

Plant Production

Plant Production

V(A). Planned Program (Summary)

1. Name of the Planned Program

Plant Production

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	40%		40%	
202	Plant Genetic Resources	5%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plant	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	15%		15%	
205	Plant Management Systems	30%		30%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	7.5	0.0	11.6	0.0
Actual	6.1	0.0	21.3	0.0

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

Extension		Research	
Smith-Lever 3b & 3c 330985	1890 Extension	Hatch 624905	Evans-Allen
	0		0
1862 Matching 330985	1890 Matching	1862 Matching 624905	1890 Matching
	0		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

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- Research procedures and technology
- Papers, citations, patents
- Train students
- Dissemination of research results
- Educational workshops
- Conferences
- Commercialization of techniques and products

The NMSU experimental NM0307 was approved for cultivar release, as NuMex Melton, by the NMSU Agricultural Experiment Station in 2008. This cultivar exhibits improved performance under both optimum and deficit levels of irrigation and appears widely adapted throughout New Mexico. This cultivar should benefit alfalfa growers in New Mexico, and perhaps adjacent regions, by providing a high quality forage with enhanced yield potential across diverse production environments.

The integration of DNA marker linkage data with field performance of genetically defined alfalfa research population families under varying soil moisture conditions, has identified markers that can be used to select against alleles that reduce forage and root biomass yield under drought stress. Results suggest that selection for specific marker combinations can potentially improve yield performance by 3 to 14% under drought stress. Marker assisted selection programs are currently being implemented to evaluate their effectiveness at improving the drought tolerance trait in commercial populations.

Chile peppers are an important part of New Mexico's heritage and economic development. New Mexico State University has the longest continuous program of chile pepper improvement in the world. All New Mexican (Anaheim) green and red chile pepper types grown today gained their genetic base from cultivars first developed at New Mexico State University. According to the New Mexico Department of Agriculture statistics, chile peppers were worth \$32 million at farm gate in 2007. With the majority of chile peppers processed, the chile pepper crop is worth much more. The new improved 'NuMex Heritage 6-4' and 'NuMex Heritage Big Jim' are important for the continued success of the industry. Having high yielding open-pollinated cultivars with lower seed cost will aid in keeping growers competitive in the world arena.

- Of all participants in the 2008 Master Gardener Program that have attended turf maintenance courses for 3 or more years, 94% reported that repeated training changed and enriched their understanding of turfgrass management more greatly than did one time training would have and 69% admitted that repeated training changed their attitude towards turfgrass.

- A total of 54% of the participants in the statewide Master Gardener program believed that traditional turf areas waste great amounts of water that could be better used elsewhere. After a 3 month period of seminar series, the opinion that turf wastes water dropped to 19% among all surveyed Master Gardeners. A total of 64% of all participants in the statewide program requested additional training in the area of turfgrass irrigation. "unnecessary and water-guzzling" ground cover is widespread and prevalent and 60% of all participants in the Master Gardener program considered this statement to be true prior to the training seminar. A total of 48% of all participants reconsidered their opinion and only 12% of the participants believed that turf wastes water after the training.

- When surveyed, 98% of the 157 participants of the Master Gardener turfgrass training program in New Mexico report that the turfgrass training course changed and enriched their understanding of turf maintenance issues to either a great extent or to a fair extent

- The "Pecanigator" is an irrigation scheduling device designed by a team of NMSU researchers and extension personnel. The original design was a cardboard "slide rule", but now is available online. It is designed specifically for increasing pecan profitability per acre-foot of irrigation water applied under the conditions of Dona Ana county (where 70% of New Mexico's pecan acreage is found), but may also be used in most of New Mexico's other pecan producing counties.

- Pecan nut case bear scouting and reporting took place for crop year 2008. Producers were advised of appropriate actions via e-mail, news paper articles, and newsletters. The impact of PNC was minimal with less than a 1% loss to PNC compared with a 12 to 23% loss when control measures are not implemented. This increase the gross revenue to the county producers by about 4 million dollars.

- Agents presented a lecture on urban arboriculture to both the Albuquerque Area Extension Master Gardeners (AAEMG): 12 filled out evaluation forms. 100% stated they had learned new information; 58% felt the new information would be "quite a bit" useful to them, while 42% felt it would be "very much" useful to them.

- Programming efforts about Africanized Bees for emergency responders in the county: Over 80% of those in

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attendance said that they had learned something new that they didn't know before and they would change their habits of how they approach a potentially dangerous situation.

2. Brief description of the target audience

The target audience is both small as well as medium and large scale agricultural operations, businesses, associations, cooperatives, consulting firms and collectives that may or may not be defined as a farm under the USDA economic return criteria, but rather are land owners, managers, consultants, or students that wish to improve agronomic production and efficiency as do and are other audience participants such as Extension agents, farmers, ranchers, other agricultural specialists, private-tribal-state-federal and even nonprofit organizations.

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:	0
2008:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2008	2	26	28

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

The specific output measures will vary according to the specific project being monitored. The development of research procedures and technology, training of students, publishing research papers, and disseminating research results via educational workshops, conferences, and Extension media are important outputs for the various projects falling under this planned program.

Year	Target	Actual
2008	0	0

V(G). State Defined Outcomes

O No.	Outcome Name
1	# of trained professionals
2	# of research publications
3	# of Extension publications
4	% of producers, growers, homeowners adopting NMSU recommendations
5	# of improved plant varieties released
6	Successful plant agricultural enterprises

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.)

Economy

Appropriations changes

Public Policy changes

Government Regulations

Competing Public priorities

Competing Programmatic Challenges

Brief Explanation

New Mexico continues in a serious drought, which affects the amount of water available to farmers. Water availability also exacerbates tensions between industry, agriculture, urban and domestic users. Until all water rights have been adjudicated, users remain in a "use or lose" situation regarding their water amounts.

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

1. Evaluation Studies Planned

During (during program)

Case Study

Comparisons between program participants (individuals, group, organizations) and non-participants

Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Comparison between locales where the program operates and sites without program intervention

Evaluation Results

{No Data Entered}

Key Items of Evaluation
{No Data Entered}