

Washington Grain Commission
Wheat and Barley Research Annual Progress Reports and Final Reports

Project #: 4127-1604
Progress Report Year: *1 of 3*
Title: Evaluation of Wheat Varieties
Researcher: Clark Neely
Cooperators: Aaron Esser, Arron Carter, Kim Garland-Campbell, Mike Pumphrey,

Executive summary: During 2019, leadership of the Variety Testing Program transitioned from Aaron Esser to Clark Neely who assumed responsibilities in August. Of the 24 SWWW, 16 HRWW, 18 SWSW, and 18 HRSW trials planted, a total of five trials were lost due to equipment issues or high variability within the trial. Persistent spring rains delayed spring plantings and rainfall in August/September further delayed harvest. Delayed harvest complicated planting and thus delayed planting 2020 winter trials in many cases. Still, all winter locations were planted with the exception of Pasco, due to a last minute cancellation from the cooperator. All 2019 variety trial data was uploaded by November 22 on to the WSU Small Grains website (<http://smallgrains.wsu.edu>). The final report with additional information is being finalized for the official 2019 booklet and should be completed by mid-January 2020. Scheduling 2020 field tours of variety trials is currently in progress.

Impact: With over 90% of Washington wheat planted with certified seed, variety selection is a major decision on most farms and influences not only yield potential, but other management factors (input costs) such as insect and disease (pesticide applications), fertility, and herbicide program. The WSU variety testing program provides critical and unbiased information for growers to make informed decisions on which wheat varieties are best adapted for their environment and management practices. On average in 2019, there was an 11, 8, 12, and 7 bu/a spread between the highest yielding SWWW variety and the trial average in the >20", 16-20", 12-16", and <12" precipitation zones, respectively. At \$5.00/bu, potential additional income generated ranges from \$35 to \$60/acre. Multiplied across the 2.2 million acres of harvested wheat, these variety trials have the potential to generate approximately \$105 million across the state. In addition to grower benefits, breeders, seed companies and seed dealers rely on this information to make decisions regarding experimental line advancement, varietal releases/seed increases, and marketing strategies. Samples and data generated from these trials are also critical for wheat quality testing and development of the Preferred Wheat Varieties brochure. This information is important for promoting adoption of high-quality wheat varieties and helps secure overseas markets.

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WGC project title: Evaluation of Wheat Varieties
Project PI(s): Clark Neely
Project initiation date: 07-01-2019
Project year (X of 3-yr cycle): 1 of 3

Objective	Deliverable	Progress	Timeline	Communication
1. Conduct representative and objective wheat variety field trial evaluations at locations that represent major production areas of Washington.	a) 24 soft winter wheat trials; 48-60 entries/trial	a) 2020 winter trials planted; 2019 results finished Collaborative trials are continuing with OSU at Eureka and Walla Walla.	Trials are planted in the spring or fall, data results are available to growers at the end of the harvest season. Field tours in summer.	Results from the variety trials are communicated via Extension programming and are detailed under Objective #4.
	b) 16 hard winter wheat trials: 18-30 entries/trial	b) 2020 winter trials planted; 2019 results finished		
	c) 18 soft spring wheat trials; 24 entires/trial	c) 2019 results finished		
	d) 18 hard spring wheat trials; 30-36 entires/trial	d) 2019 results finished		
2. Entries in trials will include: currently grown varieties and promising advanced breeding lines from the major public and private breeding programs in the region.	All widely grown, commercially available varieties and promising experimental lines are included in trials.	2020 winter trials; 36% public, 64% private. Every major breeding program in the PNW is actively participating in the VTP. 2020 winter entries, locations, and maps can be viewed on the variety testing website.	2020 winter entries were confirmed by August 15th and spring enties will be confirmed by February 15th.	Solicit winter entries by August 1 and spring entries by Februay 1. Maintain positive relationship with breeding programs to ensure future participation.
3. Provide access to variety trials and harvested grain enabling other researchers and supporting projects to gather information from the trials.	Participation from other projects/ programs.	Cooperation with breeders, pathologists, entomologists, quality lab, FGIS, seed dealers, WSCIA, other universities, and Extension.	Ongoing cooperation and collaboration that fit with timelines and other listed objectives.	Quality results in G&E study and preferred variety pamphlet, falling number results presented by corresponding project, disease ratings pesented in seed buyers guide and variety selection tool, VTP data used for variety release and PVP applications.
4. Deliver an Extension education program to make the results and interpretation of the variety trials available to growers, the seed industry, and other clientele.	a.) Grower meetings	Several planned for 2020 (Adams Co. Grower Meeting, PNW Farm Forum, Wheat Academy, etc.)	Will attend when invited	Attend in person and present results through powerpoint presentation and handouts.
	b.) Field Tours	21 planned for 2020	June-July 2020	*List of Field Days provided below; provide paper handouts of data
	c.) Email List Serv	2019 results delivered	October through December	Email list serve: Data sent to 213 members as it becomes available
	d.) Website	Up to date with 2019 data	October through December	Over 20,000 pagviews of the VTP section of the small grains website.
	e.) Annual Report	All data analysis is complete; site management information and supplemental tables being added.	January 2020	The annual report will be published as a WSU technical report online and hard copy.
	f.) WSCIA Seed Buyers Guides	Tables in preparation	January-February 2020	2020 Seed Buyers Guide to be published in January-February 2020
	g.) Wheat Life	Spring VT article completed; Winter VT article to be written in April 2020	Spring VT article: Jan 2020 Winter VT article: April 2020	Articles published in Wheat Life in February and May 2020.
	h.) Variety Selection Tool (smallgrains.wsu.edu)	Selection tool needs to be updated with 2019 data	January-February 2020	The variety selection tool has over 6,000 page views in 2019.
*Anticipated 2020 Wheat Field Days: Horse Heaven, Ritzville, Dusty, Connell, Lind, Harrington, St. Andrews, Eureka, Walla Walla, Dayton, Moses Lake, Creston, Reardan, Mayview, Anatone, Fairfield, St. John, Lamont, Bickleton, Farmington, Palouse				

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