

# 2007 North Dakota State University Combined Research and Extension Plan of Work

## Brief Summary about Plan of Work

The NDSU Extension Service and the North Dakota Agricultural Experiment Station are integral units of North Dakota State University. The main campus is located at Fargo, North Dakota. The extension service and experiment station serve the citizens of the state through the main campus as well as 53 extension offices located in 52 counties and one American Indian reservation, seven research extension centers located across the state, and three additional area extension offices.

The purpose of the NDSU Extension Service is to create learning partnerships that help adults and youth enhance their lives and communities. Extension programs address issues and opportunities in the areas of agriculture and natural resources; 4-H youth development; family and consumer sciences; and community, leadership and economic development. Emerging areas of concern are increased pressure on natural resources, natural disasters, bioterrorism and foreign animal diseases, rural community decline, population shifts, and local leadership.

The mission of the North Dakota Agricultural Experiment Station is to develop and disseminate technology important to the production and utilization of food, feed, fiber and fuel from crop and livestock enterprises. The research must provide for an enhancement of the quality of life, sustainability of production, and protection of the environment. Present goals are research and development of new technologies for the production and management of new and emerging crops; collaboration with four states to improve livestock nutrition; investigation of possible benefits of carbon sequestration; developing sustainable production strategies for western North Dakota; and developing strategies to control invasive species.

Agriculture is a critical component to the state's economy. Food/fiber production accounts for more than \$4.0 billion annually. Crop production accounts for about 70% of total farm revenues. North Dakota is first in the national in the production of eleven crops. Livestock production is centered on beef, dairy, swine and sheep.

Future directions include developing new and more competitive crop products, and new uses for diverse crops and novel plant species; developing new products and new uses for animals; reducing the risks of local and global climatic change on food, fiber and fuel production; providing the information and knowledge needed to further improve environmental stewardship; improving the economic return to agricultural producers; strengthening our communities and families; and ensuring improved food safety and health through agricultural and food systems.

## Estimated number of professional FTEs/SYs to be budgeted for this plan.

Year	Extension		Research	
	1862	1890	1862	1890
2007	175.0	0.0	454.0	0.0
2008	175.0	0.0	454.0	0.0
2009	175.0	0.0	454.0	0.0
2010	175.0	0.0	454.0	0.0
2011	175.0	0.0	454.0	0.0

## Merit Review Process

The merit review process that will be employed during the 5-Year Plan of Work cycle

- Internal University Panel
- External University Panel
- Combined External and Internal University Panel
- Expert Peer Review

## Brief explanation

Extension program leaders from North Dakota, South Dakota, Nebraska and Kansas meet to develop joint program

opportunities for these four states. They exchange ideas on plans of work in agriculture and natural resources, family and consumer science, 4-H youth development, and community resource development in an effort to increase the effectiveness of programs in their states; and programs impacting all four states have been developed as a result of these regular planning meetings. In addition, program leaders from the entire North Central Region meet twice a year to exchange ideas on plans of work for the whole region. Research programs are subject to four different types of scientific peer review. These reviews occur prior to, during and at the conclusion of each research project. First, research faculty who participate in multi-state research projects receive a critical review of their contributing project from fellow committee members, the administrative adviser and the North Central Multi-State Research Committee. Second, most faculty augment multi-state research funding with competitive grants. These grants are awarded on the basis of scientific merit and afford an opportunity for external peer review. Third, each research faculty member with the North Dakota Agricultural Experiment Station is required to have a station project that is reviewed for scientific merit by a Project Review Committee that is comprised of one faculty member from each discipline. Finally, all research is peer reviewed, either internally or externally, prior to publication.

### **Evaluation of Multis & Joint Activities**

#### **1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?**

The State Board of Agricultural Research and Education (SBARE), county advisory councils, focus groups and our own extension staff identified the issues addressed in most planned program activities. The targeted audiences for these programs were inclusive of all people with a vested interest in the issue. Many programs are on-going or multiple years in length. However, specific impacts were noted where applicable. Most of these activities resulted in time efficiencies for the extension educator, and they provided a complete educational experience for the end user.

#### **2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?**

A major under-served and under-represented audience in North Dakota is Native Americans, and increased emphasis is being given to work more closely with this group, especially those living on the four American Indian reservations in the state. Our Fort Berthold office is staffed with two full-time extension agents (one in agriculture and one in 4-H youth development, along with Family Nutrition Program (FNP), and Expanded Food and Nutrition Education Program (EFNEP) staff. Our Sioux County office is staffed with a full-time agent in family and consumer sciences and shares an agricultural agent with an adjoining county. Sioux County, too, has FNP and EFNEP staff. The other two reservations are served by the extension agents in the county in which the reservation lies. Both of these extension offices have specific programs directed towards Native American audiences. Extension programs include expanded educational efforts with Native American farmers both in crop and livestock production as well as targeted youth programming, and family and nutrition programming. Two reservations are involved with NDSU livestock specialists working with their cattle producers on range management. An NDSU irrigation specialist is working with the 1994 institutions on programs involved with utilization of native plants, plant diversity and gardens for self-sufficiency. The NDSU Extension Service participates in annual meetings with the reservations to discuss how USDA services can better meet the needs of the American Indian audiences living on the reservations. Many nutrition programs focus on both Native American and low-income families. These programs provide education on selecting and preparing nutritious meals on a limited budget. Diabetes is a major problem with the state's Native Americans, so a planned program focuses on the reduction of the incidence of diabetes through diet and exercise. A major youth program on one reservation focuses on community gardening to improve food resources, increase knowledge about food choices, and promote health eating by including more fruits and vegetables in the diet. This program is supported by resources from other community agencies, including resources from the Three Affiliated Tribes at Fort Berthold and the National Gardening Association. Another program on the same reservation is helping youth in a 4-H lamb project.

#### **3. How will the planned programs describe the expected outcomes and impacts?**

The planned programs submitted have specific outcomes that will occur over a period of five years. In some programs, outcomes and impacts will occur in the first year but many impacts will occur throughout the five-year period and beyond. Under each planned program, specific progress toward the outcomes and impacts will be documented.

#### **4. How will the planned programs result in improved program effectiveness and/or efficiency?**

At North Dakota State University, research and extension programs have a historic and strong connection that increases the effectiveness of both entities. In most programs, the results of extension education and demonstration activities inform the research community on clientele needs. Specific examples of the effectiveness and/or efficiency of these programs are described in the Planned Programs section of this Plan of Work.

## Stakeholder Input

### 1. Actions taken to seek stakeholder input that encourages their participation (Check all that apply)

- 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
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey specifically with non-traditional groups

#### Brief explanation.

Building linkages with the public enables us to discover information about community/county/district/state assets and needs. Various methods for stakeholder input are utilized on an on-going basis. Input from stakeholders, the general public and from targeted audiences is used to develop our five-year plan of work and to make adjustments to the plan based on crisis situations that may develop in the state, e.g. drought, flood, insect infestations, plant diseases, high-risk issues of youth, food borne illnesses, security issues. Using several methods to collect data ensure that high priority issues are identified, people that have a self-interest in the issue are brought to the planning meetings, and an educational design is developed to address the issue using a variety of delivery methods.

### 2(A). A brief statement of the process that will be 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
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

#### Brief explanation.

The State Board for Agricultural Research and Education (SBARE) is charged with determining the causes of any adverse economic impacts on crops and livestock produced in this state; developing ongoing strategies for the provision of research solutions to negate adverse economic impacts on crops and livestock produced in this state; developing ongoing strategies for the dissemination of research information through the extension service; annually evaluating the results of research and extension activities and expenditures; and reporting the findings to the North Dakota Legislative Council and the State Board of Higher Education. SBARE meets frequently during the fiscal year and attendance often includes department chairs from the College of Agriculture, Food Systems and Natural Resources, and research extension center directors. The meetings focus on assessing current programs, and identifying issues and needs for new programs. The purpose of SBARE is to determine how experiment station and extension service budget dollars are allocated for programming. Individual citizens and commodity group representatives provide direct input.

Extension's Citizen Support Group for Nutrition, Youth and Family Science meets quarterly. The membership of this group is based on the following criteria: state geographic representation, diversity, content expertise and leadership roles. The role of this group is to identify emerging areas of research and educational program needs for North Dakota individuals and families; and to disseminate and promote information focusing on cutting-edge research, recent initiatives, and extension programs in the areas of nutrition and health, family financial management, family living and parenting, policy education, leadership and community development, and youth development.

County commissioners actively participate in county extension program reviews. The county extension budgeting process also results in strong engagement from county government. This arrangement helps assure that extension programs are grass-roots driven and focus on local issues and needs.

The seven research extension centers (RECs) hold winter meetings with their citizen advisory boards that focus on issue identification for both research and extension programming. REC staff not only use this input to set program direction for the center but also convey it to main station researchers and to SBARE.

In 1992, the North Dakota Department of Human Services and NDSU Extension Service were mandated by the North Dakota

state legislature to form a statewide Family Life Education Committee. The purpose of this committee is to provide guidance for the parenting education needs and support of individuals at all points within the family life cycle. The committee meets six times a year to identify issues, plan, implement and evaluate parenting education programs.

**2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups 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

**Brief explanation**

{NO DATA ENTERED}

**3. A statement of how the input will be considered**

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

**Brief explanation.**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Economics of Crop Production

**2. Program knowledge areas**

- 602 Business Management, Finance, and Taxation 25 %
- 601 Economics of Agricultural Production and Farm Management 25 %
- 603 Market Economics 25 %
- 604 Marketing and Distribution Practices 25 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Crop net returns are vital to producers and the North Dakota economy. Crop producers are attempting to improve profitability by examining management choices that work best with the government farm program. Considerable variability exists among producers in their level of knowledge.

**6. Situation and priorities**

Crop net returns are vital to producers and the North Dakota economy. Crop producers are attempting to improve profitability by examining management choices that work best with the government farm program. Considerable variability exists among producers in their level of knowledge. Priorities are enterprise alternatives; land and machinery economics; crop insurance; financial record keeping; income tax management; marketing tools and strategies; and marketing clubs.

**7. Assumptions made for the Program**

Crop production will be the major agricultural sector in North Dakota. Management choices that work best with the government farm program will be key to net returns of producers.

**8. Ultimate goal(s) of this Program**

Producers are managing risks more effectively.  
Producers are employing more effective management practices.  
Farms are becoming more profitable.

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	9.0	0.0	0.0	0.0
2008	9.0	0.0	0.0	0.0
2009	9.0	0.0	0.0	0.0
2010	9.0	0.0	0.0	0.0
2011	9.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

- Identify emerging issue.
- Provide enterprise budgets, resource use alternatives, crop insurance options, marketing strategies and other resource material reflecting best management practices.
- Evaluate effectiveness of alternative management practices.
- Develop presentation materials.
- Offer in-service education, presentations and workshops.

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

- Owners, managers and employees of farm operations
- Marketing club members and facilitators
- Agribusiness and government agency personnel

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	5000	500000	0	0
2008	5000	500000	0	0
2009	5000	500000	0	0
2010	5000	500000	0	0
2011	5000	500000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of producers and others attending workshops, marketing clubs and other events.

**Outcome Type:** Short

2007 Target: 5000

2008 Target: 5000

2009 Target: 5000

2010 Target: 5000

2011 Target: 5000

**Outcome Text**

Number of participants demonstrating an increase in subject knowledge and skills.

**Outcome Type:** Short

2007 Target: 2500

2008 Target: 2500

2009 Target: 2500

2010 Target: 2500

2011 Target: 2500

**Outcome Text**

Evidence of producers employing enterprise budgets, using computerized decision-making tools, writing marketing plans and adopting recommended management tools.

**Outcome Type:** Medium

2007 Target: 15000  
2008 Target: 15000  
2009 Target: 15000  
2010 Target: 15000  
2011 Target: 15000

**Outcome Text**

Number of marketing clubs in the state.

**Outcome Type:** Medium

2007 Target: 50  
2008 Target: 50  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

Evidence of producers having a more productive working relationship with agriculture service personnel.

**Outcome Type:** Medium

2007 Target: 10000  
2008 Target: 10000  
2009 Target: 10000  
2010 Target: 10000  
2011 Target: 10000

**Outcome Text**

Evidence of producers implementing activities indicated by the management tools.

**Outcome Type:** Long

2007 Target: 7500  
2008 Target: 7500  
2009 Target: 7500  
2010 Target: 7500  
2011 Target: 7500

**Outcome Text**

Evidence of benefits from marketing club participation and best management practice implementation.

**Outcome Type:** Long

2007 Target: 90000000  
2008 Target: 90000000  
2009 Target: 90000000  
2010 Target: 90000000  
2011 Target: 90000000

**Outcome Text**

Estimated value of adopted best management practices to the individual and to the state.



**Outcome Type:** Long

2007 Target: 90000000

2008 Target: 90000000

2009 Target: 90000000

2010 Target: 90000000

2011 Target: 90000000

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Competing Programatic Challenges
- Other

**Description**

{NO DATA ENTERED}

**21. Evaluation studies planned**

- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Energy in Crop Agriculture

**2. Program knowledge areas**

- 205 Plant Management Systems 50 %
- 402 Engineering Systems and Equipment 35 %
- 404 Instrumentation and Control Systems 15 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Agriculture is a large user and potential producer of energy. Since the 1970s, agriculture has made progress in reducing energy use and supporting industries that have the potential to produce energy from agricultural products, but more progress is needed.

**6. Situation and priorities**

Agriculture is a large user and potential producer of energy. Since the 1970s, agriculture has made progress in reducing energy use, and supporting industries that have the potential to produce energy from agricultural products, but more progress is needed. Technologies to reduce fertilizer nitrogen use and fuel consumption increase the viability of developing bioenergy from grains, oilseeds, root crops and forage crops.

**7. Assumptions made for the Program**

Price of N and pesticides will continue to increase.

Fossil fuel prices will continue to increase.

Present crops will be grown but some oilseeds and corn will be converted to alternative fuels.

**8. Ultimate goal(s) of this Program**

Fuel use minimized and reduced 25% or more.

Alternative fuel use increases.

Production of alternative fuels increases and energy producing crops increase in statewide production.

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	10.0	0.0	0.0	0.0
2008	10.0	0.0	0.0	0.0
2009	10.0	0.0	0.0	0.0
2010	10.0	0.0	0.0	0.0
2011	10.0	0.0	0.0	0.0

## Outputs for the Program

### 13. Activity (What will be done?)

Develop presentation materials and develop resource materials

Develop and plan workshops, demonstrations and meetings

Transcribe scientific research into useable resources

Continuing education demonstrations - fuel use, tillage and N use

Cooperate with NDSU Research Extension Centers - conduct rate N calibrations and tillage fuel use studies

### 14. Type(s) of methods will be used to reach direct and indirect contacts

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

### 15. Description of targeted audience

Extension staff

Crop consultants

Agricultural industry personnel

Agricultural financial people

Government workers

### 16. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	500	2000	0	0
2008	1000	4500	0	0
2009	2500	6000	0	0
2010	3000	8000	0	0
2011	3000	10000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of farmers gaining knowledge on new tillage options

**Outcome Type:** Short

2007 Target: 150

2008 Target: 250

2009 Target: 500

2010 Target: 500

2011 Target: 1000

**Outcome Text**

Number of farmers gaining knowledge of energy alternatives

**Outcome Type:** Short

2007 Target: 250

2008 Target: 500

2009 Target: 750

2010 Target: 1000

2011 Target: 2500

**Outcome Text**

Number of farmers gaining knowledge of energy potential and availability of different crops

**Outcome Type:** Short

2007 Target: 250  
2008 Target: 500  
2009 Target: 750  
2010 Target: 1000  
2011 Target: 2500

**Outcome Text**

Number of farmers that changed their tillage habits to no-till

**Outcome Type:** Medium

2007 Target: 150  
2008 Target: 300  
2009 Target: 500  
2010 Target: 1000  
2011 Target: 1500

**Outcome Text**

Number of farmers that make greater use of soil testing for fertilizer needs

**Outcome Type:** Medium

2007 Target: 300  
2008 Target: 750  
2009 Target: 1500  
2010 Target: 3500  
2011 Target: 5000

**Outcome Text**

Number of acres under reduced tillage

**Outcome Type:** Medium

2007 Target: 5000000  
2008 Target: 7000000  
2009 Target: 10000000  
2010 Target: 15000000  
2011 Target: 15000000

**Outcome Text**

Number of farmers using reduced energy technologies

**Outcome Type:** Medium

2007 Target: 250  
2008 Target: 500  
2009 Target: 750  
2010 Target: 1500  
2011 Target: 3000

**20. External factors which may affect outcomes**

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

**Description**

World oil supplies will decrease.

Alternative energy sources such as ethanol and biodiesel must be available in good supply.

Government programs to assist in economic promotion of alternative energy sources.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

Changed practices in tillage and N fertility management on farms and ranches in North Dakota.

By taking survey of changed acres to reduced- and zero-till farm lands, and the changes in cropping systems and rotations in North Dakota over the next five years.

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

### 1. Name of the Planned Program

Plant Breeding

### 2. Program knowledge areas

- 211 Insects, Mites, and Other Arthropods Affecting Plants 5 %
- 203 Plant Biological Efficiency and Abiotic Stresses Affecting Plants 25 %
- 212 Pathogens and Nematodes Affecting Plants 40 %
- 202 Plant Genetic Resources 25 %
- 204 Plant Product Quality and Utility (Preharvest) 5 %

### 3. Program existence

- Intermediate (One to five years)

### 4. Program duration

- Long-Term (More than five years)

### 5. Brief summary about Planned Program

The combination of environmental factors such as soil type, weather, pests and cultural practices are unique to North Dakota and requires the organization of breeding programs to deal with production problems while improving crop quality. Crop production is hampered each year by pathogens and insect pests. Genetic resistance in the host plant is the most cost-effective and environmentally safe means of reducing losses.

### 6. Situation and priorities

The combination of environmental factors such as soil type, weather, pests and cultural practices are unique to North Dakota and requires the organization of breeding programs to deal with production problems while improving crop quality. Crop production is hampered each year by pathogens and insect pests. Genetic resistance in the host plant is the most cost-effective and environmentally safe means of reducing losses. The priorities are to develop and release improved cultivars, germplasm lines and inbreds acceptable to producers in North Dakota and processors. Basic and applied research is conducted to provide information that will facilitate achievement of our breeding goals, improve cultural practices and enhance our understanding of the crops we breed.

### 7. Assumptions made for the Program

Funding will remain available to do this research. Crops will continued to be attacked each year by pathogens and insect pests.

### 8. Ultimate goal(s) of this Program

Adding value to our crops through our breeding efforts  
Enhanced public awareness of our germplasm lines, cultivars and inbreds

### 9. Scope of Program

- In-State Research

### Inputs for the Program

#### 10. Expending formula funds or state-matching funds

- Yes

#### 11. Expending other than formula funds or state-matching funds

- No

#### 12. Expending amount of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.0	13.0	0.0
2008	0.0	0.0	13.0	0.0
2009	0.0	0.0	13.0	0.0
2010	0.0	0.0	13.0	0.0
2011	0.0	0.0	13.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

- Develop improved cultivars and inbreds
- Evaluate elite lines from other breeding programs
- Develop resource material
- Provide presentations and workshops
- Identify emerging issues
- Evaluate effectiveness of activities

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

- Producers
- Processors that utilize the grain
- Crop consultants
- Local and regional commodity groups
- Personnel in agribusiness/agrifinance
- Personnel working for government agencies

**16. Standard output measures**

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



	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	3
2008	3
2009	3
2010	3
2011	3

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Changes in breeding priorities that match needs

**Outcome Type:** Short

2007 Target: 3

2008 Target: 3

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

Addition of new breeding programs or addition of responsibilities to existing programs

**Outcome Type:** Short

2007 Target: 1  
2008 Target: 1  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Number of teams working together to develop genetic solutions

**Outcome Type:** Short

2007 Target: 7  
2008 Target: 7  
2009 Target: 7  
2010 Target: 7  
2011 Target: 7

**Outcome Text**

Number of individuals growing improved cultivars

**Outcome Type:** Medium

2007 Target: 14500  
2008 Target: 14500  
2009 Target: 15000  
2010 Target: 15000  
2011 Target: 15000

**Outcome Text**

Number of other breeding programs using NDSU developed germplasm

**Outcome Type:** Medium

2007 Target: 15  
2008 Target: 15  
2009 Target: 15  
2010 Target: 20  
2011 Target: 20

**Outcome Text**

Estimated dollar value new cultivars bring to North Dakota

**Outcome Type:** Long

2007 Target: 35000000  
2008 Target: 35000000  
2009 Target: 35000000  
2010 Target: 35000000  
2011 Target: 35000000

**Outcome Text**

Longevity of continued use of cultivars by producers and processors

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Percent of acreage that our cultivar releases occupy for each of the crops we breed

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 45  
2011 Target: 50

**20. External factors which may affect outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations

**Description**

Decreased funding, changing priorities, farmer/processor attitudes, natural disasters, economic conditions, crop diseases, and coordination and cooperation with government entities

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Weed Science

**2. Program knowledge areas**

- 216 Integrated Pest Management Systems 30 %
- 213 Weeds Affecting Plants 50 %
- 215 Biological Control of Pests Affecting Plants 20 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Weeds reduce the economic return from crop and rangeland production, reduce aesthetics of infested areas, and cause detrimental effects on human and animal health. Herbicides have been and will continue to be a widely used tool for weed control; however, weed resistance to herbicides, pressure to minimize input costs of weed control, and questions about proper stewardship of herbicide-resistant crop technology illustrate the need for further research with weed control systems.

**6. Situation and priorities**

Weeds reduce the economic return from crop and rangeland production, reduce aesthetics of infested areas, and cause detrimental effects on human and animal health. Herbicides have been and will continue to be a widely used tool for weed control; however, weed resistance to herbicides, pressure to minimize input costs of weed control, and questions about proper stewardship of herbicide-resistant crop technology illustrate the need for further research with weed control systems. The priority is to conduct research on control of annual and perennial weeds. Research deals primarily with chemical weed-control programs, including herbicide evaluation, antagonism investigation, application technology, adjuvant science, and herbicide-resistant weeds. Research on invasive perennial weeds relies on integration of biological, chemical and cultural methods. Research on weed biology improves the understanding of weed ecology and enhances weed-management strategies.

**7. Assumptions made for the Program**

Funding will remain available to do this research. Weeds will continue to reduce economic return from crop and rangeland production, and reduce aesthetics of infested areas, and cause detrimental effects on human and animal health.

**8. Ultimate goal(s) of this Program**

Adding value to our crops through our research efforts  
Enhanced public awareness of our research and recommendations

**9. Scope of Program**

- In-State Research

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.0	4.0	0.0
2008	0.0	0.0	4.0	0.0
2009	0.0	0.0	4.0	0.0
2010	0.0	0.0	4.0	0.0
2011	0.0	0.0	4.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

1. Evaluate new herbicides, herbicide formulations, and new adjuvants 2. Determine antagonisms between herbicides 3. Determine better methods for applying herbicides 4. Determine the prevalence of herbicide resistant weeds 5. Provide presentations and workshops

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

1. Producers 2. Crop consultants 3. Extension state specialists and county educators 4. Commodity groups 5. Personnel in agribusiness and agrifinance 6. Personnel working for government agencies

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	5
2008	5
2009	5
2010	5
2011	5

**18. Output measures**

**Output Text**

Changes in weed science research priorities that match needs

2007 Target: 1  
 2008 Target: 1  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

Yearly updating of Weed Control Guide to reflect new herbicides and knowledge gained through research

2007 Target: 1  
 2008 Target: 1  
 2009 Target: 1  
 2010 Target: 1  
 2011 Target: 1

**Output Text**

Number of teams working together to develop solutions

2007 Target: 3  
 2008 Target: 3  
 2009 Target: 3  
 2010 Target: 3  
 2011 Target: 3

**Output Text**

Development of enhanced weed-management strategies that incorporate knowledge gained on the biology of weeds

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 1  
 2010 Target: 1  
 2011 Target: 0

**Output Text**

Improved control of invasive perennial weeds using integrated methods

2007 Target: 0  
2008 Target: 0  
2009 Target: 1  
2010 Target: 1  
2011 Target: 0

**Output Text**

Delayed evolution of herbicide-resistant weeds

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

Estimated dollar value weed-control brings to North Dakota

2007 Target: 100000000  
2008 Target: 100000000  
2009 Target: 100000000  
2010 Target: 100000000  
2011 Target: 100000000

**Output Text**

Percent of producers that utilize our recommendations

2007 Target: 90  
2008 Target: 90  
2009 Target: 90  
2010 Target: 90  
2011 Target: 90

**Output Text**

Longevity of continued use of our recommendations for weed control by producers

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

{NO DATA ENTERED}

**Outcome Type:**

2007 Target: {NO DATA ENTERED}

2008 Target: {NO DATA ENTERED}

2009 Target: {NO DATA ENTERED}

2010 Target: {NO DATA ENTERED}

2011 Target: {NO DATA ENTERED}

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Government Regulations

**Description**

Decreased funding, changing priorities, farmer/consumer attitudes, herbicide-resistant crops and weeds, economic conditions, and coordination and cooperation with government entities.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}



**1. Name of the Planned Program**

Soil Science

**2. Program knowledge areas**

- 205 Plant Management Systems 40 %
- 102 Soil, Plant, Water, Nutrient Relationships 60 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Nitrogen costs are historically high, and a number of surface and groundwaters in North Dakota are impaired with nitrates from over-application in crop land. Re-evaluation of N management and crop needs may result in lower N rates required to maintain yield or sustain profit, while less N is lost to the environment.

**6. Situation and priorities**

Nitrogen costs are historically high, and a number of surface and groundwaters in North Dakota are impaired with nitrates from over-application in crop land. Reevaluation of N management and crop needs may result in lower N rates required to maintain yield or sustain profit, while less N is lost to the environment. The goal is to evaluate N use rates in a variety of crops, investigate better use of manures and residues, include the N contribution of previous crops and residues in N fertilizer recommendations, and investigate the interaction of N with other nutrients and varieties. Another priority is to document current nitrate levels in North Dakota ground and surface waters.

**7. Assumptions made for the Program**

Funding will remain available to do this research. Nitrogen costs will remain high and nitrates will continue to be a concern in surface and groundwaters in North Dakota.

**8. Ultimate goal(s) of this Program**

Grower profit increases  
Quality of ground and surface water is enhanced  
Alternative sources of N adopted by growers  
Wildlife habitat quality improved

**9. Scope of Program**

- In-State Extension
- In-State Research
- Integrated Research and Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	1.0	0.0	3.0	0.0
2008	1.0	0.0	3.0	0.0
2009	1.0	0.0	3.0	0.0
2010	1.0	0.0	3.0	0.0
2011	1.0	0.0	3.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

N rate calibration research projects  
 Update producer-oriented resource materials to reflect research results of N rate studies  
 Present research results at workshops, field days and conferences  
 Evaluate nitrate levels in waterways

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Growers  
 Soil testing laboratories  
 Government agencies  
 Federal land managers  
 Consultants, agricultural commodity staff

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	4000	30000	0	0
2008	4000	30000	0	0
2009	5000	30000	0	0
2010	5000	30000	0	0
2011	5000	30000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	2
2008	5
2009	6
2010	6
2011	6

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of individuals receiving individual assistance

**Outcome Type:** Short

2007 Target: 2000

2008 Target: 3000

2009 Target: 4000

2010 Target: 4000

2011 Target: 4000

**Outcome Text**

Number of individuals decreasing N use

**Outcome Type:** Short

2007 Target: 1000

2008 Target: 2000

2009 Target: 2000

2010 Target: 3000

2011 Target: 4000

**Outcome Text**

Number of individuals using alternative N sources

**Outcome Type:** Short

2007 Target: 400  
2008 Target: 800  
2009 Target: 1000  
2010 Target: 1000  
2011 Target: 1000

**Outcome Text**

Number of individuals implementing recommended action or practice

**Outcome Type:** Medium

2007 Target: 1000  
2008 Target: 2000  
2009 Target: 2000  
2010 Target: 3000  
2011 Target: 4000

**Outcome Text**

Continued decline of N in ground and surface water

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Estimated dollar value of adopted best management practices (\$)

**Outcome Type:** Long

2007 Target: 4000000  
2008 Target: 12000000  
2009 Target: 20000000  
2010 Target: 32000000  
2011 Target: 48000000

**Outcome Text**

Less commercial N is used (%)

**Outcome Type:** Long

2007 Target: 2  
2008 Target: 5  
2009 Target: 8  
2010 Target: 12  
2011 Target: 15

**Outcome Text**

Amount of N in ground and surface water is reduced

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**20. External factors which may affect outcomes**

- Public Policy changes
- Government Regulations

**Description**

N costs will remain high for some time; adoption of new N sources and rates; availability of funding for research; resistance of fertilizer industry to reduced sales; N sources in water not from agriculture.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

Extension educator surveys

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Biofuels

**2. Program knowledge areas**

- 403 Waste Disposal, Recycling, and Reuse 100 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Petroleum supplies more than 95 percent of our transportation fuel needs. Increasing national and global demand for a limited petroleum supply has contributed to large increases in fuel costs. Biobased transportation fuels will strengthen rural economies by adding value to crop residues while decreasing agriculture-related fuel costs. Additional benefits include decreased national reliance on foreign energy sources and the environmental benefits of reduced greenhouse gas emissions.

**6. Situation and priorities**

Petroleum supplies more than 95 percent of our transportation fuel needs. Increasing national and global demand for a limited petroleum supply has contributed to large increases in fuel costs. Biobased transportation fuels will strengthen rural economies by adding value to crop residues while decreasing agriculture-related fuel costs. Additional benefits include decreased national reliance on foreign energy sources and the environment benefits of reduced greenhouse gas emissions. Priorities include making significant improvements in biomass collection, storage, transportation, pre-processing and conversion. Additional challenges are in the areas of process economics, economic policy, agronomics, crop development, product quality and marketing.

**7. Assumptions made for the Program**

Funding will remain available to do this research. Petroleum supplies will be limited due to increasing national and global demand.

**8. Ultimate goal(s) of this Program**

Biofuels research is viewed as an area of strength for NDSU. Quality of biofuels research at NDSU is recognized by funding agencies and peer institutions. Strong institutional culture of collaborative, interdisciplinary research in biofuels.

**9. Scope of Program**

- In-State Research

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.0	2.0	0.0
2008	0.0	0.0	2.0	0.0
2009	0.0	0.0	2.0	0.0
2010	0.0	0.0	2.0	0.0
2011	0.0	0.0	2.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Identify research needs critical to North Dakota.  
 Identify NDSU faculty, industries and other universities for collaboration.  
 Expand research infrastructure and faculty expertise.  
 Present results through publications and conference presentations.  
 Educate through teaching and extension programming.

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Farmers  
 Policymakers  
 Biomass processors  
 Equipment manufacturers  
 Peer researchers  
 Students

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	2
2008	3
2009	4
2010	4
2011	4

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of faculty collaborations working on biofuels projects.

**Outcome Type:** Short

2007 Target: 2

2008 Target: 2

2009 Target: 3

2010 Target: 3

2011 Target: 3

**Outcome Text**

Number of proposals submitted for biofuels projects.

**Outcome Type:** Short

2007 Target: 2

2008 Target: 3

2009 Target: 4

2010 Target: 4

2011 Target: 5

**Outcome Text**

Number of graduate students working on biofuels projects.



**Outcome Type:** Medium

2007 Target: 2  
2008 Target: 3  
2009 Target: 4  
2010 Target: 4  
2011 Target: 5

**Outcome Text**

Number of biofuels-related papers published by NDSU faculty.

**Outcome Type:** Medium

2007 Target: 2  
2008 Target: 3  
2009 Target: 4  
2010 Target: 4  
2011 Target: 4

**Outcome Text**

Number of biofuels research proposals submitted.

**Outcome Type:** Medium

2007 Target: 2  
2008 Target: 3  
2009 Target: 4  
2010 Target: 4  
2011 Target: 5

**Outcome Text**

Grant money received for biofuels research.

**Outcome Type:** Medium

2007 Target: 100000  
2008 Target: 250000  
2009 Target: 250000  
2010 Target: 300000  
2011 Target: 400000

**Outcome Text**

Increased demand for NDSU graduate students in academia/industry.

**Outcome Type:** Long

2007 Target: 2  
2008 Target: 2  
2009 Target: 3  
2010 Target: 4  
2011 Target: 5

**Outcome Text**

Increase in quality/quantity of student applicants in biofuels-related fields.

**Outcome Type:** Long

2007 Target: 3  
2008 Target: 4  
2009 Target: 5  
2010 Target: 5  
2011 Target: 5

**Outcome Text**

Increased funding rate for NDSU biofuels research proposals.

**Outcome Type:** Long

2007 Target: 50000  
2008 Target: 100000  
2009 Target: 100000  
2010 Target: 150000  
2011 Target: 200000

**Outcome Text**

Biobased industries seek out NDSU faculty for collaborations on biofuels projects.

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

State and federal policymakers seek out NDSU faculty input.

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**20. External factors which may affect outcomes**

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

**Description**

Research funding priorities, public opinion, cost of petroleum, conversion technology breakthroughs, development of competing energy technologies, competing land uses (agricultural and other), public recognition of global climate change, effect of climate change on agricultural productivity.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Insect Management

**2. Program knowledge areas**

- 211 Insects, Mites, and Other Arthropods Affecting Plants 55 %
- 721 Insects and Other Pests Affecting Humans 5 %
- 216 Integrated Pest Management Systems 40 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Understanding the ecology and behavior of arthropod populations to mitigate harmful impacts and to preserve ecosystem health.

**6. Situation and priorities**

Understanding the ecology and behavior of arthropod populations to mitigate harmful impacts and to preserve ecosystem health. Priorities are protecting our urban, agricultural and natural ecosystems from native and introduced insects and insect outbreaks, and developing effective and economical integrated pest management practices that are adaptive and meet social and regulatory constraints.

**7. Assumptions made for the Program**

Funding will remain available to support this program. Pests will remain an issue in agriculture and for homeowners.

**8. Ultimate goal(s) of this Program**

Increase agriculture profitability by decreasing costs and improving pest management efficacy  
Decrease health and environmental risk from insect management  
Enhanced insect diagnostic capacity

**9. Scope of Program**

- In-State Extension
- In-State Research
- Integrated Research and Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	2.0	0.0	5.0	0.0
2008	2.0	0.0	5.0	0.0
2009	2.0	0.0	5.0	0.0
2010	2.0	0.0	5.0	0.0
2011	2.0	0.0	5.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

- Assess emerging issues
- Provide insect diagnostics
- Provide bio-based pest management systems
- Meet social and regulatory needs
- Evaluate activity effectiveness

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

- Crop and animal agricultural producers
- Home owners
- Agribusiness
- Government and NGO agency personnel
- Medical professionals

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	1400	1200	0	0
2008	1400	1200	0	0
2009	1400	1200	0	0
2010	1400	1200	0	0
2011	1400	1200	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	12
2008	12
2009	12
2010	12
2011	12

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Pest alerts disseminated through various channels

**Outcome Type:** Short

- 2007 Target: 100
- 2008 Target: 100
- 2009 Target: 100
- 2010 Target: 100
- 2011 Target: 100

**Outcome Text**

Best management guides based on currently available knowledge made available

**Outcome Type:** Short

- 2007 Target: 12
- 2008 Target: 12
- 2009 Target: 12
- 2010 Target: 12
- 2011 Target: 12

**Outcome Text**

Relevant research and extension programs initiated

**Outcome Type:** Short

2007 Target: 1

2008 Target: 1

2009 Target: 1

2010 Target: 1

2011 Target: 1

**Outcome Text**

Conduct diagnostic review session with Plant Diagnostics Lab

**Outcome Type:** Short

2007 Target: 1

2008 Target: 1

2009 Target: 1

2010 Target: 1

2011 Target: 1

**Outcome Text**

Output materials made available to users

**Outcome Type:** Medium

2007 Target: 16

2008 Target: 16

2009 Target: 16

2010 Target: 16

2011 Target: 16

**Outcome Text**

Assess grower acceptance of new technologies

**Outcome Type:** Medium

2007 Target: 1

2008 Target: 1

2009 Target: 1

2010 Target: 1

2011 Target: 1

**Outcome Text**

Insect diagnostics and reporting integrated with Plant Diagnostics Lab and others

**Outcome Type:** Medium

2007 Target: 14000

2008 Target: 14000

2009 Target: 14000

2010 Target: 14000

2011 Target: 14000

**Outcome Text**

Pest management technologies that meet social and regulatory constraints

**Outcome Type:** Long

2007 Target: 1  
2008 Target: 1  
2009 Target: 1  
2010 Target: 1  
2011 Target: 1

**Outcome Text**

Valuation of best management practices

**Outcome Type:** Long

2007 Target: 2  
2008 Target: 2  
2009 Target: 2  
2010 Target: 2  
2011 Target: 2

**Outcome Text**

Estimation of adoption rate of best management practices

**Outcome Type:** Long

2007 Target: 1  
2008 Target: 1  
2009 Target: 1  
2010 Target: 1  
2011 Target: 1

**Outcome Text**

Insect diagnostic capacity meeting national needs

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**20. External factors which may affect outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Public Policy changes
- Government Regulations

**Description**

Decreased funding and personnel, social and regulatory constraints to pest management practices, economic conditions, invasive species, climate and farming practice changes.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)



**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Center for Nutrition and Pregnancy

**2. Program knowledge areas**

- 305 Animal Physiological Processes 10 %
- 302 Nutrient Utilization in Animals 40 %
- 702 Requirements and Function of Nutrients and Other Food Components 10 %
- 301 Reproductive Performance of Animals 40 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Increasing evidence suggests that fetal development plays a role in postnatal growth, development, productivity, reproductive success, and fetal survival, as well as long-term health and longevity of offspring. Improved understanding of the impacts of reproductive function, especially nutritional modulation, will result in improved livestock productivity and enhanced human health.

**6. Situation and priorities**

Increasing evidence suggests that fetal development plays a role in postnatal growth, development, productivity, reproductive success, and fetal survival, as well as long-term health and longevity of offspring. Improved understanding of the impacts of reproductive function, especially nutritional modulation, will result in improved livestock productivity and enhanced human health. Priorities are to develop nutritional strategies that promote fetal and neonatal growth and development resulting in offspring that are healthy throughout infancy, adolescence and adulthood; promote maternal health and well being; and improve quality and nutritional value of resulting food products.

**7. Assumptions made for the Program**

Funding will remain available to do this research. Long-term health and longevity of offspring will be continue to be a focus of attention for animals and humans.

**8. Ultimate goal(s) of this Program**

Improved livestock and human health  
Increased research capacity  
Increased livestock production efficiency  
Improved understanding of long-term nutritional impacts on product quality in livestock production systems

**9. Scope of Program**

- In-State Research

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other then formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.0	4.0	0.0
2008	0.0	0.0	4.0	0.0
2009	0.0	0.0	4.0	0.0
2010	0.0	0.0	4.0	0.0
2011	0.0	0.0	4.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

- Research projects
- Train students
- Teach producers
- Publish research
- Secure funding
- Develop recommendations
- Identify emerging trends and issues
- Improve methodology
- Collaborate
- Present data at meetings

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

- Students: graduate and under-graduate
- Livestock producers
- Human health professionals
- Scientific peer groups
- Policy and agency influences
- Media professionals

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	10
2008	12
2009	14
2010	14
2011	14

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Numbers of producers with enhanced knowledge from livestock programming events

**Outcome Type:** Short

2007 Target: 25

2008 Target: 30

2009 Target: 40

2010 Target: 40

2011 Target: 25

**Outcome Text**

Number of grant requests for multidisciplinary educational, extension and research collaborative activities

**Outcome Type:** Medium

2007 Target: 5  
2008 Target: 5  
2009 Target: 5  
2010 Target: 5  
2011 Target: 5

**Outcome Text**

Number of visiting scientists to the NDSU Department of Animal and Range Sciences

**Outcome Type:** Medium

2007 Target: 5  
2008 Target: 5  
2009 Target: 5  
2010 Target: 5  
2011 Target: 5

**Outcome Text**

Monitor cases of pregnancy-based metabolic diseases

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Monitor North Dakota agricultural statistics to measure pregnancy rates of North Dakota livestock operations

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**20. External factors which may affect outcomes**

- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

**Description**

Decreased funding, changing priorities, producer attitudes, economic conditions, change in focus of agencies and the institution.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Nutrition of Grazing Livestock

**2. Program knowledge areas**

- 302 Nutrient Utilization in Animals 50 %
- 121 Management of Range Resources 50 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Feed costs associated with maintaining beef cows average 66 percent of total cash costs of production. Proper nutrition of the cow herd and cost effective use of dollars spent on purchased feed inputs is critical to the success of livestock operations. Over 44 percent of North Dakota's land use is associated with rangeland, pasture land and hay land.

**6. Situation and priorities**

Feed costs associated with maintaining beef cows average 66 percent of total cash costs of production. Proper nutrition of the cow herd and cost effective use of dollars spent on purchased feed inputs is critical to the success of livestock operations. Over 44 percent of North Dakota's land use is associated with rangeland, pasture land and hay land. Pasture costs (purchase and rental) continue to increase. Proper nutrient management of grazed forages, implementation of an efficient grazing system (including timing of grazing), and stored winter forages along with supplemental feeds, can play a vital role in profitability of cow-calf producers in North Dakota.

**7. Assumptions made for the Program**

Cattle will continue to be a large part of the agricultural industry in North Dakota. Pastures will continue to be one of the economical ways to meet the nutritional needs of cattle.

**8. Ultimate goal(s) of this Program**

Improved profitability and productivity of North Dakota livestock operations  
Improved rangeland productivity and health through improved management

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	6.0	0.0	0.0	0.0
2008	6.0	0.0	0.0	0.0
2009	6.0	0.0	0.0	0.0
2010	6.0	0.0	0.0	0.0
2011	6.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

- Develop presentation materials
- Develop resource material
- Provide presentations and workshops
- Translate scientific materials into lay materials
- Identify emerging issues
- Evaluate effectiveness of activities

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

- Livestock producers
- 4-H youth
- Feed and pharmaceutical industry personnel
- Government agency personnel
- Veterinarians

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	300	750	0	0
2008	350	1000	0	0
2009	400	1500	0	0
2010	450	2000	0	0
2011	500	2500	0	0



**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of individuals receiving training and education

**Outcome Type:** Short

2007 Target: 300

2008 Target: 350

2009 Target: 400

2010 Target: 450

2011 Target: 500

**Outcome Text**

Number of individuals demonstrating increase in subject knowledge and skills

**Outcome Type:** Short

2007 Target: 200

2008 Target: 250

2009 Target: 300

2010 Target: 350

2011 Target: 400

**Outcome Text**

Number of producers implementing recommended actions or practices

**Outcome Type:** Medium

2007 Target: 25  
2008 Target: 75  
2009 Target: 125  
2010 Target: 150  
2011 Target: 200

**Outcome Text**

Number of producers participating in government cost-share programs for range conservation

**Outcome Type:** Medium

2007 Target: 25  
2008 Target: 50  
2009 Target: 75  
2010 Target: 100  
2011 Target: 125

**Outcome Text**

Estimated cost of production for North Dakota cattle ranches

**Outcome Type:** Long

2007 Target: 400  
2008 Target: 390  
2009 Target: 385  
2010 Target: 380  
2011 Target: 375

**Outcome Text**

Number of ranches implementing range management practices

**Outcome Type:** Long

2007 Target: 100  
2008 Target: 125  
2009 Target: 150  
2010 Target: 175  
2011 Target: 200

**20. External factors which may affect outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations

**Description**

Cattle production cycles and prices; changing priorities; farmer/rancher attitudes; natural disasters and environmental impacts; changing priorities of government agencies and policy makers.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Food Safety

**2. Program knowledge areas**

- 504 Home and Commercial Food Service 75 %
- 712 Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi 25 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Food safety from farm to table remains an issue of concern in the U.S. Over 5,000 deaths and 76 million cases of foodborne illness occur annually. About half the food dollar is spend on foods away from home, and more people are involved in the handling of foods.

**6. Situation and priorities**

Food safety from farm to table remains an issue of concern in the U.S. Over 5,000 deaths and 76 million cases of foodborne illness occur annually. About half the food dollar is spend on foods away from home, and more people are involved in the handling of foods. Priorities are safe food handling in the home and in the foodservice/processing sectors.

**7. Assumptions made for the Program**

Food safety will remain an issue of concern in the U.S.

**8. Ultimate goal(s) of this Program**

Foodborne illness outbreaks will decrease. Food companies will decrease recalls. Food businesses will change policies and implement HACCP.

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other then formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	7.0	0.0	0.0	0.0
2008	7.0	0.0	0.0	0.0
2009	7.0	0.0	0.0	0.0
2010	7.0	0.0	0.0	0.0
2011	7.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Implement programs for children and adults based on Fight BAC, Therymy, Produce Safety and BAC Down campaigns; USDA food preservation rules; and implement food safety programs for foodservice and processors (ServSafe, TAPS, HACCP).

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Children in school and youth program settings Teen food handlers in high school and community Adults in home settings Volunteer food handlers in community settings Professionals in foodservice and food processing environments

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	5000	400000	5000	20000
2008	5200	410000	5200	22000
2009	5400	420000	5400	24000
2010	5600	430000	5600	26000
2011	5800	440000	5800	28000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Based on post-surveys, 75 percent of children participating in handwashing classes will report intentions to wash hands properly

**Outcome Type:** Short

2007 Target: 2000

2008 Target: 2200

2009 Target: 2300

2010 Target: 2400

2011 Target: 2500

**Outcome Text**

Based on post-surveys, 50 percent of teens will report changes in food handling practices to reduce risk of foodborne illness outbreaks

**Outcome Type:** Medium

2007 Target: 1500

2008 Target: 1600

2009 Target: 1700

2010 Target: 1800

2011 Target: 1900

**Outcome Text**

Seventy-five percent of foodservice and food industry participants in ServSafe, HACCP or other food sanitation courses will pass the examination.

**Outcome Type:** Medium

2007 Target: 75  
2008 Target: 85  
2009 Target: 95  
2010 Target: 100  
2011 Target: 110

**Outcome Text**

Based on post-surveys, 50 percent of adult participants in consumer food safety classes will report intent to change one or more food handling behaviors.

**Outcome Type:** Long

2007 Target: 2000  
2008 Target: 2200  
2009 Target: 2300  
2010 Target: 2400  
2011 Target: 2500

**20. External factors which may affect outcomes**

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

**Description**

{NO DATA ENTERED}

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)
- 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

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Healthy Patterns of Eating & Physical Activity

**2. Program knowledge areas**

- 703 Nutrition Education and Behavior 75 %
- 806 Youth Development 25 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Changes in food intake and physical activity patterns in North Dakota have increased the prevalence of overweight and obesity and the risk for chronic diseases such as heart disease, type 2 diabetes and cancer.

**6. Situation and priorities**

Changes in food intake and physical activity patterns in North Dakota have increased the prevalence of overweight and obesity and the risk for chronic diseases such as heart disease, type 2 diabetes and cancer. Priorities are promoting the development/maintenance of healthy lifestyles for individuals/families within homes, worksites and communities.

**7. Assumptions made for the Program**

Overweight and obesity plus physical inactivity will continue to be a problem in North Dakota.

**8. Ultimate goal(s) of this Program**

Increase in healthy body weights  
Reduction in risk factors for development of chronic diseases  
Reduction in chronic diseases

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**



Year	Extension		Research	
	1862	1890	1862	1890
2007	8.0	0.0	0.0	0.0
2008	8.0	0.0	0.0	0.0
2009	8.0	0.0	0.0	0.0
2010	8.0	0.0	0.0	0.0
2011	8.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Identify emerging issues Translate scientific data Develop lessons and curricula Develop public campaigns Promote changes in public policy Train extension agents Develop evaluation methodology Analyze/report impacts

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Youth - schools, afterschool, 4-H Adults - homes, worksites, communities, people with chronic disease

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	7000	400000	6000	20000
2008	7200	410000	6200	22000
2009	7400	420000	6400	24000
2010	7600	430000	6600	26000
2011	7800	440000	6800	28000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Based on follow-up surveys of adult participants in walking programs, 50 percent will report increased number of steps or minutes of walking

**Outcome Type:** Short

2007 Target: 1000

2008 Target: 1200

2009 Target: 1400

2010 Target: 1600

2011 Target: 1800

**Outcome Text**

Based on follow-up surveys of adult participants in nutrition education programs, 25percent will report a change in behavior to be more consistent with current nutrition recommendations based on MyPyramid

**Outcome Type:** Medium

2007 Target: 3000

2008 Target: 3200

2009 Target: 3400

2010 Target: 3600

2011 Target: 3800

**Outcome Text**

Based on follow-up surveys of parents of children participating in nutrition education programs, 25 percent of parents will report a family behavior change to be consistent with current recommendations

**Outcome Type:** Medium

2007 Target: 2000  
2008 Target: 2200  
2009 Target: 2400  
2010 Target: 2600  
2011 Target: 2800

**Outcome Text**

Based on post-surveys of children involved in multi-session nutrition/fitness classes, 25 percent of participants will report a change in nutrition or fitness behavior to be consistent with current MyPyramid recommendations

**Outcome Type:** Long

2007 Target: 3500  
2008 Target: 3600  
2009 Target: 3700  
2010 Target: 3800  
2011 Target: 3900

**20. External factors which may affect outcomes**

- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities

**Description**

Funding priorities; economic impacts such as cost of health care; societal attitudes; policy changes; coordination and cooperation with government agencies.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)
- 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

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Livestock Waste Management

**2. Program knowledge areas**

- 133 Pollution Prevention and Mitigation 25 %
- 403 Waste Disposal, Recycling, and Reuse 50 %
- 112 Watershed Protection and Management 25 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Protecting our nation's water supply through education, research and water quality monitoring within watersheds containing livestock feedlots and grazing lands.

**6. Situation and priorities**

Protecting our nation's water supply through education, research and water quality monitoring within watersheds containing livestock feedlots and grazing lands. Areas of concern include watersheds (nutrients effecting water quality), ecosystems (elements affecting wetland, stream, and riverine function), manure nutrient utilization, animal husbandry and emerging issues.

**7. Assumptions made for the Program**

Protecting our nation's water supply will remain a top priority. Animal production will remain a significant part of North Dakota agriculture.

**8. Ultimate goal(s) of this Program**

Livestock producers will implement nutrient management practices that protect water resources, more efficiently utilize manure nutrients and successfully operate and maintain livestock manure management systems.  
Enhanced water quality in North Dakota

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other then formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	5.0	0.0	0.0	0.0
2008	5.0	0.0	0.0	0.0
2009	5.0	0.0	0.0	0.0
2010	5.0	0.0	0.0	0.0
2011	5.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

- Develop presentation materials
- Develop resource material
- Provide presentations and workshops
- Translate scientific materials into lay materials
- Identify emerging issues
- Evaluate effectiveness of activities

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 1 (News Releases)</li> </ul>

**15. Description of targeted audience**

- Owners, managers and employees of animal operations
- Agribusiness and agrifinance personnel
- Government agency personnel

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	200	200	0	0
2008	200	200	0	0
2009	200	200	0	0
2010	200	200	0	0
2011	200	200	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}
- Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of individuals requesting information

**Outcome Type:** Short

- 2007 Target: 30
- 2008 Target: 50
- 2009 Target: 75
- 2010 Target: 100
- 2011 Target: 100

**Outcome Text**

Number of individuals demonstrating increase in subject knowledge and skills

**Outcome Type:** Short

- 2007 Target: 100
- 2008 Target: 100
- 2009 Target: 100
- 2010 Target: 100
- 2011 Target: 100

**Outcome Text**

Number of individuals implementing recommended action or practice

**Outcome Type:** Medium

2007 Target: 30  
2008 Target: 30  
2009 Target: 50  
2010 Target: 70  
2011 Target: 70

**Outcome Text**

Number of individuals requesting assistance

**Outcome Type:** Medium

2007 Target: 50  
2008 Target: 50  
2009 Target: 50  
2010 Target: 70  
2011 Target: 70

**Outcome Text**

Number of nutrient management plans written and people trained

**Outcome Type:** Medium

2007 Target: 30  
2008 Target: 30  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

Estimated dollar value of adopted best management practices

**Outcome Type:** Long

2007 Target: 75000  
2008 Target: 75000  
2009 Target: 125000  
2010 Target: 125000  
2011 Target: 125000

**Outcome Text**

Number of nutrient management plans implemented

**Outcome Type:** Long

2007 Target: 30  
2008 Target: 30  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

Surface water quality monitoring data collected in watersheds before and after bmp implementation

**Outcome Type:** Long

2007 Target: 2

2008 Target: 2

2009 Target: 5

2010 Target: 5

2011 Target: 5

**20. External factors which may affect outcomes**

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

**Description**

Decrease funding, changing priorities; farmer/rancher attitudes; natural disasters; economic conditions; changing regulatory climate, coordination and cooperation with government entities.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}



**1. Name of the Planned Program**

Citizenship and Leadership Development

**2. Program knowledge areas**

- 806 Youth Development 100 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Youth need to develop a connection and sense of purpose within their community to help ensure survival of the North Dakota way of life in the 21st century. 4-H youth development is in the unique position to develop citizenship and leadership skills through activities and opportunities including, but not limited to, 4-H community clubs, school enrichment, community development and short-term and special interest programs. By developing youth civic activism, 4-H youth development insures a future generation of productive North Dakota citizens and tomorrow's community leaders.

**6. Situation and priorities**

Youth need to develop a connection and sense of purpose within their community to help insure survival of the North Dakota way of life in the 21st century. 4-H youth development is in the unique position to develop citizenship and leadership skills through activities and opportunities including ,but not limited to, 4-H community clubs, school enrichment, community development and short-term and special interest programs. By developing youth civic activism, 4-H youth development ensures a future generation of productive North Dakota citizens and tomorrow's community leaders. The priority is to develop youth civic engagement to enhance their leadership skills and to become active citizens in their community.

**7. Assumptions made for the Program**

4-H will remain an important youth program. Communities need youth to be involve for the survival of the North Dakota way of life.

**8. Ultimate goal(s) of this Program**

More youth are involved in leadership roles in their community. Youth governmental board would be developed to influence legislation affecting youth. Youth are involved in community organizations as partners.

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other then formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	10.0	0.0	0.0	0.0
2008	10.0	0.0	0.0	0.0
2009	10.0	0.0	0.0	0.0
2010	10.0	0.0	0.0	0.0
2011	10.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Develop Leadership Training module  
 Contribution module to include how community service leads to belonging, independence, mastery and generosity  
 Future modules on youth involvement, diversity, civic engagement and teamwork

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

4-H youth 4-H youth leaders 4-H adult leaders County extension staff Other community organizations, councils and boards

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	200	500	100	500
2008	400	1000	200	1000
2009	800	1500	300	1500
2010	1000	2000	400	1500
2011	1400	3000	500	2000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Fifty percent of clubs will have someone complete contribution module.

**Outcome Type:** Short

2007 Target: 100

2008 Target: 240

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

Forty percent of clubs will do one or more community service projects.

**Outcome Type:** Short

2007 Target: 150

2008 Target: 200

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

Twenty-five percent of county 4-H leadership will complete leadership modules.

**Outcome Type:** Short

2007 Target: 350  
2008 Target: 450  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

One hundred community service projects will be reported.

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 100  
2009 Target: 100  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Fifty percent of county 4-H leadership will complete leadership modules.

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 400  
2010 Target: 700  
2011 Target: 0

**Outcome Text**

Five percent of county 4-H leadership completing leadership modules will report more civic activism.

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 50  
2010 Target: 75  
2011 Target: 0

**Outcome Text**

Fifty percent of clubs will report contributions to their community.

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 250

**Outcome Text**

Seventy-five percent of county 4-H leadership will complete leadership modules.

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 1000

**Outcome Text**

Twenty-five percent of county 4-H leadership who complete leadership modules will report more civic activism.

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 250

**20. External factors which may affect outcomes**

- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Community needs and changing demographics

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)
- 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.

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Developing Leadership Systems

**2. Program knowledge areas**

- 805 Community Institutions, Health, and Social Services 50 %
- 803 Sociological and Technological Change Affecting Individuals, Families and Communities 50 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

The foundation of community and economic development in North Dakota is local leadership, including the identification and development of current and emerging leaders, programs to strengthen leadership, and local capacity to enhance community self-sufficiency.

**6. Situation and priorities**

The foundation of community and economic development in North Dakota is local leadership, including the identification and development of current and emerging leaders, programs to strengthen leadership, and local capacity to enhance community self-sufficiency. Priorities include developing leadership systems, strengthening emerging and existing leaders' knowledge and skills, and strengthening youth-adult partnerships.

**7. Assumptions made for the Program**

If North Dakota leadership systems are enhanced, then the current and emerging youth and adult leaders will be actively involved in strengthening the region in which they live.

**8. Ultimate goal(s) of this Program**

Youth and adults are engaged in leadership roles. The quality of life for individuals, organizations and communities will be improved. Youth and adults partner for community improvement.

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	5.0	0.0	0.0	0.0
2008	5.0	0.0	0.0	0.0
2009	5.0	0.0	0.0	0.0
2010	5.0	0.0	0.0	0.0
2011	5.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Rural Leadership North Dakota program Horizons project

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Youth Schools Elected officials Community asset builders Community collaborators Association of Counties Service groups Governor's office Chamber Economic developers Higher Education SBARE RLND Soil Conservation Districts

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	1200	1700	650	850
2008	1200	1700	650	850
2009	1250	2000	750	1000
2010	1250	2000	750	1000
2011	1250	2000	750	1000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of community members who display leadership skills sets

**Outcome Type:** Short

2007 Target: 1200

2008 Target: 1200

2009 Target: 1250

2010 Target: 1250

2011 Target: 1250

**Outcome Text**

Number of community members who understand how they can be involved in leadership roles

**Outcome Type:** Short

2007 Target: 1200

2008 Target: 1200

2009 Target: 1250

2010 Target: 1250

2011 Target: 1250

**Outcome Text**

Number of people from diverse backgrounds involved



**Outcome Type:** Short

2007 Target: 22  
2008 Target: 22  
2009 Target: 32  
2010 Target: 32  
2011 Target: 32

**Outcome Text**

Number of community projects being accomplished and reported on

**Outcome Type:** Medium

2007 Target: 35  
2008 Target: 35  
2009 Target: 40  
2010 Target: 40  
2011 Target: 40

**Outcome Text**

Percent increase in non-traditional leaders including youth

**Outcome Type:** Medium

2007 Target: 10  
2008 Target: 15  
2009 Target: 15  
2010 Target: 17  
2011 Target: 17

**Outcome Text**

Number of individuals available in communities for leadership on community organizations

**Outcome Type:** Long

2007 Target: 1250  
2008 Target: 1250  
2009 Target: 1250  
2010 Target: 1250  
2011 Target: 1250

**Outcome Text**

Number of community organizations with youth on boards

**Outcome Type:** Long

2007 Target: 25  
2008 Target: 25  
2009 Target: 25  
2010 Target: 25  
2011 Target: 25

**20. External factors which may affect outcomes**

- Economy
- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Number of CEDL personnel, partnerships and regional receptivity to change.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

## 1. Name of the Planned Program

Financial Security for All

## 2. Program knowledge areas

- 801 Individual and Family Resource Management 100 %

## 3. Program existence

- Intermediate (One to five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

Many Americans and, more specifically, North Dakotans, are in great danger of not being financially stable and secure throughout their lifetimes. Because most people did not receive formal financial education in their youth, they need lifelong learning opportunities to help them improve their financial management skills. Increasing financial literacy throughout the life cycle is essential to avoid threats to financial security.

## 6. Situation and priorities

Many Americans and, more specifically, North Dakotans, are in great danger of not being financially stable and secure throughout their lifetimes. Because most people did not receive formal financial education in their youth, they need lifelong learning opportunities to help them improve their financial management skills. Increasing financial literacy throughout the life cycle is essential to avoid threats to financial security.

Programs in this area are designed to increase the number of people who are financially literate and empowered with the knowledge, attitudes, skills, and confidence to practice effective and successful financial management strategies that insure financial security and stability across the life cycle. Education programs encourage families to adopt financial practices that will increase financial security and stability, and help them cope with financial impacts of periods of reduced income due to plant downsizing and military base closings, as well as from divorce, widowhood and natural disasters. A majority of the effort to provide these programs will be through eXtension, an online, interactive, virtual environment.

## 7. Assumptions made for the Program

North Dakota economy remains relatively stable  
Homeland security maintained  
North Dakotans can earn a living wage  
People will be motivated to learn  
Knowledge change leads to behavior change  
Behavior change leads to condition change  
Funding will be secure throughout the course of the project

## 8. Ultimate goal(s) of this Program

Increased financial security  
Decrease risk factors for financial problems  
Reduce anxiety related to financial problems  
Increased savings  
Decreased debt  
Decreased bankruptcy rate  
Communities have improved financial stability

## 9. Scope of Program

- In-State Extension
- Multistate Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	3.0	0.0	0.0	0.0
2008	3.0	0.0	0.0	0.0
2009	3.0	0.0	0.0	0.0
2010	3.0	0.0	0.0	0.0
2011	3.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Promote Interactive learning modules  
 Packaged programs  
 NDSU Extension Service Family Economics Web site  
 Media work  
 Collaborative projects

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Extension educators  
 Specialists  
 General public  
 Targeted audiences - Baby Boomers, women, couples, farm/ranch  
 Families - older adults  
 Collaborators  
 Youth  
 Financially vulnerable

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	2500	100000	2000	8000
2008	2600	120000	2000	8500
2009	2600	140000	2000	9000
2010	2600	160000	2000	9500
2011	2700	180000	2000	10000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of educational programs and activities conducted

**Outcome Type:** Short

2007 Target: 200

2008 Target: 200

2009 Target: 200

2010 Target: 200

2011 Target: 200

**Outcome Text**

Number of people completing educational programs

**Outcome Type:** Short

2007 Target: 2000  
2008 Target: 2000  
2009 Target: 2500  
2010 Target: 2500  
2011 Target: 2500

**Outcome Text**

Number of people reporting increased knowledge from the number completing educational programs

**Outcome Type:** Short

2007 Target: 1800  
2008 Target: 1800  
2009 Target: 2000  
2010 Target: 2000  
2011 Target: 2250

**Outcome Text**

Number of people who plan to adopt practices from the number of people who increased knowledge

**Outcome Type:** Short

2007 Target: 1500  
2008 Target: 1500  
2009 Target: 1600  
2010 Target: 1600  
2011 Target: 2000

**Outcome Text**

Number of people adopting practices from the number of people who increased knowledge

**Outcome Type:** Medium

2007 Target: 500  
2008 Target: 500  
2009 Target: 600  
2010 Target: 600  
2011 Target: 800

**Outcome Text**

Number of people receiving information through non-program contacts such as telephone, office and farm visits

**Outcome Type:** Medium

2007 Target: 1200  
2008 Target: 1200  
2009 Target: 1200  
2010 Target: 1200  
2011 Target: 1200

**Outcome Text**

Number of people who engage in activities that increase their financial literacy related to later life issues

**Outcome Type:** Medium

2007 Target: 2000  
2008 Target: 2200  
2009 Target: 2400  
2010 Target: 2600  
2011 Target: 2800

**Outcome Text**

Number of people who initiate or increase contributions to a savings plan for retirement or future income needs or participate in America Saves program

**Outcome Type:** Medium

2007 Target: 400  
2008 Target: 500  
2009 Target: 600  
2010 Target: 700  
2011 Target: 800

**Outcome Text**

Number of people who participate in the Legally Secure Your Financial Future program

**Outcome Type:** Medium

2007 Target: 50  
2008 Target: 75  
2009 Target: 100  
2010 Target: 150  
2011 Target: 250

**Outcome Text**

Number of people who participate in the Investing for Your Future program

**Outcome Type:** Medium

2007 Target: 10  
2008 Target: 20  
2009 Target: 30  
2010 Target: 40  
2011 Target: 50

**Outcome Text**

Number of people who participate in programs to cope with financial impacts of reduced income

**Outcome Type:** Medium

2007 Target: 300  
2008 Target: 400  
2009 Target: 500  
2010 Target: 600  
2011 Target: 700

**Outcome Text**

Number of participants reporting reduced anxiety related to financial problems

**Outcome Type:** Long

2007 Target: 500  
2008 Target: 600  
2009 Target: 700  
2010 Target: 800  
2011 Target: 900

**Outcome Text**

Number of participants reporting increased savings

**Outcome Type:** Long

2007 Target: 1000  
2008 Target: 1200  
2009 Target: 1400  
2010 Target: 1600  
2011 Target: 1800

**Outcome Text**

Amount of increased savings

**Outcome Type:** Long

2007 Target: 120000  
2008 Target: 236000  
2009 Target: 248000  
2010 Target: 360000  
2011 Target: 375000

**Outcome Text**

Number of participants reporting decreased debt

**Outcome Type:** Long

2007 Target: 500  
2008 Target: 600  
2009 Target: 700  
2010 Target: 800  
2011 Target: 900

**Outcome Text**

Amount of decreased debt

**Outcome Type:** Long

2007 Target: 10000  
2008 Target: 20000  
2009 Target: 30000  
2010 Target: 40000  
2011 Target: 50000



**Outcome Text**

Decreased numbers of personal bankruptcy filings in state of North Dakota

**Outcome Type:** Long

2007 Target: 50

2008 Target: 60

2009 Target: 70

2010 Target: 80

2011 Target: 90

**20. External factors which may affect outcomes**

- Economy
- Appropriations changes
- Competing Public priorities

**Description**

Institutional commitment  
Changing priorities  
Economic conditions  
Cooperation with partners

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)
- 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.

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Noxious and Invasive Weed Management

**2. Program knowledge areas**

- 216 Integrated Pest Management Systems 40 %
- 213 Weeds Affecting Plants 20 %
- 215 Biological Control of Pests Affecting Plants 40 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Rangeland and pasture comprise about 42 percent of the land area of the United States, with three-quarters of all domestic livestock depending upon these lands for survival. Today, more than 300 rangeland weeds are found in the United States. In total, noxious and invasive weeds in rangeland cause an estimated loss of \$2 billion annually (which is more than all other pests combined). Primary impacts are to the livestock industry, wildlife habitat, and soil and plant community health.

**6. Situation and priorities**

Rangeland and pasture comprise about 42 percent of the land area of the United States, with three-quarters of all domestic livestock depending upon these lands for survival. Today, more than 300 rangeland weeds are found in the United States. In total, noxious and invasive weeds in rangeland cause an estimated loss of \$2 billion annually (which is more than all other pests combined). Primary impacts are to the livestock industry, wildlife habitat, and soil and plant community health. Rangeland weed populations increase an average 4 percent annually in the United States, indicating a need to provide education opportunities and awareness of the problem and techniques to control weed invasion. Priorities are to develop integrated pest management workshops, demonstration projects and research trials to teach land managers (both private and public) best management practices to minimize weed invasion and control known populations.

**7. Assumptions made for the Program**

Noxious and invasive weeds will continue to be a problem in rangeland both in North Dakota and across the United States. Damage will affect both private and public lands.

**8. Ultimate goal(s) of this Program**

Improved profitability and productivity of North Dakota livestock operations  
Improved rangeland productivity and health through improved management

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	4.0	0.0	0.0	0.0
2008	4.0	0.0	0.0	0.0
2009	4.0	0.0	0.0	0.0
2010	4.0	0.0	0.0	0.0
2011	4.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

- Develop presentation materials
- Develop resource material
- Provide workshops and field tours
- Translate scientific materials into lay materials
- Develop demonstration and research trials
- Evaluate effectiveness of activities

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

- Private land managers, including livestock producers
- Public land managers
- 4-H youth
- Government agency personnel
- Conservation groups

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	200	2000	0	0
2008	300	3000	0	0
2009	400	3000	0	0
2010	450	3000	0	0
2011	500	5000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of individuals receiving training and education

**Outcome Type:** Short

2007 Target: 200

2008 Target: 250

2009 Target: 300

2010 Target: 350

2011 Target: 400

**Outcome Text**

Number of individuals demonstrating increase in subject knowledge and skills

**Outcome Type:** Short

2007 Target: 100

2008 Target: 100

2009 Target: 150

2010 Target: 150

2011 Target: 200

**Outcome Text**

Number of producers implementing recommended actions or practices

**Outcome Type:** Medium

2007 Target: 20  
2008 Target: 25  
2009 Target: 30  
2010 Target: 35  
2011 Target: 50

**Outcome Text**

Number of producers participating in government cost share programs for range conservation

**Outcome Type:** Medium

2007 Target: 50  
2008 Target: 55  
2009 Target: 60  
2010 Target: 65  
2011 Target: 70

**Outcome Text**

Estimated cost savings and return for North Dakota landowners implementing an integrated pest management program (\$/acre)

**Outcome Type:** Long

2007 Target: 5  
2008 Target: 7  
2009 Target: 10  
2010 Target: 11  
2011 Target: 12

**Outcome Text**

Reduce number of noxious weed acres by two to five percent annually in North Dakota

**Outcome Type:** Long

2007 Target: 2  
2008 Target: 3  
2009 Target: 5  
2010 Target: 7  
2011 Target: 10

**20. External factors which may affect outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Public priorities

**Description**

Land manager attitudes and economic parameters; environmental conditions; changing priorities of government agencies and policy makers.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Fusarium head blight of wheat

**2. Program knowledge areas**

- 212 Pathogens and Nematodes Affecting Plants 100 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Fusarium head blight is a disease of wheat that has cost the North Dakota economy in excess of \$4 billion in losses since 1993. The disease reduces yield of wheat and reduces quality by lowering market grade and introducing toxins that are harmful to animals and humans.

**6. Situation and priorities**

Fusarium head blight is a disease of wheat that has cost the North Dakota economy in excess of \$4 billion in losses since 1993. The disease reduces yield of wheat and reduces quality by lowering market grade and introducing toxins that are harmful to animals and humans. Areas of concern include evaluating performance of released varieties; identifying, improving and communicating disease-management strategies; and reporting outbreaks.

**7. Assumptions made for the Program**

Funding will remain available to do this research. Wheat will continue to one of the important crops in North Dakota.

**8. Ultimate goal(s) of this Program**

Adding value to our wheat crop by decreasing yield and quality losses  
Enhance public perception of food quality

**9. Scope of Program**

- In-State Extension
- In-State Research
- Integrated Research and Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	3.0	0.0	2.0	0.0
2008	3.0	0.0	2.0	0.0
2009	3.0	0.0	2.0	0.0
2010	3.0	0.0	2.0	0.0
2011	3.0	0.0	2.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Research on fungicidal- and bio-control and application technology  
 Field surveys on disease severity and losses to disease  
 Develop resource material  
 Provide presentations and workshops  
 Translate scientific materials into lay materials

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Wheat producers  
 Crop consultants and ag advisors  
 Research Extension Centers  
 Extension personnel  
 Agribusiness and agrifinance personnel  
 Government agency personnel

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	500	1000	0	0
2008	1000	2000	0	0
2009	1500	3000	0	0
2010	2000	4000	0	0
2011	2500	5000	0	0



**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	2
2008	1
2009	2
2010	1
2011	2

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Percent of acres planted to resistant varieties

**Outcome Type:** Short

2007 Target: 40

2008 Target: 45

2009 Target: 50

2010 Target: 55

2011 Target: 60

**Outcome Text**

Percent of acres treated with fungicides

**Outcome Type:** Short

2007 Target: 17

2008 Target: 16

2009 Target: 15

2010 Target: 14

2011 Target: 12

**Outcome Text**

Economic losses to disease (\$)

**Outcome Type:** Short

2007 Target: 150000000  
2008 Target: 130000000  
2009 Target: 120000000  
2010 Target: 100000000  
2011 Target: 80000000

**Outcome Text**

Number of individuals demonstrating increased knowledge and skills

**Outcome Type:** Short

2007 Target: 10000  
2008 Target: 12000  
2009 Target: 14000  
2010 Target: 17000  
2011 Target: 20000

**Outcome Text**

Number of individuals implementing recommended action or practice

**Outcome Type:** Medium

2007 Target: 10000  
2008 Target: 12000  
2009 Target: 14000  
2010 Target: 17000  
2011 Target: 20000

**Outcome Text**

Economic losses to Fusarium head blight (\$)

**Outcome Type:** Medium

2007 Target: 150000000  
2008 Target: 130000000  
2009 Target: 120000000  
2010 Target: 100000000  
2011 Target: 80000000

**Outcome Text**

Estimated dollar value of adopted best management practices (\$)

**Outcome Type:** Long

2007 Target: 50000000  
2008 Target: 60000000  
2009 Target: 70000000  
2010 Target: 85000000  
2011 Target: 100000000

**Outcome Text**

Stable export market unaffected by quality issues (\$)

**Outcome Type:** Long

2007 Target: 500000000

2008 Target: 520000000

2009 Target: 540000000

2010 Target: 565000000

2011 Target: 600000000

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Government Regulations

**Description**

Decrease funding, changing priorities; producer attitudes toward varieties; weather favorable for disease; economic conditions; coordination and cooperation with government entities

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}

**1. Name of the Planned Program**

Family Meals

**2. Program knowledge areas**

- 802 Human Development and Family Well-Being 100 %

**3. Program existence**

- Intermediate (One to five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Family meals are one of the most common social opportunities for individuals to build family connections, learn healthy nutrition and develop practical skills. Over a third of families eat less than three meals together a week; child and adult obesity is increasing; and family relationships are at risk.

**6. Situation and priorities**

Family meals are one of the most common social opportunities for individuals to build family connections, learn healthy nutrition, and develop practical skills. Over a third of families eat less than three meals together a week; child and adult obesity is increasing; and family relationships are at risk. Critical areas related to family meals include family identity, transmission of values, family connections, family time, monitoring children's behavior, protective elements related to risk issues, healthy nutrition habits and overall diet quality.

**7. Assumptions made for the Program**

Families will continue to struggle balancing family meal time with other scheduling commitments.

**8. Ultimate goal(s) of this Program**

1. Improving the quality of family relationships and the overall well-being of children and adolescents through meaningful family nutrition. 2. Improving dietary quality for family members. 3. Enhanced public awareness of the value and importance of family meals.

**9. Scope of Program**

- In-State Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- No

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	3.0	0.0	0.0	0.0
2008	3.0	0.0	0.0	0.0
2009	3.0	0.0	0.0	0.0
2010	3.0	0.0	0.0	0.0
2011	3.0	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Develop newsletter resources on family meals  
 Develop presentation and resource materials  
 Provide training through presentations and workshops  
 Identify key and emerging issues  
 Evaluate effectiveness of activities

**14. Type(s) of methods will be used to reach direct and indirect contacts**

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Parents and family caregivers  
 4-H youth and other youth  
 Child care programs, caregivers  
 School system personnel  
 Government agency personnel

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	1200	2500	600	1000
2008	1500	3500	800	1500
2009	1600	5000	1000	2000
2010	2500	7500	1400	2500
2011	3000	10000	1800	3000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

{NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

Target: {NO DATA ENTERED}

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

Number of individuals receiving information through materials or training

**Outcome Type:** Short

2007 Target: 5500

2008 Target: 7500

2009 Target: 10000

2010 Target: 14000

2011 Target: 18000

**Outcome Text**

Percent of participating individuals demonstrating increase in subject knowledge and skills

**Outcome Type:** Short

2007 Target: 60

2008 Target: 65

2009 Target: 70

2010 Target: 75

2011 Target: 75

**Outcome Text**

Percent of individuals implementing recommended actions or practices

**Outcome Type:** Medium

2007 Target: 50  
2008 Target: 50  
2009 Target: 60  
2010 Target: 60  
2011 Target: 70

**Outcome Text**

Percent of individuals indicating a change in frequency of family meals

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 60  
2010 Target: 60  
2011 Target: 0

**Outcome Text**

Percent of individuals indicating a change in other quality indicators of the family meal experience

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 60  
2010 Target: 60  
2011 Target: 0

**Outcome Text**

Percent of individuals showing an improvement in measures of family connection and well-being

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

Percent of individuals showing an improvement in family nutritional wellness

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 50  
2011 Target: 50

**20. External factors which may affect outcomes**

- Economy
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Limits on family time and overscheduling; availability of “fast food” alternatives; consumer-oriented lifestyles; lack of knowledge and skills regarding family meals; community awareness.

**21. Evaluation studies planned**

- Retrospective (post program)
- During (during program)
- 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.

**Description**

{NO DATA ENTERED}

**22. Data Collection Methods**

- On-Site

**Description**

{NO DATA ENTERED}