

RESEARCH PROGRESS REPORT

Program: VDACS – Specialty Agriculture Research Grant – FY06

Project Title: Development and Management of Specialty Small Grain Varieties for High-Value End-Use Markets

Investigators: Carl A. Griffey¹, Wade E. Thomason¹, R.M. Pitman², W.S. Brooks¹, J. Paling¹, M.E. Vaughn², and J. Kenner²
¹Dept. of Crop & Soil Environmental Sciences, Virginia Tech
 Blacksburg, VA 24061-0404
²Eastern Virginia Agricultural Research & Extension Center
 Warsaw, VA 22572

Project Component: Breeding & Development of Specialty Wheat Varieties

The small grains breeding program initiated research focused on the evaluation and development of specialty wheat in 1998. One objective of the program has been to identify and develop soft wheat lines with high-value traits such as white seed color and unique protein quality (strong gluten strength). Another major objective has been to identify and develop hard wheat lines adapted to our region. We continue to interact with producers and millers in Virginia and the region in order to identify and incorporate desirable and high value end-use traits into adapted wheat varieties. During May 2006, a personal tour of Bread Wheat Breeding Nurseries was given to C.J. Lin (Research Director of Mennel's Roanoke City Mill), Don Mennel (President and CEO of Mennel Milling Co.), Michael Barnett (Quality Assurance Manager of Miller Milling Co., Winchester, VA), and three representatives of Gerards Custom Bread Co. including Gary Knight (President and CEO). Grain samples of specialty wheat lines are provided to millers for milling and baking evaluations each year, thereby directly identifying wheat lines having desirable end-use quality that have potential commercial production and/or use as parents in the breeding program.

Analysis of agronomic and milling and baking quality data of entries evaluated in Virginia Tech's Bread Wheat Yield Nurseries since 2003 indicate that the released Hard White Winter (HWW) wheat variety Lakin and the Hard Red Winter (HRW) wheat varieties TAM 110 and TAM 302 have potential for commercial production in the mid-Atlantic region. The HRW wheat experimental lines 92PAN2#26, KS00F5-58-3, KS00F5-20-3-2 and TX99D4478, and the French bread wheat line SX1432W also have performed well in both agronomic and quality tests. Breeder seed of KS00F5-20-3-2 is currently being developed and a small seed increase will be harvested by VCIA this summer. Breeder seed of TX99D4478 is currently being developed at NCSU by USDA-ARS. Breeder seed of 92PAN2#26 and KS00F5-58-3 will be provided to VCIA this fall for producing an initial seed increase. Such hard wheat varieties will provide producers with an alternative to the currently grown French variety Soissons until superior varieties are released from breeding programs at Virginia Tech and elsewhere.

