participants with decreased chronic disease complications (including diabetes, heart disease, obesity)
17	Number of persons who increase knowledge of the relationship between nutrition and health
18	Number of persons who increased their knowledge of physical activity recommendations
19	Number of persons who adopt one or more practices to improve food choices and activity levels
20	Number of participants that report reduced medical costs because of changes in food choices and activity levels

Outcome #1

1. **Outcome Measures**
   Number of persons who increased their knowledge of proper hand washing
   Not reporting on this Outcome for this Annual Report

Outcome #2

1. **Outcome Measures**
   Number of persons who increased their knowledge of cooking foods adequately
   Not reporting on this Outcome for this Annual Report

Outcome #3

1. **Outcome Measures**
   Number of persons who increased their knowledge of avoiding cross-contamination
   Not reporting on this Outcome for this Annual Report

Outcome #4

1. **Outcome Measures**
   Number of persons who increased their knowledge of keeping food at a safe temperature
   Not reporting on this Outcome for this Annual Report

Outcome #5

1. **Outcome Measures**
   Number of persons who increased their knowledge of storing foods properly
   Not reporting on this Outcome for this Annual Report

Outcome #6

1. **Outcome Measures**
   Number of participants passing food handler certificate

2. **Associated Institution Types**

   •1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	469

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #7

1. Outcome Measures

Number of participants entering or being retained in the food service workforce as a result of training

Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Number of incidents of food borne illness associated with unsafe food handling practices

Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Number of deaths due to unsafe food handling practices

Not reporting on this Outcome for this Annual Report

Outcome #10

1. Outcome Measures

Number of persons who increased their knowledge of the connection between food choices and risk of chronic disease.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The number of individuals who have diabetes is growing rapidly in the state of Indiana. The Center for Disease Control and the National Institute of Health estimate that 17 million Americans have this disease and another 16 million have pre-diabetes. The number of Americans diagnosed with diabetes has increased 61% over the past decade. Annual health care costs for an individual with diabetes are estimated at $10,000 compared to $2,700 for a person without diabetes.

What has been done

Dining with Diabetes is a program to help diabetics and their families learn how to prepare meals. The program consists of four 2 hour sessions and utilizes the expertise of Extension educators in collaboration with healthcare professionals. Extension educators demonstrate several methods of preparing meals so that they are still enjoyable, but more nutritious. A total of 559 Indiana residents attended the program. Fifty eight percent of the attendees indicated they had diabetes and the others reported they were preparing meals for someone who had diabetes.

Results

There were significant increases in the participants' knowledge about diabetes according to pre/post test scores. Participants were asked about several behaviors that could affect the risk for diabetes. When participants were asked how many days a week they ate 3 or more servings of fruits and vegetables, there was a shift from 1 to 3 times a week toward 4 to 6 times a week. When participants were asked how many days a week they exercised 20 minutes or more, there was an increase from an average of 2.7 days a week before the program to 3.1 days a week after the program. The participants also indicated a significant change from using the nutrition facts label 'sometimes' toward using the label 'frequently'.

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

Outcome #11

1. Outcome Measures

Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories

Not reporting on this Outcome for this Annual Report

Outcome #12

1. Outcome Measures

Number of persons who increased knowledge of USDA serving sizes

Not reporting on this Outcome for this Annual Report

Outcome #13

1. Outcome Measures

Number of participants consuming appropriate USDA serving sizes

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	1266

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #14

1. Outcome Measures

Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	1000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

Outcome #15

1. Outcome Measures

Number of participants with decreased risk factors for chronic disease (including diabetes, heart disease, obesity)

Not reporting on this Outcome for this Annual Report

Outcome #16

1. Outcome Measures

Number of participants with decreased chronic disease complications (including diabetes, heart disease, obesity)

Not reporting on this Outcome for this Annual Report

Outcome #17

1. Outcome Measures

Number of persons who increase knowledge of the relationship between nutrition and health

Not reporting on this Outcome for this Annual Report

Outcome #18

1. Outcome Measures

Number of persons who increased their knowledge of physical activity recommendations

Not reporting on this Outcome for this Annual Report

Outcome #19

1. Outcome Measures

Number of persons who adopt one or more practices to improve food choices and activity levels

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

More than half of the youth in the United States eat too much fat, too little fruits and vegetables, and consume too little calcium. Research has shown that poor nutrition can affect a child's intellectual performance. Youth establish many life long habits at an early age. Instilling proper nutrition practices in youth is key to ensuring health as adults.

What has been done

Exploring MyPyramid with Professor Popcorn (Professor Popcorn) is a curriculum for youth in grades 1 6.Major concepts included in the curriculum have been linked to Indiana's health and science education standards. Topics include: MyPyramid; physical activity; the Dietary Guidelines for Americans; and, Fight Bac!, concepts of Clean, Separate, Cook and Chill. Extension staff taught and provided evaluation data for the Professor Popcorn program in 49 Indiana counties. A total of 19,995 youth in 664 groups from were taught the curriculum: 6725 youth in 201 groups in grades 1 2; 11296 youth in 396 groups in Grades 3 4; and, 2001 youth in 67 groups in grades 5 6.

Results

Grades 3-6 reported a significant increase in reporting that they practiced healthy food selection habits, at least most days of the week. They also reported that they practiced healthy physical activity habits at least most days of the week.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #20

1. Outcome Measures

Number of participants that report reduced medical costs because of changes in food choices and activity levels

Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)
- Other (State and National priorities)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Other (Success/pass rate on regulatory)

Evaluation Results

Key Items of Evaluation

Program #7

V(A). Planned Program (Summary)

1. Name of the Planned Program

Natural Resources and Environment

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	1%		1%	
102	Soil, Plant, Water, Nutrient Relationships	18%		18%	
104	Protect Soil from Harmful Effects of Natural Elements	5%		5%	
111	Conservation and Efficient Use of Water	2%		2%	
112	Watershed Protection and Management	6%		6%	
121	Management of Range Resources	1%		1%	
123	Management and Sustainability of Forest Resources	18%		18%	
125	Agroforestry	1%		1%	
131	Alternative Uses of Land	10%		10%	
132	Weather and Climate	4%		4%	
133	Pollution Prevention and Mitigation	24%		24%	
135	Aquatic and Terrestrial Wildlife	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	0.0	32.0	0.0
Actual	14.9	0.0	29.5	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
693540	0	367125	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1652109	0	1915315	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
73289	0	269455	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conducted workshops •Wrote and published Extension publications •Prepared public service announcements •Conducted research •Developed web sites •Conducted home and farm visits •Prepared displays, demonstrations, and field days •Presented IP video programs •Had one-on-one consultations •Collaborated with sister agencies

2. Brief description of the target audience

•Agricultural producers •Rural and urban residents •Elected officials and other decision-makers •Owners of private and public wildlands •Natural resource professionals •Technical service providers •Tree care providers •Right of way managers •Urban planners •Youth

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	23000	125000	6000	35000
2008	195268	191567	17812	6194

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	2
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	25	75	
2008	0	0	182

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to producers, land owners, and land managers.

Year	Target	Actual
2008	100	408

Output #2

Output Measure

- Number of research projects

Year	Target	Actual
2008	25	171

Output #3

Output Measure

- Number of demonstrations and field days

Year	Target	Actual
2008	10	120

Output #4

Output Measure

- Number of publications

Year	Target	Actual
2008	100	182

Output #5

Output Measure

- Number of publications, media interactions, and presentations related to Indiana and regional weather and climate

Year	Target	Actual
2008	20	45

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of participants who increase knowledge of practices to protect water resources
2	Number of participants who improve decision making for use of water resources
3	Number of participants who increase knowledge of proper application of fertilizer, manure and waste products to soil and potential for environmental consequences of misapplication
4	Number of participants who increased adoption of proper application of fertilizer, manure and waste products to soil
5	Number of participants who increase knowledge of best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands
6	Number of participants who adopt best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands
7	Number of participants who increase knowledge of the value of ponds in landscapes and methods for installing and managing ponds
8	Number of participants who increase value of landscapes through better installation and management of ponds
9	Number of participants who increase knowledge of on-site wastewater treatment siting and maintenance needs
10	Number of participants who make more informed decisions for on-site wastewater treatment siting and maintenance
11	Number of water quality violations related to animal production and land application in the state of Indiana
12	Number of tree care providers in Indiana who become certified arborists.
13	Number of professional natural resource advisors who have the skills necessary to assess the health of the wildlands
14	Number of wildlands owners who have a relationship with knowledgeable professional natural resource advisors and have developed and implemented a management plan
15	Number of natural resource professionals and wildland owners who have worked with landowners to develop and implement management plans
16	Number of owners of wildlands who will have assessed the health of their lands and developed and implemented management plans
17	Number of observers participating in weather and climate monitoring efforts

Outcome #1

1. Outcome Measures

Number of participants who increase knowledge of practices to protect water resources

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of participants who improve decision making for use of water resources

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	616

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water

Outcome #3

1. Outcome Measures

Number of participants who increase knowledge of proper application of fertilizer, manure and waste products to soil and potential for environmental consequences of misapplication

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Carbon-based nanomaterials are finding their way into many product applications and into the environment. An early assessment of their potential environmental impacts, prior to environmental release, is warranted.

What has been done

This work focused on an assessment of the impacts of the nanomaterials fullerene (C60) and single-wall carbon nanotubes (SWNTs) on soil microbial processes, considered to be a sensitive indicator of the potential for environmental stress.

Results

Fullerene had limited impact on the structure and activity of the soil microbial community. SWNTs had some effects on community structures but not on activities. Though not affected by C60, the organic solvents used to manufacture the materials (toluene or tetrahydrofuran) showed negative effects on microbial activity and changed the bacterial community composition. Carbon nanomaterials were not inherently more harmful than the solvents. Soil has some capacity to retain the carbon materials though microorganisms seem to ignore them.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management

Outcome #4

1. Outcome Measures
Number of participants who increased adoption of proper application of fertilizer, manure and waste products to soil

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	125

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Number of participants who increase knowledge of best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Number of participants who adopt best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
102	Soil, Plant, Water, Nutrient Relationships

Outcome #7

1. Outcome Measures

Number of participants who increase knowledge of the value of ponds in landscapes and methods for installing and managing ponds

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Although wood-boring beetles are important economic pests to hardwood industries, many species are not pests, but provide valuable ecosystem services within rotting wood. We need to understand how human-imposed landscape patterns influences both pest and the non-pest species.

What has been done

We are studying the occurrence and movement of different wood-borer species with conventional surveys and molecular studies, and databasing locations of non-target wood-borers caught and removed from the newly established grid of traps for the emerald ash borer across the Midwest.

Results

Human-created landscape patterns influence different species of wood-borers, altering the distribution of both pest and non-pest species at different spatial scales. We can create predictive models of wood-borer occurrence to guide management activities and further our ability to detect and control pests by refining taxonomic keys, and by molecular techniques

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
123	Management and Sustainability of Forest Resources

Outcome #8

1. Outcome Measures
Number of participants who increase value of landscapes through better installation and management of ponds

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	65

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
135	Aquatic and Terrestrial Wildlife
133	Pollution Prevention and Mitigation

Outcome #9

1. Outcome Measures

Number of participants who increase knowledge of on-site wastewater treatment siting and maintenance needs

Not reporting on this Outcome for this Annual Report

Outcome #10

1. Outcome Measures

Number of participants who make more informed decisions for on-site wastewater treatment siting and maintenance

Not reporting on this Outcome for this Annual Report

Outcome #11

1. Outcome Measures

Number of water quality violations related to animal production and land application in the state of Indiana

Not reporting on this Outcome for this Annual Report

Outcome #12

1. Outcome Measures

Number of tree care providers in Indiana who become certified arborists.

Not reporting on this Outcome for this Annual Report

Outcome #13

1. Outcome Measures

Number of professional natural resource advisors who have the skills necessary to assess the health of the wildlands

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	265

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
125	Agroforestry
123	Management and Sustainability of Forest Resources

Outcome #14

1. Outcome Measures

Number of wildlands owners who have a relationship with knowledgeable professional natural resource advisors and have developed and implemented a management plan

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	119

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
125	Agroforestry

Outcome #15

1. Outcome Measures

Number of natural resource professionals and wildland owners who have worked with landowners to develop and implement management plans

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	359

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
123	Management and Sustainability of Forest Resources

Outcome #16

1. Outcome Measures
Number of owners of wildlands who will have assessed the health of their lands and developed and implemented management plans

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	17	344

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife

Outcome #17

1. Outcome Measures

Number of observers participating in weather and climate monitoring efforts

Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #8

V(A). Planned Program (Summary)

1. Name of the Planned Program

Plants and Their Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	12%		12%	
202	Plant Genetic Resources	3%		3%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	8%		8%	
204	Plant Product Quality and Utility (Preharvest)	1%		1%	
205	Plant Management Systems	15%		15%	
206	Basic Plant Biology	11%		11%	
211	Insects, Mites, and Other Arthropods Affecting Plants	14%		14%	
212	Pathogens and Nematodes Affecting Plants	14%		14%	
213	Weeds Affecting Plants	9%		9%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	1%		1%	
215	Biological Control of Pests Affecting Plants	3%		3%	
216	Integrated Pest Management Systems	9%		9%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	34.0	0.0	49.0	0.0
Actual	37.7	0.0	114.6	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1309315	0	1768153	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1763543	0	6739658	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
273840	0	1219492	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conducted meetings, conferences, and workshops •Published newsletters and Extension publication •Established web sites •Held Field days and demonstration plots •Conducted telephone consultations •Conducted applied research •Used mass media •Conducted Short courses

2. Brief description of the target audience

•Agricultural crop producers •Crop consultants •Agribusinesses •Landowners •Horticultural producers •Professionals involved with golf courses, lawn care, sod production, athletic turf, and grounds •Individuals and families interested in small farms or alternative enterprises •Homeowners •Youth

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	175000	400000	20000	500000
2008	140180	2159714	8855	15711

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	50	100	
2008	164	153	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to producers, horticultural enterprises, Master Gardeners, etc.

Year	Target	Actual
2008	500	992

Output #2

Output Measure

- Number of research projects.

Year	Target	Actual
2008	50	198

Output #3

Output Measure

- Number of research publications.

Year	Target	Actual
2008	100	153

Output #4

Output Measure

- Number of Extension publications, new or revised.

Year	Target	Actual
2008	50	164

Output #5

Output Measure

- Number of volunteers trained to assist with information and programs.

Year	Target	Actual
2008	500	2925

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of horticultural enterprises who increase knowledge of new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment
2	Number of horticultural enterprises who adopt new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment
3	Number of Indiana citizens who increase knowledge of proper landscape and garden management.
4	Number of volunteers who increase knowledge of consumer horticulture to serve as first detectors for symptoms of invasive species.
5	Number of professional turf managers who increase knowledge of pesticides, nutrients, and water inputs for maintaining high quality turf.
6	Number of professional turf managers who reduce pesticide, nutrient, and water inputs while maintaining high quality turf.
7	Number of high quality turf acres maintained with reduced pesticides, nutrient and water inputs.
8	Number of crop producers who increase knowledge of integrated pest management practices
9	Number of acres of field crops (corn, soybeans, forage, small grains) in which pests are managed using an integrated pest management system.
10	Number of crop producers who increase knowledge of best management practices in crop, nutrients, and related soil/water decisions.
11	Number of producers who adopt best management practices in crop, nutrient, and related soil/water decisions.

Outcome #1

1. Outcome Measures

Number of horticultural enterprises who increase knowledge of new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The destructive nature of many wood-boring insects is exacerbated by difficulty in controlling their populations. The long term goal of this project is to develop effective pest management tactics targeting the chemically-mediated mating system of the beetles.

What has been done

Using an olfactometer, we measured the attraction of adult male and female beetles to volatiles emanating from bolts of black cherry; host material infested with female beetles and male infested host material, and also determined whether hydrocarbons act as contact pheromones.

Results

Effective management programs were established, such as by optimizing survey strategies, developing arboricultural techniques to bolster resistance, and improving methods for detecting invasive species. Understanding the chemical basis of host location and mate recognition strategies of wood-boring insects, as well as the biochemical basis and endocrine regulation of pheromone production in important pests may also lead to the development of new control methods that will enhance the health, quality, and productivity of North American hardwood forests

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Pathogens and Nematodes Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
205	Plant Management Systems
215	Biological Control of Pests Affecting Plants

Outcome #2

1. Outcome Measures

Number of horticultural enterprises who adopt new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	20	165

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
212	Pathogens and Nematodes Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
205	Plant Management Systems
215	Biological Control of Pests Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
213	Weeds Affecting Plants

Outcome #3

1. Outcome Measures

Number of Indiana citizens who increase knowledge of proper landscape and garden management.

Not reporting on this Outcome for this Annual Report

Outcome #4

1. Outcome Measures

Number of volunteers who increase knowledge of consumer horticulture to serve as first detectors for symptoms of invasive species.

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Number of professional turf managers who increase knowledge of pesticides, nutrients, and water inputs for maintaining high quality turf.

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Number of professional turf managers who reduce pesticide, nutrient, and water inputs while maintaining high quality turf.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	2000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
213	Weeds Affecting Plants
212	Pathogens and Nematodes Affecting Plants
215	Biological Control of Pests Affecting Plants
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
205	Plant Management Systems

Outcome #7

1. Outcome Measures
Number of high quality turf acres maintained with reduced pesticides, nutrient and water inputs.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	350000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
214	Vertebrates, Mollusks, and Other Pests Affecting Plants

203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
213	Weeds Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
216	Integrated Pest Management Systems
215	Biological Control of Pests Affecting Plants
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants

Outcome #8

1. Outcome Measures

Number of crop producers who increase knowledge of integrated pest management practices

Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Number of acres of field crops (corn, soybeans, forage, small grains) in which pests are managed using an integrated pest management system.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3000000	5505978

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems

Outcome #10

1. Outcome Measures

Number of crop producers who increase knowledge of best management practices in crop, nutrients, and related soil/water decisions.

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Agribusiness personnel need pertinent and timely information on crop production systems and crop and pest management strategies to make environmentally and economically sound crop production and crop and pest management input decisions and/or recommendations.

What has been done

The Purdue University Crop Diagnostic Training and Research Center conducted 21 state-of-the-art training workshops between January and September. Extension specialists presented in-depth information on crop production systems and crop and pest management strategies.

Results

In 2008, 797 participants attended Center workshops, impacting over 41,000,000 acres of farmland in the Midwest. Information included identification of agronomic pests and their damage, decision making tools for planting, nutrient deficiency symptoms, fertilizer recommendations, soil fertility and tillage issues, forage identification and double-crop forage options. A record 72,800 of the highly-regarded Corn & Soybean Field Guide and Forage Field Guide were sold and distributed across North America, Canada and Mexico.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #11

1. Outcome Measures
Number of producers who adopt best management practices in crop, nutrient, and related soil/water decisions.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	200	2547

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farm producers rely on agribusiness to identify and inform them of pest problems and assist with appropriate management and pesticide decisions. Well-informed agribusiness professionals are better able to guide economically and environmentally sound pest management strategies.

What has been done

The Purdue Pest Management Program coordinates and regularly publishes the Pest&Crop Newsletter, providing current and forecasted information on crop production, weather, pesticide regulations, and opportunities for continuing education on pests and damage throughout Indiana.

Results

The Newsletter is freely available on the Web, with an email publication notification sent to over 1,000 subscribers. Through an on-line evaluation, readers indicated that the newsletter was useful (100%), timely (99%), helped them improve their pest management decision making ability (90%), saved/made them money (60%), and was considered their main source of pest information (58%).

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #9

V(A). Planned Program (Summary)

1. Name of the Planned Program

Animals and Their Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	6%		6%	
302	Nutrient Utilization in Animals	30%		30%	
303	Genetic Improvement of Animals	7%		7%	
304	Animal Genome	13%		13%	
305	Animal Physiological Processes	3%		3%	
306	Environmental Stress in Animals	3%		3%	
307	Animal Management Systems	9%		9%	
308	Improved Animal Products (Before Harvest)	8%		8%	
311	Animal Diseases	10%		10%	
312	External Parasites and Pests of Animals	1%		1%	
313	Internal Parasites in Animals	1%		1%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	1%		1%	
315	Animal Welfare/Well-Being and Protection	8%		8%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	50.0	0.0
Actual	14.6	0.0	174.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1023819	0	1245741	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1273111	0	7357333	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
244171	0	5009570	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Worked to foster leadership and economic development and facilitate strong partnerships and participation in state, regional, national, and international agencies, organizations, and groups. •Developed collaborative, multidisciplinary approaches that responded to short- and long-term educational needs and issues. •Encouraged participation inTaskforces,Review Committees,Advisory Boards, Editorial Boards, Commodity committees/boards, Invited presentations, Honors and Awards, Common Interest Groups, Professional Societies •Completed "needs assessment" for each species •Developed publications, workshops, consultations, seminars, certification programs, distance education modules, field days, and other opportunities. •Increased number of participants in life-long learning programs.

2. Brief description of the target audience

•Poultry and Livestock Producers •Farm employees •Nutritionists and consultants •Veterinarians •Small flock/herd owners •Youth •Consumers •County officials •Government Officials

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	40000	200000	10000	50000
2008	45629	162733	8762	6128

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	25	50	
2008	46	24	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational workshops and seminars offered to poultry and livestock producers

Year	Target	Actual
2008	50	144

Output #2

Output Measure

- Number of websites and publications developed

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of research projects

Year	Target	Actual
2008	50	186

Output #4

Output Measure

- Number of consultations

Year	Target	Actual
2008	25	933

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of poultry and livestock producers and professionals who increase their knowledge of up-to-date information and technologies, management practices, and value-added opportunities
2	Number of poultry and livestock producers and professionals who adopt up-to-date information and technologies.
3	Number of livestock producers adopting practices to enhance sustainability of their operations.
4	Number of livestock producers expanding their operations.
5	Number of poultry and livestock producers utilizing animal welfare assessments to enhance their management systems.
6	Number of poultry and livestock producers and professionals who increased their knowledge of environmental stewardship practices and environmental regulations.
7	Number of poultry and livestock producers adopting management practices that maximize environmental stewardship.
8	Number of poultry and livestock producers and professionals developing comprehensive nutrient management plans.
9	Number of poultry and livestock producers who enhance soil fertility and reduce soil pollution through properly applied animal waste

Outcome #1

1. Outcome Measures

Number of poultry and livestock producers and professionals who increase their knowledge of up-to-date information and technologies, management practices, and value-added opportunities

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of poultry and livestock producers and professionals who adopt up-to-date information and technologies.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	1181

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

During the winter of 2007-08 producers were faced with a short forage supply because of a drought experienced during the growing season of 2007. Producers were looking for ways to extend limited forage supplies and minimize the purchase of expensive forages.

What has been done

Using data from a previous research project, researchers designed a new project to evaluate 1, 2 and 4 hour access time/day to hay to determine how much hay could be consumed in those time frames. Three forage qualities were evaluated at the three access times. Then diets could be formulated for producers using grains and byproduct feeds to meet cow requirements.

Results

Over 1200 producers attended meetings where data from this research was shared. Based on producer feedback, many producers began limiting access time of cows to hay to extend their forage resources. For those producers that calculated a forage shortage of 15-20%, they limited hay access time to eidht hours/day which resulted in about 18% less hay disappearance, but equal dry matter intake to cows having 24 hour access. For producers that calculated a 30% or more forage shortage,t he new data were used and producers worked directly with the researchers to develop rations that would meet their cow herd needs. Limiting access time to 1,2 and 4 hour resulted in reduced intakes of 72, 50 and 21% respectfully, compared to estimated ad libitum intake.

4. Associated Knowledge Areas

KA Code	Knowledge Area
313	Internal Parasites in Animals
301	Reproductive Performance of Animals
306	Environmental Stress in Animals
307	Animal Management Systems
305	Animal Physiological Processes
312	External Parasites and Pests of Animals
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
311	Animal Diseases
308	Improved Animal Products (Before Harvest)
302	Nutrient Utilization in Animals

Outcome #3

1. Outcome Measures

Number of livestock producers adopting practices to enhance sustainability of their operations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	10	2013

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
313	Internal Parasites in Animals
305	Animal Physiological Processes
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
302	Nutrient Utilization in Animals
301	Reproductive Performance of Animals
307	Animal Management Systems
306	Environmental Stress in Animals
312	External Parasites and Pests of Animals
311	Animal Diseases
308	Improved Animal Products (Before Harvest)

Outcome #4

1. Outcome Measures

Number of livestock producers expanding their operations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	10	27

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #5

1. Outcome Measures

Number of poultry and livestock producers utilizing animal welfare assessments to enhance their management systems.

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Number of poultry and livestock producers and professionals who increased their knowledge of environmental stewardship practices and environmental regulations.

Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Number of poultry and livestock producers adopting management practices that maximize environmental stewardship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	275

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area

302	Nutrient Utilization in Animals
307	Animal Management Systems

Outcome #8

1. Outcome Measures

Number of poultry and livestock producers and professionals developing comprehensive nutrient management plans.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
302	Nutrient Utilization in Animals

Outcome #9

1. Outcome Measures

Number of poultry and livestock producers who enhance soil fertility and reduce soil pollution through properly applied animal waste

Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #10

V(A). Planned Program (Summary)

1. Name of the Planned Program

Economic and Community Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	80%		80%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	3%		3%	
805	Community Institutions, Health, and Social Services	17%		17%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	2.0	0.0
Actual	2.3	0.0	6.4	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
463032	0	158126	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
964872	0	544341	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
49230	0	147522	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conducted Workshops •Prepared Extension publications •Conducted research •Developed Websites •Conducted IP Video Programs •One-on-One Consultations •Collaborated with other agencies

2. Brief description of the target audience

•Local elected officials •Staff and volunteers of nonprofits/NGOs •General Citizens

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	10500	55000	5500	30000
2008	71391	369357	10273	35734

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	6	0	
2008	0	0	103

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- number of workshops conducted

Year	Target	Actual
2008	12	836

Output #2

Output Measure

- number of research projects

Year	Target	Actual
2008	3	6

Output #3

Output Measure

- number of publications

Year	Target	Actual
2008	6	103

Output #4

Output Measure

- number of collaborations with other agencies

Year	Target	Actual
2008	20	1115

Output #5

Output Measure

- number of IP-video programs

Year	Target	Actual
2008	4	234

Output #6

Output Measure

- number of one-on-one consultations

Year	Target	Actual
2008	36	3145

Output #7

Output Measure

- number of web sites developed

Year	Target	Actual
2008	3	14

Output #8

Output Measure

- Number of grants submitted for funding of community service projects

Year	Target	Actual
2008	{No Data Entered}	74

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of communities that increase knowledge of how to identify and address critical issues for citizens
2	Number of communities engaged in issue identification and action planning
3	Number of communities who improve their capacity to identify and address critical issues that impact the lives of its citizens
4	Number of communities increasing knowledge related to creating sustainable and competitive local economic development systems
5	Number of communities creating more sustainable and competitive local economic development systems.
6	number of participants who are building their community leadership skills and becoming more active in community problem-solving.
7	number of participants becoming more active in community problem-solving efforts
8	Dollar value of grants obtained as a result of participation in grant writing program

Outcome #1

1. Outcome Measures

Number of communities that increase knowledge of how to identify and address critical issues for citizens

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	325

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Most communities lack the 'civic space' in which to frame issues and identity ways to address them. Extension provides that civic space acting as a neutral convener, providing the facilitation needed to engage stakeholders, and serving as an impartial source of research-based information to assist the community in making better-informed decisions.

What has been done

Extension has been involved in 325 communities helping them build their capacity to identify and address critical issues. Responding to the need for programming related to local government finance, three state-wide sessions were delivered on the topic. Over 700 local government officials attended these programs.

Results

The following are some of the impacts and results from the programming related to this issue. In the local government finance program 100% of participants indicated that the information from the session helped them identify important community issues related to local government finance and 91% indicated that their new knowledge would have an impact on the fiscal well-being of their community.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services
803	Sociological and Technological Change Affecting Individuals, Families and Communities

Outcome #2

1. Outcome Measures

Number of communities engaged in issue identification and action planning

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	42

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families and Communities
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

Outcome #3

1. Outcome Measures

Number of communities who improve their capacity to identify and address critical issues that impact the lives of its citizens

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	12	367

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families and Communities
805	Community Institutions, Health, and Social Services

Outcome #4

1. Outcome Measures

Number of communities increasing knowledge related to creating sustainable and competitive local economic development systems

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Number of communities creating more sustainable and competitive local economic development systems.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	12	51

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services
803	Sociological and Technological Change Affecting Individuals, Families and Communities
608	Community Resource Planning and Development

Outcome #6

1. Outcome Measures

number of participants who are building their community leadership skills and becoming more active in community problem-solving.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	9466

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families and Communities
805	Community Institutions, Health, and Social Services
608	Community Resource Planning and Development

Outcome #7

1. Outcome Measures

number of participants becoming more active in community problem-solving efforts

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2200	8003

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services
803	Sociological and Technological Change Affecting Individuals, Families and Communities
608	Community Resource Planning and Development

Outcome #8

1. Outcome Measures

Dollar value of grants obtained as a result of participation in grant writing program

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	797851

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small nonprofits are the backbone of many local communities and most lack the capacity to be effective in writing grants for much-needed resources to support their important work in their communities.

What has been done

This statewide program pairs campus-based specialists with county-based Extension professionals to offer the 16-hour program. Several professional organizations are able to use the program for Continuing Education Credits.

Results

In the 2007-2008 programming year, participants developed grant proposals that resulted in nearly $800,000 in grant dollars that went directly to their local communities to support programmatic and capital needs

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}