

Plant Breeding

Plant Breeding

V(A). Planned Program (Summary)

1. Name of the Planned Program

Plant Breeding

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
202	Plant Genetic Resources	0%		25%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		25%	
204	Plant Product Quality and Utility (Preharvest)	0%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	0%		5%	
212	Pathogens and Nematodes Affecting Plants	0%		40%	
	Total	0%		100%	

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	13.0	0.0
Actual	0.0	0.0	13.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	442000	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	650000	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)**1. Standard output measures****Target for the number of persons (contacts) reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2008	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)**Patent Applications Submitted****Year Target****Plan:** 3

2008: 8

Patents listed

PVP for Rawson barley

PVP for Pinnacle barley

PVP for Cavalier soybean

Trademark for Northern Flare sugar maple

Trademark for Sisseton sugar maple

Trademark for Fireworks amur maple

Trademark for Northland Boston Ivy

Trademark for Northern Debut little leaf linden

3. Publications (Standard General Output Measure)**Number of Peer Reviewed Publications**

	Extension	Research	Total
Plan	0	13	
2008	0	28	28

V(F). State Defined Outputs**Output Target****Output #1****Output Measure**

{No Data Entered}

Not reporting on this Output in this Annual Report

Year	Target	Actual
2008	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

O No.	Outcome Name
1	Estimated dollar value new cultivars bring to North Dakota
2	Percent of acreage that our cultivar releases occupy for each of the crops we breed
3	Changes in breeding priorities that match needs
4	Addition of new breeding programs or addition of responsibilities to existing programs
5	Number of teams working together to develop genetic solutions
6	Number of individuals growing improved cultivars
7	Number of other breeding programs using NDSU developed germplasm

Outcome #1

1. Outcome Measures

Not reporting on this Outcome for this Annual Report

2. Associated Institution Types

3a. Outcome Type:

3b. Quantitative Outcome

Year	Quantitative Target	Actual
------	---------------------	--------

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
---------	----------------

V(H). Planned Program (External Factors)

External factors which affected outcomes

Natural Disasters (drought, weather extremes, etc.)

Economy

Appropriations changes

Public Policy changes

Government Regulations

Brief Explanation

Success in long term variety improvement programs is dependent on collection of reliable data not adversely affected by unfavorable growing conditions during the growing season and reliable funding for long-term efforts. Reductions in funding for variety improvement efforts due to budget cuts because of the poor economy will not be immediately recognized, but will have serious implications five years or more in the future. In order for breeders and pathologists to keep ahead of new and emerging diseases that may affect their crop, they must be proactive in developing germplasm that is resistant to pests before they enter an area. An example would be developing wheat and barley germplasm with resistance to the new race of wheat stem rust identified in Uganda in 1999. All of the barley varieties and greater than 70% of the wheat varieties currently grown in the US are susceptible to the wheat stem rust pathotype identified in Uganda.

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

1. Evaluation Studies Planned

Retrospective (post program)

Before-After (before and after program)

During (during program)

Time series (multiple points before and after program)

Evaluation Results

Key Items of Evaluation