

Plant Breeding, Genetics and Genomics

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V(A). Planned Program (Summary)

1. Name of the Planned Program

Plant Breeding, Genetics and Genomics

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms			15%	
202	Plant Genetic Resources			35%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants			10%	
204	Plant Product Quality and Utility (Preharvest)			30%	
205	Plant Management Systems			10%	
	Total			100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	4.8	0.0
Actual	0.0	0.0	36.0	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	436712	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	1370851	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	2448257	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities include the production of technical and non technical publications, and the release of germplasm, new varieties, and new genomics tools and techniques. In addition, information on plant breeding and genomics advances is communicated through classroom activities, field days, variety trials, news releases, presentations at county and state meetings and conventions, and strategic activities with state agricultural groups.

2. Brief description of the target audience

Our target audience is farmers, colleagues, stakeholders, grain associations, Montana Department of Agriculture, Montana Wheat and Barley Committee, grain elevators, state commodity groups, seed companies, and domestic and foreign buyers of quality wheat.

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	2000	500	0	0
2007	2600	1000	0	0

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

Year Target

Plan: 1

2007: 2

Patents listed

Bruckner, P.L., US Plant Variety Protection Certificate No.200500347, Wheat, common, 'MT1159CL'

Bruckner, P.L., US Plant Variety Protection Certificate No.200500334, Wheat, common, 'Genou'

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

	Extension	Research	Total
Plan			
2007	0	10	10

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

Number of foreign trade teams in Montana

Year	Target	Actual
2007	15	26

Output #2**Output Measure**

Number of foreign trade teams at MSU

Year	Target	Actual
2007	4	10

Output #3**Output Measure**

Number of research citations

Year	Target	Actual
2007	10	15

V(G). State Defined Outcomes

O No.	Outcome Name
1	Documents on new cultivars provided to Montana producers to maintain Montana producers' dominance in specialty grain markets
2	The number of new molecular techniques used to enhance breeding results
3	Average per bushel yield increase of Montana grains while maintaining product quality
4	Number of elite lines of wheat and barley screened for agronomic and quality characteristics
5	Number of improved variety recommendations by districts across Montana
6	Planted acreage percentage increase per year (base 2005) of MSU-released small grains in Montana

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
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3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
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V(H). Planned Program (External Factors)

External factors which affected outcomes

Natural Disasters (drought, weather extremes, etc.)

Other (Funding)

Brief Explanation

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

1. Evaluation Studies Planned

Retrospective (post program)

During (during program)

Evaluation Results

On-going development in plant genetics ensures that growers will have access to the most adapted and highest yielding varieties of small grains. Growers readily accept new varieties as indicated by purchase and planting records.

Key Items of Evaluation

Growth in the planting of new varieties demonstrates the success of the breeding programs at MSU.