

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Wisconsin Cooperative Extension Response to the Drought

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	20%			
133	Pollution Prevention and Mitigation	5%			
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	20%			
205	Plant Management Systems	15%			
216	Integrated Pest Management Systems	10%			
301	Reproductive Performance of Animals	5%			
307	Animal Management Systems	10%			
601	Economics of Agricultural Production and Farm Management	10%			
608	Community Resource Planning and Development	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	7.7	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	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
369972	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
369972	0	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

Southern Wisconsin was on the northern boundary of what USDA-ERS termed the "most severe and extensive drought in at least 25 years." On July 25, USDA declared 23 Southern Wisconsin counties as natural disaster areas. UW-Extension Cooperative Extension specialists and agents had already met via conference call on July 6 to discuss how the dry spell was affecting the nearly \$60 billion agriculture industry - drought posed challenges for both urban and rural residents, and farmers needed information to make decisions about crops and livestock. Within hours, the Extension Responds-Drought 2012 web site was delivering timely, research-based information, receiving 17,094 page views by August 12: <http://fyi.uwex.edu/drought2012>

Timely information improves decisions: Campus and county faculty and staff addressed urgent needs. They walked fields, discussed management for specific cropping situations, advised on livestock feed and animal comfort, provided tips for human heat-related safety and comfort, gave advice for gardens, turfgrass and landscape plants, and worked with partners to provide educational programs, disseminate information and facilitate emergency response. The ANRE program director serves on the Wisconsin Drought Task Force. An extension point person has been designated to work with state specialists, county agriculture and family living educators and partners to coordinate the longer-term response needed. The extension Farmer to Farmer web site connects farmers with each other for buying and selling forage and corn, and with available pastures: <http://farmertofarmer.uwex.edu>

Improving drought-stricken crop yield: Statewide, producers and agricultural professionals were assisted on forage management and feeding practices to minimize drought impacts. Twenty county agents and state specialists held 48 meetings and field days to address drought-related forage management and feeding issues reaching 4,198 producers and agricultural professionals, and 26 agents and specialists reported 2,438 individual contacts through on-farm and phone calls, etc. on drought-related forage management and feeding issues. For example, Green County family living and agriculture educators working with local partners coordinated 3 meetings reaching 350 farmers and agricultural professionals on plant mortality, spider mites in soybeans, nitrates in corn silage, pricing drought-stressed corn silage, alfalfa cutting management, alternative forage options, corn smut and aflatoxins. Specialists addressed crop insurance, mental health and stress issues, and tested 38 samples of corn silage for nitrate levels - 11% tested higher than 1,000 ppm for nitrates, which could have been toxic to cattle. These actions prevented more than 4,000 acres of drought-stressed corn silage from being harvested prematurely. Rain in late July and August improved the moisture levels in plants and ensured that remaining feed fermented properly in storage.

2. Brief description of the target audience

The audience includes North Central Region colleagues, agricultural professionals and other educational partners, grains, commercial vegetable and fruit crop growers and workers, 4-H and FFA youth, grower associations, food processors and entrepreneurs, food coalitions and cooperatives, agricultural service providers, agronomic retail and wholesale suppliers, local and tribal officials, planning commissions, state and federal rural development and regulatory agencies, and homeowners.

The 6,636 drought-related direct contacts with adults were reported in the 2012 ANRE CE Network Qualtrics survey: Twenty county agents and state specialists held 48 meetings and field days to address drought-related forage management and feeding issues reaching 4,198 producers and agricultural professionals, and 26 agents and specialists reported 2,438 individual contacts through on-farm and phone calls, etc. on drought-related forage management and feeding issues.

3. How was eXtension used?

Wisconsin Cooperative Extension campus and county faculty and staff participate in various communities of practice, engaging with colleagues around the country to improve the educational content of research-based programs and assistance delivered to residents across the state and region. Extension colleagues are connected by email ListServ, blogs and online newsletters, and shared resources such as teleconferences and webinars, eXtension Communities of Practice, and the national Extension Disaster Education Network (EDEN) to quickly address critical and emerging issues such as responding to extreme weather during 2012. Interdisciplinary colleagues and other professionals in this network include University of Wisconsin researchers on the Madison, Platteville, River Falls and Stevens Point campuses and at 11 agricultural research stations.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6636	0	0	0

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

Patent Applications Submitted

Year: 2012
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Agricultural producers are able to respond optimally to drought through provision of timely, accurate information and assistance.
2	Agricultural producers are able to respond optimally to harvesting drought-stricken crops.

Outcome #1

1. Outcome Measures

Agricultural producers are able to respond optimally to drought through provision of timely, accurate information and assistance.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In 2012, the southern half of Wisconsin was on the northernmost boundary of what USDA-ERS termed the "most severe and extensive drought in at least 25 years." About 20% of the nation's cropland was affected by the drought in mid-June; by mid-August, that figure had expanded to about 57%. Wisconsin was not in the heart of this historic drought, but we were full participants. A very dry June across southern and much of central Wisconsin brought the full weight of drought to bear. On July 6, UW-Extension Cooperative Extension specialists and agents met via conference call to discuss how the recent and ongoing dry spell was affecting Wisconsin's \$60 billion annual agriculture industry. Reports varied from around the state, but it was clear that drought conditions posed challenges for all Wisconsin residents - both urban and rural - and farmers needed information to help them make decisions about crops and livestock.

What has been done

Within hours of the conference call, the Extension Responds-Drought 2012 web site found at <http://fyi.uwex.edu/drought2012> was up and running as one resource to deliver timely, research-based information; the site was publicized through traditional and social media. Specialists quickly produced resources for farmers such as assessing feed inventory, crop insurance, and livestock comfort during hot weather; information for homeowners on lawn and garden care; and human health issues during hot weather. The Farmer to Farmer Hay, Forage and Corn List web site <http://farmertofarmer.uwex.edu/> that puts farmers in touch with one another for the purpose of buying and/or selling corn and forage was also publicized through traditional and social media. Links to the Extension Responds-Drought 2012 web site were posted on elected officials' and many partners' web sites including Wisconsin Department of Agriculture, Trade and Consumer Protection and Wisconsin Public Television, which also interviewed extension specialists for a special program on the state's severe drought conditions.

Results

Timely information improves decisions: Google analytics of the Extension Responds-Drought 2012 web site was set up on July 13. Through August 12, the site had more than 8,000 visits - about 5,000 new visitors with 3,000 returning visitors - and received 17,094 page views. Agricultural producers learned to delay prematurely harvesting crops, where to find feed for their livestock, and steps to take to file for crop insurance. Cooperative Extension contributions also helped producers make informed decisions on crop and field management, fertilizer, pesticide and herbicide use, and financial management.

Looking forward, the ANRE program director serves on the Wisconsin Drought Task Force. An extension point person has been designated to work with state specialists, county agriculture and family living educators and partners including the Department of Agriculture, Trade and Consumer Protection and Wisconsin Technical Colleges to coordinate the longer-term response needed. For spring 2013 planting, corn growers can adjust the N rate for their location using the new Soil Nitrate Monitoring Network web site: <http://uwlab.soils.wisc.edu/soilnitratemonitoring>

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
301	Reproductive Performance of Animals
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

Agricultural producers are able to respond optimally to harvesting drought-stricken crops.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	6636

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Green County was classified as a Moderate Drought area in June and elevated to an Extreme Drought area from July through October. The county remained listed as a Severe Drought area through the end of 2012. In mid-July, corn plants looked like they were dying and many farmers panicked and started to chop them for silage. However, the plants were still alive and too high in moisture to properly ferment - resulting in the loss of both yield and quality of the silage.

What has been done

The Green County agriculture agent helped organize three drought-related informational meetings addressing concerns about plant mortality, spider mites in soybeans, nitrates in corn silage, pricing drought-stressed corn silage, alfalfa cutting management, alternative forage options, corn smut and aflatoxins. Extension specialists were brought in to address crop insurance, mental health and stress issues being faced by farmers as a result of the drought. Free nitrate and dry matter testing for fresh corn plants was available to farmers at this meeting through an arrangement with Agri-King Labs and by securing the portable NIR forage testing unit from the Arlington Research Station. This unit was used in Green County for several weeks starting on July 12 and testing was done while farmers waited.

Results

Improving drought-stricken crop yield: Statewide, producers and agricultural professionals were assisted on forage management and feeding practices to minimize drought impacts. Twenty county agents and state specialists held 48 meetings and field days to address drought-related forage management and feeding issues reaching 4,198 producers and agricultural professionals, and 26 agents and specialists reported 2,438 individual contacts through on-farm and phone calls, etc. on drought-related forage management and feeding issues. Among these were more than 350 Green County farmers and agribusiness representatives including veterinarians, lenders, agronomists and nutritionists. The Green County extension partnership tested 38 samples of corn silage for nitrate levels - 11% tested higher than 1,000 ppm for nitrates, which could have been toxic to cattle if not fed correctly. Results were quickly shared with farmers and nutritionists, and on the radio and a web site to help everyone better gauge plant nitrate and moisture levels in cornfields. These actions prevented more than 4,000 acres of drought-stressed corn silage from being harvested prematurely. Rain in late July and August improved the moisture levels in plants and ensured that remaining feed fermented properly in storage.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

The 2012 adverse weather and especially the drought was the worst experienced in many years. The impacts and consequences of the drought will be mild for some, perhaps

devastating for others. Extension did a good job of responding to the immediate issues of the drought. Planning for, coordinating and leading a longer term response effort that focuses on the human/family, production and financial aspects of this challenge is one of Cooperative Extension's primary purposes - to respond proactively now so that as the impacts unfold we can continue to respond appropriately.

The actual impacts, challenges and consequences of the drought won't be known for some time. However, because farmers are often reluctant to discuss problems they are having, we won't know the impacts on individual farm balance sheets and 2012 profitability until early 2013 and we won't know a lot about how lenders will react to potentially much worse financial conditions until the spring of 2013.

Several potential longer term impacts and consequences have been identified including:

- * Anticipatory anxiety and stress for farm owners/managers and their families as they anticipate inadequate feed supplies, need to purchase high cost feed, potential inadequate feed availability, inability to make loan payments (repay loans), etc.
- * Farm families under extreme stress - communication breakdowns, family conflict, depression, perhaps thoughts of suicide, etc.
- * Challenges feeding dairy and livestock - low energy/low quality home grown feeds, high cost purchased feeds, problems associated with different feeds used in rations, etc. etc.
- * Older farm owners (farm families) giving up on dairying - rather than purchasing feed, deciding to leave dairying - possible rushed succession planning, etc.
- * Huge financial losses - loss of liquidity and equity.
- * Loan repayment problems - potential need to liquidate assets to make loan payments.
- * Dealing with and arranging new emergency loans and/or restructuring existing loans.
- * Problems covering current farm expenses (increases in accounts payable, etc.).
- * Potential problems obtaining operating loans to finance 2013 crop inputs/ongoing operations.
- * Challenges with herbicide carryover (2013 crops).
- * Challenges with nutrient management and nutrient carryover (2012 crops not using nutrients applied).
- * Potential issues of groundwater depletion.
- * Challenges of finding resources for outreach to hobby farm owners with livestock that may not have the same network of contacts to find feed for their animals and may have a more intense or different emotional bond to those animals.
- * Threat of fire because of dry timbers surrounding farmsteads.

UW-Extension Cooperative Extension has devoted resources to working collaboratively with partner agencies to address these challenges. The challenges are varied involving production, financial and humans responding to stressful situations. An extension point person has been designated to work with state specialists, county agriculture and family living educators and partners including the Department of Agriculture, Trade and Consumer Protection and Wisconsin Technical Colleges to coordinate the longer-term response needed.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}