

Grant Code: AP6295

Title: Small Grains Research Report – Bringing in the grower for Cereal School Attendance

Personnel: Dr. Juliet Marshall, Ext. Crop Mgmt. Specialist (SC and E Idaho)
Belayneh Yimer – Research Specialist
Tod Shelman – Scientific Aide II
Linda Jones – Technician
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Justification/Rationale:

Idaho is one of the largest cereal producers in the United States. Keeping growers informed of new varieties, agronomic performance, end-use quality, and insect and disease issues is a major part of the Small Grains Programs within the College of Agricultural Sciences (CALs) at the University of Idaho. Providing tools to enhance the economic performance of cereal producers provides economic returns to all sectors that benefit from a healthy wheat and barley economy. In the past, the Small Grains Research Report has been published on-line on the website (<http://www.uidaho.edu/extension/cereals/scscidaho>), on CD-Rom, and in hard copy format. Growers were highly encouraged to utilize the availability of electronic media, yet there were many unused copies of previous reports on CD still sitting in boxes at the Idaho Falls and Aberdeen offices. Prior to 2016, over 400 hard copies were printed in January with complete dispersal achieved by August. Every time we hold cereal schools throughout the region, the number one reason given for attendance is to listen to the Extension variety report and to pick up a copy of the newly released SGR.

The physical copy of the SGR should remain free to the grower – this provides a huge incentive for growers to attend the Cereal School. The cereal school platform is a wonderful delivery tool for information transfer for all of our CALs research projects as well as for the public and private breeding programs, IGPA and the commodity commissions.

Objectives:

The SGR draws many growers to attend the UI Cereal Schools. Growers and consultants prefer the hard copy of the SGR to peruse at their leisure or to reference quickly. The Objective is to continue providing the SGR for free to assist in dissemination of the research findings of all faculty, and as an incentive to get growers to attend Cereal School. This sustained attendance at Cereal School benefits all – researchers trying to disseminate their research results, extension faculty making contacts with stakeholders, industry representatives selling products, as well as the IGPA and commodity commissions that provide updates to growers and can increase their contact hours with producers.

Methods/Plan of Work:

Copies of the SGR will be made available to producers at all Cereal Schools. The 2022 estimate from Caxton Printing in Caldwell was \$6530.00 for 325 copies (\$20 per book without estimates for shipping or sales tax). There is no separate funding for this expense. In 2016, we were going to charge \$15 per copy at the cereal schools, but decided against it due to the difficulty in collecting the charges. For 2020 SGR, Frank Curtis (Limagrain Cereal Seeds, \$2000), Scoular (\$500), Thresher (\$500) and Robin English (Andersons \$500) volunteered to help sponsor the publication in order to continue providing the books to attendees free of charge. The Idaho

Barley Commission also volunteered to support the 2020 SGR. We will solicit all for their sponsorship in 2023 as well. We currently have commitments for this year's publication from Molson Coors and The Andersons.

Duration: Continuous

Cooperation/Complementation: Limagrain Cereal Seeds, The Andersons, Idaho Barley Commission, Anheuser-Busch, Coors

Anticipated Benefits/Expected Outcomes/Information Transfer:

Idaho wheat producers will receive the most recent wheat variety performance information to improve production efficiency, increase economic returns, and maintain their competitiveness. Information on variety performance is shared with growers and industry personnel through cereal schools, published materials, wheat nurseries, demonstrations, field tours and the Internet.

Literature Review: none

References:

Li, X., Guo, T., Bai, G., Zhang, Z., Marshall, J.M., Garland-Campbell, K.A., Yu, J. 2022. Genetics-inspired data-driven approaches explain and predict crop performance fluctuations attributed to changing climatic conditions. *Mol Plant*. 2022 Feb 7;15(2):203-206. doi: 10.1016/j.molp.2022.01.001. Epub 2022 Jan 5

Marshall, J.M., Yimer, B., Shelman, T., Jones, L., Hatch, J., Moll, M., and Windes, S.M. 2022. 2021 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. University of Idaho, Idaho Agricultural Experiment Station Bulletin. CIS BUL 205. 159 pp

Marshall, J.M., Yimer, B., Shelman, T., Jones, L., Baldwin S. A., Hogge, J., Hatch J., Moll, M., and Windes S. 2021. 2020. Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 204. 163 pp.
[sgr-2020-final-feb-17.pdf \(uidaho.edu\)](#)

Marshall, J.M., Yimer, B., Shelman, T., Jones, L., Arcibal, S., Hogge, J., Moll, M., Jackson, C., and O'Brien, K. 2020. 2019 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 202. 150 pp. https://www.uidaho.edu/-/media/UIIdaho-Responsive/Files/Extension/topic/cereals/scse/2019/small-grains-report_2019.pdf

Marshall, J.M., Jackson, C.A., Shelman, T., Jones, L., Arcibal, S., and O'Brien, K. 2019. 2018 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 196. 150 pp. <http://www.cals.uidaho.edu/edComm/pdf/RES/RES196.pdf>

Marshall, J.M., Jackson, C.A., Shelman, T., Jones, L., Arcibal, S., and O'Brien, K. 2018. 2017 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and

Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 193. 142 pp. <http://www.cals.uidaho.edu/edComm/pdf/RES/RES193.pdf>

Marshall, J.M., Jackson, C.A., Shelman, T., Jones, L., and O'Brien, K. 2017. 2016 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 191. 139 pp. <http://www.cals.uidaho.edu/edComm/pdf/RES/RES191.pdf>

Marshall, J.M., Jackson, C.A., Shelman, T., Jones, L., and O'Brien, K. 2016. 2015 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 188. 133 pp. <http://www.cals.uidaho.edu/edComm/pdf/RES/RES188.pdf>

Marshall, J.M., Jackson, C.A., Shelman, T., Jones, L., and O'Brien, K. 2015. 2014 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 186. 125 pp.

Marshall, J.M., Jackson, C.A., Shelman, T., Beck, L., and O'Brien, K. 2014. 2013 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 182. 116 pp.

Marshall, J.M., Jackson, C.A., Shelman, T., Beck, L., and O'Brien, K. 2013. 2012 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 181. 130 pp.

Marshall, J.M., Jackson, C.A., Shelman, T., Beck, L., and O'Brien, K. 2012. 2011 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. Idaho Agricultural Experiment Station. UI Research Bulletin 180. 101 pp.

FY2024

COMMODITY COMMISSION BUDGET
Principal Investigator: *Marshall*

Allocated by <u>Idaho Wheat Commission</u>	during FY2021	\$	2,000
(Commission/Organization)			
Allocated by <u>Idaho Wheat Commission</u>	during FY2022	\$	2,000
(Commission/Organization)			

REQUESTED SUPPORT:		<i>Awarded for FY2023</i>	<i>Requested for FY2024</i>
Budget Categories			
(10) Salary (staff, post-docs, et	NOTE: Faculty salary/fringe not allowed	\$ -	\$ -
(12) Temporary Help		\$ -	\$ -
(11) Fringe Benefits		\$ -	\$ -
(20) Travel		\$ -	\$ -
(30) Other Expenses		\$ 2,000	\$ 2,000
(40) Capital Outlay >\$5k		\$ -	\$ -
(45) Capital Outlay <\$5k		\$ -	\$ -
(70) Graduate Student			
Tuition/Fees		\$ -	\$ -
TOTALS		\$ 2,000	\$ 2,000

TOTAL BUDGET REQUESTED FOR FY2024:

\$ 2,000

BREAKDOWN FOR MULTIPLE INDEXES:

Budget Categories	<i>Marshall</i>			
(10) Salary (staff, post-docs, et	\$	-	\$	-
(12) Temporary Help	\$	-	\$	-
(11) Fringe Benefits	\$	-	\$	-
(20) Travel	\$	-	\$	-
(30) Other Expenses	\$	2,000	\$	-
(40) Capital Outlay >\$5k		\$	-	\$
(45) Capital Outlay <\$5k	\$	-	\$	-
(70) Graduate Student				
Tuition/Fees	\$	-	\$	-
TOTALS	\$	2,000	\$	-
Total Sub-budgets				\$ 2,000

Reimbursement costs for the publication of the Small Grains Report. Current estimate from Caxton printing is \$6530 for publication alone (without shipping fees or sales tax) for 325 copies.

ANNUAL REPORT

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Accomplishments:

Idaho is one of the largest cereal producers in the United States. Keeping growers informed of new varieties, agronomic performance, end-use quality, and insect and disease issues is a major part of the Small Grains Programs within the College of Agricultural Sciences (CALs) at the University of Idaho. The Extension Variety Trials have been conducted at the University of Idaho for more than 30 years, the results of which are useless unless delivered into the hands of those populating the agricultural industry – growers, consultants, breeders, agronomists and those in the end-use markets. Providing tools to enhance the economic performance of cereal producers provides economic returns to all sectors that benefit from a healthy wheat and barley economy. In the past, the Small Grains Research Report has been published on-line on the website (<http://www.uidaho.edu/extension/cereals/scseidaho>), on CD-Rom and in hard copy format. Growers were highly encouraged to utilize the availability of electronic media, yet there are many unused copies of previous reports on CD still sitting in boxes at the Idaho Falls and Aberdeen offices. Annually, over 400 hard copies of the SGR report were printed in January with complete dispersal achieved by August. Every time we hold cereal schools throughout the region, the number one reason given for attendance is to listen to the Extension variety report and to pick up a copy of the newly released SGR.

Therefore, the physical copy of the SGR should remain free to the grower – this provides a huge incentive for growers to attend the Cereal School. The cereal school platform is a wonderful delivery tool for information transfer for all of our CALs research projects as well as for the public and private breeding programs, IGPA and the commodity commissions. We look at it as an anchor that helps the Idaho Ag Experiment Station deliver results of all of our researchers, meeting the mandate of the Cooperative Extension Service.

Wheat trials were conducted at thirteen winter and ten spring locations throughout the state for harvest in the summer of 2022. Results for all trials in the southern / southeastern production area were analyzed and presented in the annual Research Bulletin “2022 Small Grains Report”. The report contains agronomic and end-use quality information on varieties and advanced breeding lines from public and private institutions. In addition, the report includes location information for trials produced on University Research Stations and on grower fields (planting dates, seeding rate, fertilizer inputs, harvest dates, etc). The Results and Discussion provides detailed information on growing conditions, disease and insect issues affecting yield and quality, yield to nitrogen ratios and yield performance of varieties. Brief descriptions of named, released varieties are provided to give information on specific characteristics (general performance, disease resistance, or other distinguishing features associated with a specific genotype). The

relative performance of each line is given in the graphs of “Yield as a Percentage of Average” at the end of each section. While small plots are not always predictive of variety performance on-farm, the ability to examine the performance of new lines against industry standards assists in the advancement of the industry while facilitating technology transfer.

One of the advantages of the integrated Cereals program is the ability to incorporate disease screening results in with the SGR. This year’s SGR contains results from Fusarium head blight trials supported via the USDA’s US Wheat and Barley Scab Initiative. (This material is based upon work supported by the U.S. Department of Agriculture, under Agreement No. 59-0206-4-042. This is a cooperative project with the U.S. Wheat & Barley Scab Initiative.) Results are also provided from the dwarf bunt nursery hosted by Utah State University.

Projections: Growers, consultants, industry representatives, and public and private breeders utilize the SGR report as a tool to advance research, new varieties, and agronomic practices. The SGR report provides an anchor to the Cereal Schools and field days to draw attendance, facilitating technology transfer and communication from the UI, IBC, IWC and Grain Producers organization to the growers that we represent. Results are presented at cereal schools, field days and many other grower meetings.

Publications:

Marshall, J.M., Yimer, B., Shelman, T., Jones, L., Hatch, J., and Windes, S.M. 2022. 2021 Small Grains Report, Southcentral and Southeast Idaho Cereals Research and Extension Program. University of Idaho, Idaho Agricultural Experiment Station Bulletin. Research Bulletin 205. 159 pp. <https://www.uidaho.edu/extension/cereals/scseidaho/sgr>

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