

**Washington Grain Commission  
Wheat and Barley Research Annual Progress Report**

**Project #:** 4127-1604

**Progress Report Year:** 3 of 3

**Title:** Evaluation of Wheat Varieties

**Investigator:** Aaron Esser

**Executive summary:** In 2018, the Cereal Variety Testing Program (VTP) conducted 24 soft winter, 16 hard winter, 18 soft spring, and 18 hard spring wheat variety trials across eastern Washington. The total number of individual wheat plots evaluated was 8,028. Entries in the trials included submissions from 12 different breeding programs/cooperators. Variety performance information is delivered to wheat growers and other clientele through field tours (21 tours in 2018), grower meetings (1 in 2018), the variety testing website, emails with preliminary results after harvest (over 200 recipients), the variety selection tool (located at [smallgrains.wsu.edu](http://smallgrains.wsu.edu)), Wheat Life articles, seed buying guides, annual technical report, direct contact with clientele, and reports to the Washington Grain Commission. Grain from variety trials is used to generate information on end use quality, disease reactions, market class grading, and falling numbers.

**Impact:** The economic value (impact) of the WSU VTP is measured by providing information to growers and seed industry personnel that leads to variety selections that maximize profitability and minimize risk. Choosing an appropriate wheat variety to plant is one of the easiest ways that a grower can increase production and decrease costs (through decreased inputs). In 2018, there were roughly 2.1 million acres of wheat planted in Washington. If growers use results produced by the VTP to select higher yielding, disease resistant wheat varieties to plant on their farms, one could assume a modest average yield increase of 1 bushel/acre, resulting in 1.9 million bushels of grain. Using an average market price of \$5.00/bushel, this would result in a gross increase of \$10.5 million to the Washington grain economy. An additional impact of the VTP comes through the evaluation of breeding lines, providing valuable information to aid breeders in variety release decisions, leading to new and improved wheat varieties available to growers in Washington. Seed dealers also use VTP data to make decisions about which varieties to offer for their patrons.

Some of the most direct and measurable impacts that this project had in 2018 are as follows: 1. The inclusion of every major wheat breeding program in the VTP trials. This provided growers and industry with a head-to-head comparison of the most widely grown varieties. 2. VTP field tours were attended by 600 farmers/clientele. At those tours, I highlighted each entry in the trial and gave a few details, strengths/weaknesses about each entry. 3. The addition of winter wheat trials at Bickleton and Eureka, and the partnership with OSU on trials at Dayton, Walla Walla and Eureka. 4. The variety testing section of the small grains website (<http://smallgrains.wsu.edu/variety/>) was the most visited section of the site (29,001 page views).

**WGC project number:** 4127-1604  
**WGC project title:** Evaluation of Wheat Varieties  
**Project PI(s):** Aaron Esser  
**Project initiation date:** July 1, 2016  
**Project year (X of 3-yr cycle):** 3 of 3

Objective	Deliverable	Progress	Timeline	Communication
1. Conduct wheat variety trials in eastern Washington	a) 24 soft winter wheat trials; 48-54 entries/trial b) 16 hard winter wheat trials: 18 entries/trial c) 18 soft spring wheat trials; 24 entries/trial d) 18 hard spring wheat trials; 36 entries/trial	a) 2019 trials planted; 2018 results finished b) 2019 trials planted; 2018 results finished c) 2019 trials in planning; 2018 results finished d) 2019 trials in planning; 2018 results finished	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.
		We are continuing the collaboration with OSU on trials at Dayton, Walla Walla and Eureka.		
2. Public and private entries in trials	All widely grown, commercially available varieties included in trials.	2019 winter trials; 43% public, 57% private. Every major breeding program in the PNW is actively participating in the VTP. 2019 winter entries can be viewed on the variety testing website.	Winter entries by August 15th and spring entries by February 15th	Solicit winter entries by August 1 and spring entries by February 1. Maintain positive relationship with breeding programs to ensure future participation.
		2018 spring trials: 51% public and 49% private		
3. Trials and data available to other projects	Participation other projects/programs.	Cooperation with breeders, pathologists, quality lab, FGIS, seed dealers, WSCIA, 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 presented in seed buyers guide and variety selection tool, VTP data used for variety release and PVP applications.
4. Extension Outreach	Grower meetings	1 grower mtg in 2018	Whenever I'm invited	Grower meetings: 1 in 2018
	Field Tours (with County Extension)	21 in 2018 and 21 planned for 2019	June-July	*Field tours: 21 in 2018 (listed below)
	Email list serv	2018 results delivered	October	Email list serve: data sent to 213 members
	Website	up to date with 2018 data	fall winter	23,840 pageviews of the VTP section of the small grains website
	Annual Report	Published in December 2018	December	Annual Report: 2018 Technical Report 18-3
	WSCIA Seed Buyers Guides	2018 published, 2019 in preparation	January-February	2018 Seed Buyers Guide published January 2018
	Wheat Life	2 articles written in 2018	January	Wheat Life: 2 article planned for 2019
	Variety Selection Tool ( <a href="http://smallgrains.wsu.edu">http://smallgrains.wsu.edu</a> )	Selection tool needs to be updated with 2018 data	January-February	The variety selection tool has 6,593 page views in 2018
<b>* 2018 Tour Schedule Wheat</b>				
<b>Location</b>	<b>Date</b>	<b>Attendance</b>	<b>Crops</b>	
Horse Heaven	6-Jun	24	Winter Wheat and Spring Wheat	
Ritzville	6-Jun	28	Winter Wheat	
Western Whitman Co. -Dusty	7-Jun	10	Winter Wheat	
Connell	7-Jun	27	Winter Wheat	
Lind Field Day	14-Jun	130	Winter Wheat and Spring Wheat	
Harrington	14-Jun	25	Winter Wheat	
St Andrews	15-Jun	15	Winter Wheat	
Eureka	18-Jun	30	Winter Wheat	
Walla Walla	20-Jun	80	Winter Wheat and Spring Wheat	
Dayton	22-Jun	30	Winter Wheat and Spring Wheat	
Moses Lake	25-Jun	35	Winter Wheat and Spring Wheat	

Creston	25-Jun	1	Winter Wheat	
Reardan	26-Jun	10	Winter Wheat and Spring Wheat	
Mayview	27-Jun	25	Winter Wheat and Spring Wheat	
Anatone	27-Jun	15	Winter Wheat	
Fairfield	28-Jun	27	Winter Wheat	
St John	28-Jun	25	Winter Wheat and Spring Wheat	
Lamont	28-Jun	8	Winter Wheat and Spring Wheat	
Bickleton	29-Jun	30	Winter Wheat and Spring Wheat	
Farmington	6-Jul	15	Winter Wheat and Spring Wheat	
Palouse	6-Jul	10	Winter Wheat and Spring Wheat	
		<b>Total = 600</b>		

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