

Minnesota Wheat Research and Promotion Council

FOR ADMINISTRATIVE USE

Program Area Code Proposal Code

RESEARCH PROPOSAL GRANT APPLICATION

1. NAME AND ADDRESS OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE

**Name:** Regents of the University of Minnesota  
**Address:** Sponsored Projects Administration  
 454 McNamara Alumni Center, 200 Oak Street SE  
 Minneapolis, MN 55455-2070

2. TITLE OF PROPOSAL **Minnesota Small Grain Pest Survey**

3. PRINCIPAL INVESTIGATOR(S)

Doug Holen

PI# 2 Name: Phil Glogoza

Cooperators: Jochum Wiersma, Marcia McMullen,  
 and Ruth Dill-Macky

4. PI #1 BUSINESS ADDRESS

UM Extension Regional Office – Morris  
 WCROC  
 46352 State Hwy 329  
 Morris, MN 56267

5. PROPOSED PROJECT DATES (calendar years)

January 1, 2012 to December 31, 2014

Note: Research Reports are Due November 15th of Each Year

6. TOTAL PROJECT COST

2012 = \$19,725  
 2013 = \$20,897  
 2014 = \$20,568  
 3 year Total = \$61,190

7. PI #1 PHONE NO.

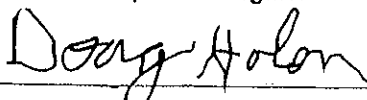
Office=320-589-1711  
 Cell=218-770-4396

8. RESEARCH OBJECTIVES: (List objectives to be accomplished by research grant)

1. Area #1 Red River Valley. Weekly scout, sample and represent 20-30 wheat fields across the region documenting disease and insect vectors in Hard Red Spring Wheat during the 2012-2014 growing seasons.
2. Area #2 West Central, Central, and Southern Minnesota. Weekly scout, sample and represent 20-30 wheat fields across each region documenting disease and insect vectors primarily in Hard Red Spring Wheat along with some winter wheat, oat and barley fields during the 2012-2014 growing seasons.
3. Collate information and prepare data submission with the NDSU IPM survey and reporting project.
4. Alert producers, consultants and researchers of pest incidence and severity in timely manner with pest updates and survey reports.
5. Work with U of MN St. Paul pathology lab in submitting samples for regional/national monitoring as well as race identification.

Attach a 2-page detailed discussion of importance of the proposal to wheat profitability; how study complements previous research in area; procedures to be used; and competency of the research group in achieving research objectives. (Please keep the proposal concise, only 2 pages will be provided reviewers).

Signature Of Principal Investigator



Date

11-23-2011

Phone Number

Office=320-589-1711  
 Cell=218-770-4396

Signature Of Authorized Representative



Title

Sr. Associate Director

Date

12/06/2011

Address Of Authorized Representative

Kevin McKoskey, Sr. Associate Director, Office of Sponsored Projects Administration  
 450 McNamara Alumni Center, 200 Oak Street SE, Minneapolis MN 55455-2070

Phone Number

612-624-5599

# Minnesota Wheat Research and Promotion Council

## RESEARCH PROJECT PROPOSAL

### (2-pages maximum)

**Project Title:**

Minnesota Small Grain Pest Survey

**Importance:**

Spring wheat is a major crop for producers in northwest Minnesota and small grains have had increasing interest from producers across the rest of the state for the past eight years. Fungal diseases, along with insect pests have long been detrimental to the quantity and quality of the crop. Much of our small grain programming and keys to successful production, centers on the timely and correct identification of these disease and insect problems followed by implementation of appropriate management options. The goal of this initiative is to continue the IPM pest survey that was previously conducted by the Minnesota Department of Agriculture (MDA) in collaboration with the National Agriculture Statistics Service. The expected outcomes of this survey are timely alerts for small grains producers such that sound economic control options can be implemented. We propose to integrate this survey with the ongoing efforts in North Dakota that are coordinated by NDSU's IPM Survey.

This project will allow for small grain pest identification across the state resulting in early producer notification through Extension media in combination with NDSU's already established program. Samples collected will also assist in regional, state, and national representation (mapping) of pests found. The U of MN small grains pathology lab will collaborate by assisting in the identification of races of some pathogens collected. Data will assist breeders, pathology university faculty and extension educators with timely information for management education and research direction.

**Background:**

We have, both throughout the decades and more recently, had small grain diseases and insect pests cause economic losses in small grain production. Fusarium head blight (FHB) in the 1990s, leaf rust and FHB, throughout the 2000s, and more recently stripe rust and bacterial leaf streak. Barley yellow dwarf virus, wheat streak mosaic virus, and aster yellows have been reported and monitored in the past 10 years with insect vectors as well as the monitoring of Hessian fly, orange midge, and aphids.

Some of the above mentioned pests and pathogens are newly identified as significant production concerns while others are perennial obstacles. We have over the years experienced significant crop losses due to diseases that were found and identified too late to allow for management practices to be incorporated. There have also been many acres treated annually for pests or pathogens not present or below economic thresholds.

This project is proposed to fill a void left by the vacancy of the University of Minnesota's State Extension Pathologist for Small Grains, assist the individual in that position when hired, and cover for the loss of MDA's crop pest survey.

**Relationship to Past Projects:**

This proposal is a continuation of the 2012 pilot year project but builds on the defunct Minnesota Department of Agriculture crop pest survey. Doug Holen and Jochum Wiersma have been providing small grain pathology programming and in-season identification and management information for the past three seasons.

**Procedures:**

Procedures: Scout 1 will be housed in Crookston under the direction of Jochum Wiersma, and Scout 2 will be located in Fergus Falls with supervision from Doug Holen. Each scout will have an area in which they are responsible to monitor for small grain pests. We envision that each scout will begin with training alongside the NDSU scouts in Carrington, ND around June 1 and continue scouting until approximately the third week of August. The MN survey will be conducted according to the same protocol followed by the NDSU IPM survey so the output can be merged and reflect a regional effort that includes nine million acres of wheat and barley. The goal is to have each scout survey 7-10 fields per day for a total of 20-30 per week. Pests will be identified on site, assess the extent of their presence, take pictures of field developments, and collect samples for identification when needed. Samples of foliar diseases will be forwarded to the St. Paul small grains pathology lab for species confirmation and race identification when that information is deemed necessary. This information will be reported for the Midwest and nationally. Phil Glogoza will compile the data and work with NDSU faculty to provide a regional summary. Weekly survey data will be compiled and displayed through geo-referenced mapping software to graphically summarize crop and pest status over the entire Minnesota-North Dakota region. Phil will also take the lead in using the collection technology, such as the GPS-GIS linkage to survey data. The weekly survey maps, with commentary will be distributed through web-based platforms, including on-line news updates,

newsletters, archived maps for future retrieval, and possibly other social media. All information distribution will include partnerships with UMN Extension, NDSU, MAWG, and others.

**Research Group:**

University of Minnesota = Doug Holen, Phil Glogoza, Jochum Wiersma and Ruth Dill Macky  
North Dakota State University = Marcia McMullen and Janet Knodel

**Regional Linkages to Other Research Activities:**

This project will tie into the NDSU IPM survey program that has a well established history and reputation. That program will have five scouts combined with the two proposed Minnesota scouts. With the inclusion of the new U of MN state extension small grain pathologist and the St. Paul pathology lab, findings can be reported to regional and national reporting outlets for representation.

**Additional Sources of Funding:**

None

**Budget Explanation:**

Salaries: 2 individuals for 12 weeks averaging 25 hours per week (600 total hours at \$15.50/hr)

Travel Year 1 (2012): Rent 2 mid size cars from U of MN motor pool for 3 months each  
\$693 per month per vehicle = \$4,158  
Estimated total miles driven by both surveyors – 15,000 miles.  
15,000 miles at \$.17/mile = \$2,550

Travel Year 2 (2013): Rent 2 mid size cars from U of MN motor pool for 3 months each  
\$693 per month per vehicle = \$4,158  
Estimated total miles driven by both surveyors – 15,000 miles.  
15,000 miles at \$.19/mile = \$2,850

Travel Year 3 (2014): Rent 2 mid size cars from U of MN motor pool for 3 months each  
\$693 per month per vehicle = \$4,158  
Estimated total miles driven by both surveyors – 15,000 miles.  
15,000 miles at \$.20/mile = \$3,000

\*\*\*Vehicles will be leased from U of MN Fleet Services located in Minneapolis. Prices represent best anticipated projections.

Publication cost: data compilation and representation (U of MN/NDSU)

Computers: Each surveyor will be equipped with a netbook computer (replacements purchased in 2013), GPS locator, and car charger for data collection

Supplies: sweep nets, clipboards, bug repellent, plastic boots, disposable pants, mud scraper, maps, plant presses, collection vials and rubbing alcohol, hand sanitizer, collection baggies, postage

**All Other costs:** Training session (full day) for 2 surveyors and 3 supervisors with NSDU in Carrington.

## RESEARCH PROJECT PROPOSAL BUDGET

Project Title: Minnesota Small Grain Pest Survey			
Principal Investigator(s) / Project Directors(s)	Funds Requested For		
	Year 1 (2012)	Year 2 (2013)	Year 3 (2014)
Doug Holen, Phil Glogoza, Jochum Wiersma, Marcia McMullen, Ruth Dill-Macky			
A. Salaries and Wages			
1. Co-principal Investigator(s)			
2. Senior Associates			
3. Research Associates - Post Doctorate			
4. Other Professionals	9,498	9,746	10,038
5. Graduate Students			
6. Prebaccalaureate Students			
7. Secretarial - Clerical			
8. Technical, Shop and Other			
B. Fringe Benefits	919	943	972
C. Nonexpendable Equipment (Planting and harvesting equipment use)			
D. Materials and Supplies	600	400	400
E. Travel	6,708	7,008	7,158
F. Publication Costs	1,500	1,500	1,500
G. Computer Costs		800	
H. All Other Direct Costs (Attach supporting data) See Attached	500	500	500
<b>TOTAL AMOUNT OF THIS REQUEST (per year)</b>	<b>\$ 19,725</b>	<b>\$ 20,897</b>	<b>\$ 20,568</b>