

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

Project #: 4722

Progress Report Year: *3 of 3*

Title: Supplemental Support for Assessing the Quality of Washington Wheat Breeding Samples

Cooperators: Kim Garland-Campbell, Arron Carter, Mike Pumphrey

Executive summary: This WGC support provides for about 3 months of additional technician time. The additional work is devoted to evaluating breeder samples for quality from October through mid-January. During this period, spring wheat samples are given priority over winter wheat samples. The aim is to coordinate with the WSU Wheat Quality Program, and complete as many analyses as possible before spring wheat planting decisions in early February. In this way, the spring wheat program is made more efficient because inferior quality lines are not planted and grown. The standing goal for WSU winter wheat breeding lines is to complete as many as possible before June 1. Milling and baking evaluations of the 2016-Crop were completed and 2017-Crop testing is well under way at the Western Wheat Quality Lab. This reporting period also covers the 2015 and 2016 harvests.

We provide breeders with SKCS single kernel size, weight, and hardness, and the variability (SD) of each; grain protein, test weight, flour yield, break flour yield, milling score, flour ash and protein, dough mixing time and type, dough water absorption, Solvent Retention Capacity (SRC) Water, Lactic Acid, Sucrose and Carbonate; SDS Sedimentation, cookie diameter and score, bread volume and score, sponge cake volume, and RVA (Rapid Visco Analyzer) peak pasting viscosity or Flour Swelling Volume (FSV) (RVA and FSV are for starch quality).

Impact: This work contributes directly to WSU and ARS variety development and release. New varieties need to be fully evaluated for end-use quality so that our customers can purchase predictable, high quality Washington wheat.

Deliverables:

Following are recent advanced lines and released varieties that were supported with complete end-use quality analyses:

4J71366C	Pritchett	winter club
KXB-01	--	--
WA8118	Sprinter	HRS
WA8124	Ryan	SWS
WA8143	Curiosity CL+	SWW
WA8155	Mela CL+	SWW
WA8158	--	HWW
WA8162	Seahawk	SWS
WA8165	Chet	HRS
WA8166	Alum	HRS
WA8169	Jasper	SWW
WA8177	--	SWW
WA8180	Sequoia	HRW
WA8184	Earl	HWW
WA8187	Resilience CL+	SWW
WA8189	--	SWS
WA8189	Tekoa	SWS
WA8193	Melba	spring club
WA8212	--	SWW
WA8232	--	SWW
WA8235	--	SWW

Outputs and Outcomes:

WGC project number:	4722			
WGC project title:	Supplemental Support for Assessing the Quality of Washington Wheat Breeding Samples			
Project PI(s):	Craig F. Morris and Doug Engle			
Project initiation date:	1-Jul-18			
Project year:	3			
Objective	Deliverable	Progress	Timeline	Communication
Complete spring wheat samples	Full mill & bake data delivered to breeder by early Feb.	will be reported; progress on last year's crop is on track	Starts at harvest when samples come in, ends with completion of last nursery	Data delivered directly to breeder; dialogue may ensue as to interpretation,
Complete winter wheat samples	Full mill & bake data delivered to breeder by early June	will be reported; progress on last year's crop is on track	Starts at harvest when samples come in, ends with completion of last nursery	Data delivered directly to breeder; dialogue may ensue as to interpretation,