



# Minnesota Wheat Research and Promotion Council

## RESEARCH PROPOSAL GRANT APPLICATION

<b>1. NAME AND ADDRESS OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE</b>  <b>Name:</b> Regents of the University of Minnesota <b>Address:</b> Sponsored Projects Administration 450 McNamara Alumni Center, 200 Oak Street SE Minneapolis, MN 55455-2070		
<b>2. TITLE OF PROPOSAL</b> Southern Minnesota Small Grains Research & Outreach Project		
<b>3. PRINCIPAL INVESTIGATOR(S)</b>  <div style="text-align: center;">Dr. Jared J. Goplen</div> <hr/> <b>PI# 2 Name:</b> Dr. Jochum J. Wiersma  <hr/> <b>PI# 3 Name:</b>	<b>4. PI #1 BUSINESS ADDRESS</b>  Morris Regional Extension Office 46352 State Hwy 329 Morris, MN 56267	
<b>5. PROPOSED PROJECT DATES (calendar years)</b> January 1, 2022 – December 31, 2022 <small>Note: Research Reports are Due November 15th of Each Year</small>	<b>6. TOTAL PROJECT COST</b>  \$20,732	<b>7. PI #1 PHONE NO.</b>  (507) 829-0614
<b>8. RESEARCH OBJECTIVES:</b> (List objectives to be accomplished by research grant) Our primary objectives are to assist and support farmers in central and southern Minnesota in maximizing small grain yield, quality, and profitability by 1) improving variety selection, 2) alerting producers of disease and pest problems during the growing season, 3) maximizing the return on crop inputs, and 4) refining and disseminating best management practices for central and southern Minnesota.  To accomplish these objectives, we propose to: 1) Evaluate approximately 50 spring wheat cultivars, 24 winter wheat cultivars, 18 winter cereal rye cultivars, 25 oat cultivars, and 10 barley cultivars for yield, quality, and agronomic adaptation in southern MN (Note that this proposal only funds activities related to the wheat trials). 2) Utilize variety trial locations as sentinels for insect and disease pest issues as they arise. 3) Hold 1 virtual winter small grain workshop held as part of the UMN Extension "Strategic Farming" series. 4) Host 6 in-person winter small grain workshops at Benson, Cold Spring, Floodwood, Le Center, Rochester, and Slayton. 5) Host 5 small grain field tours in June at variety trial locations in southern MN to feature results from variety trials as well as utilize plots to demonstrate disease and insect pest 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).		
<b>Signature Of Principal Investigator</b> 	<b>Date</b> 1/4/2022	<b>Phone Number</b> 507-829-0614
<b>Signature Of Authorized Representative</b> 	<b>Title</b> Senior Grants & Contracts Officer	<b>Date</b> 1/5/2022
<b>Address Of Authorized Representative</b>  Brett Carlson, Sponsored Projects Administration, 450 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, MN 55455-2070		<b>Phone Number</b> 612-624-5599

# Minnesota Wheat Research and Promotion Council

## RESEARCH PROJECT PROPOSAL

### (2-pages maximum)

**Project Title:** Southern Minnesota Small Grains Research & Outreach Project

**Importance of this project to the profitability of wheat producers:**

In recent decades, small grains have often been grown in central and southern Minnesota for reasons other than an enterprise's direct profitability. Small grains in these regions are often grown for reasons related to summer manure applications, straw production, forage/cover-crop establishment, or tiling projects. The combination of weed and insect resistance issues and interest in diversifying crop rotations to improve soil health has inspired more farmers in these regions to consider growing small grains. Much of the production in southern and central Minnesota could be improved by incorporating more intensive management strategies and improved variety selection. Our research and demonstration plots have documented the ability to grow small grains in central and southern Minnesota with high yield and quality. Our goals are to assist and support farmers in central and southern Minnesota in growing small grains by improving variety selection and alerting farmers of potential disease and pest problems. By assisting farmers in managing crop inputs and developing best management practices to maximize yield and quality, it is our goal to improve and expand production in these agricultural regions and make small grains more productive for southern Minnesota farmers.

**Procedures:**

We propose the establishment of variety performance trials for HRSW, HRWW, barley, rye, and oats in central and southern Minnesota for the 2022 growing season. Proposed trial locations include: Benson, Becker, Le Center, New Ulm, and Rochester (Table 1). As in the past, the variety trials will serve as sentinels for detecting insect and disease pests which we use to alert small grain producers of in-season management issues. The sentinel plots also provide an invaluable tool to use during summer field days as hands-on demonstrations to teach small grain producers and crop consultants important pest identification skills.

Table 1 – On-Farm locations in central and southern Minnesota in 2022

Location	HRWW	Rye	HRSW	Barley	Oats
Le Center	x	x	x	x	x
Becker	x	x	x	x	x
Benson			x		
Rochester <sup>1</sup>					x
New Ulm <sup>1</sup>				x	

<sup>1</sup> Not funded through this grant application

Farmer-cooperators carry out all field operations while our research group takes care of planting, weed control, data collection, and harvest. All trial locations utilize a randomized complete block design with three replications. Experimental units measure 5 ft. by 12 ft. and are seeded with an Almaco plot drill. All trials are harvested and subsampled with a Zurn 150 plot combine. Winter cereals were seeded in October of 2021, while spring cereals will be seeded in April.

Summer field days will be planned to take place at variety trial locations at Becker, Benson, Le Center, New Ulm, and Rochester, MN during June 2022. Winter small grain meetings will be held in central and southern Minnesota, including Benson, Cold Spring, Floodwood, Le Center, Rochester, and Slayton. In addition to the in-person workshops, a virtual small grain workshop option will be included as part of the “Strategic Farming: Let’s Talk Crops” program on February 23<sup>rd</sup>. The “Strategic Farming” program will be recorded, closed captioned, and made available for later viewing online. Both field days and virtual meetings will feature results from variety trials and other University of Minnesota research as part of our statewide extension programming efforts in small grains.

**Regional linkage to other research activities:**

This project will be used to document pest issues arising with the Minnesota pest scouting survey. The variety trials will be combined with other southern MN locations of Dr. James Anderson’s wheat breeding program, including Lamberton, Morris, St. Paul, and Waseca. This project also links to the winter rye project and the barley and oat breeding programs

for variety evaluations. All variety trial results will be included in the annual *Minnesota Field Crop Trials* bulletin.

**List current or potential other funding sources for this project:**

The winter rye project, barley breeding program, oat breeding program, and spring wheat breeding program, all share in technical labor and travel expenses related to plot maintenance, harvest, and evaluation.

**Research Group:**

Dr. Jared J. Goplen, UMN Extension Educator – Crops  
 Dr. Jochum J. Wiersma, UMN Extension Small Grain Specialist  
 Dr. James A. Anderson, UMN Wheat Breeder  
 Dr. Kevin P. Smith, UMN Barley and Oat Breeder  
 Ron Faber and the Sand Plains Research Farm  
 Cooperating producers: Ron Pomiji/Ruth Hoef, Scott Lee, Ryan Miller, and Nathan Gieseke

**Relationship to past projects:**

This research team has worked with core groups of producers in southern Minnesota for the past 15 seasons to work towards increasing yield, quality, and profitability through research and education. Our core audience in southern Minnesota continues to reiterate the importance of continuing our research and educational efforts in genetics and agronomic management, especially as small grains become a more important piece in mitigating issues affecting corn and soybean production, including resistant weeds and insects, soybean cyst nematode, and other crop diseases. Our small grain educational efforts continue to reach a wider audience, expanding the impact that this ongoing program has on small grain production in Minnesota.

**Estimate the budget requirements:**

Costs consist primarily of expenses related to establishment, maintenance, data collection, and harvest of trials, in addition to meeting and field day expenses as outlined below. Proposed expenses are related only to the wheat research and educational components of this proposal. Costs are only shared with rye, barley, and oat projects when travel and plot maintenance expenses are required for the wheat portion of this project.

<b>Cost Center</b>	<b>Description</b>	<b>Amount</b>
<i>Labor</i>		
Technical	40 hours @25.00/hr	\$ 1,000.00
Student	120 hours @15.00/hr	\$ 1,800.00
Communication specialist P. Bongaard	Work on virtual programs, accessibility of recorded presentations, website updates, etc.	\$ 2,247.00
<i>Fringe Benefits</i>		
Technical	28.7 %	\$ 287.00
Student	7.5 %	\$ 135.00
Communication specialist	33.5 %	\$ 753.00
<i>Non-expandable equipment</i>		
Materials & Supplies	Envelopes, fertilizer, seed, fungicides etc.	\$ 1,500.00
<i>Travel</i>		
Mileage for planting/harvest	2,500 miles @ \$1.75/ mile	\$ 4,375.00
Mileage for plot maintenance/note taking/etc.	3,829 miles @ \$0.585/mile	\$ 2,240.00
Lodging & Meals	6 overnight stays (lodging and per diem)	\$ 1,095.00
<i>Other Direct Cost</i>		
Cooperator reimbursements	\$500/acre charge (4.0 ac)	\$ 2,000.00
Field Day and Virtual Meetings	Food, Publicity, Closed Captioning, etc.	\$ 3,300.00
	<b>TOTAL</b>	<b>\$20,732.00</b>

**References:**

# Minnesota Wheat Research and Promotion Council

## RESEARCH PROJECT PROPOSAL BUDGET

<b>Project Title:</b> Southern Minnesota Small Grains Research & Outreach Project			
<b>Principal Investigator(s) / Project Director(s)</b>  Dr. Jared J. Goplen Dr. Jochum J. Wiersma	<b>Funds Requested For</b>		
	Year 1 (2021)	Year 2 (2022)	Year 3 (2023)
A. Salaries and Wages	\$	\$	\$
1. Co-principal Investigator(s)			
2. Senior Associates			
3. Research Associates – Post Doctorate			
4. Other Professionals		2,247	
5. Graduate Students			
6. Prebaccalaureate Students		1,800	
7. Secretarial - Clerical			
8. Technical, Shop and Other		1,000	
B. Fringe Benefits		1,175	
C. Consulting and Professional Services			
D. Supplies and Services		1,500	
E. Travel		7,710	
F. Sub-Contracts			
G. Repairs & Maintenance			
H. Rentals & Lease		2,000	
I. Other Expenses		3,300	
<b>TOTAL AMOUNT OF THIS REQUEST (per year)</b>	<b>\$</b>	<b>\$ 20,732</b>	<b>\$</b>