2008 Crop
Advance Milling and Baking Evaluation Nursery 2008A07

Uniform Southern Nursery – Samples provided by Steve Harrison
Entries # 820781 to # 820821

A total of 42 samples were grown at collection of interior locations; the normal division of coastal locations was not included. The standard data is compared to the "historical average" for the cultivar, and quality scores for all entries are adjusted to this average. The samples in this nursery were compared to entry AGS 2000. Of the 830 cultivars in the SWQL database of Allis-milled cultivars, AGS 2000 ranks 25th for Milling Score based on data from 5 millings. The following table compares the AGS 2000 standard with the "historical data" from the Advanced Milling databases.

SAMPLE NO.		ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	SOFT. EQUIV. SCORE	TEST WT. LB/BU	ADJ. YIELD %	SOFT. EQUIV. %	FLOUR PROT. %	LACTIC ACID SRC	SUCROSE SRC %
		Nursery Average	69.1	57.1	57.4	61.24	69.78	56.96	9.09	111.07	97.54
		AGS 2000	85.91	69.87	62.91	62.17	73.14	58.88	8.85	102.68	94.83
Database	Average	AGS 2000	79.8	57.5	63.0	63.8	72.0	56.2	9.2	105.8	93.9
Database	St. Dev	AGS 2000	6.7	16.4	10.0	2.2	1.3	3.0	0.8	4.4	4.8

In this trial AGS 2000's quality was within the expectations of the cultivar based on comparison to Advanced quality evaluations since 2006. Pioneer 26R61, Coker 9553, and USG 3555 all have been evaluated before but have a smaller set of observations than AGS 2000 and therefore we have not presented comparisons to the means in the historical dataset. Generally the cultivars are consistent with their previous performance. Comparisons to previous cookie bakes are not presented due to changes in evaluations noted below. Very limited weathering and Fusarium affected kernels were present in the sample. No obvious pre-harvest sprouting was observed in the set.

Notes for 2008 Evaluations: The AACC has recommended modifications to the sugar snap cookie method. The SWQL adopted the new method for the 2008 crop year. The results of cookie data should be more accurate and reproducible.

The diameters of the cookies will be generally larger than with the old method. The rankings of the cultivars should be generally similar to the old method. However the increase in diameter will be relatively smaller in better quality cultivars than in poorer quality or for very strong gluten lines.

Evaluation of Breeding Lines

In long-flow milling evaluations for the US Wheat Associates Overseas Varietal Analysis, Coker 9553 has had acceptable milling but has been at the lower end of acceptability for milling quality. In this trial it had a flour yield of 68.3%. Any line with significantly lower flour yield is likely to be unacceptable for milling quality if released as a cultivar. These lines include VA05W-250, MD01W233-06-16, M04-4715, and W98008P1. In this set, lines had a wide range of softness equivalent and selection for the trait would result in improved quality wheat. Only two breeding lines, P04287A1-10 and G41732, appeared not to fit the normal range for soft wheats and likely are unacceptable for break flour yield. Based on milling yield and softness equivalent (greater values preferred) and sucrose SRC (lower values preferred), the best quality wheat lines in this trial were LA01140D-70, GA991209-6E33, GA991371-6E13, and GA991227-6A33. They represent improvements to the average quality of soft wheats produced in the eastern US and may have value as crossing parents or cultivars if their agronomic and disease resistance characteristics are desirable.

None of the check cultivars are generally considered strong gluten cultivars. In this data set some of the samples appeared weathered and some did not. Lactic acid, a measure of gluten strength, is normally elevated with weathering and can give a false reading on the genetic potential of gluten strength. In a set where differential weathering has occurred, lactic acid scores should be evaluated and compared against other information about the cultivar before basing selection decisions on the lactic acid values. In this set the breeding lines with good milling quality (70% or greater) the strongest gluten lines were: NC04-15533, NC04-20814, AR96077-7-2, M04*5109, D04-5012, and G61505. These lines have good softness equivalents and should have acceptable quality for most products. However, they may have additional value for cracker production.

Please contact me if you have questions concerning these evaluations.

Best regards,
Edward Souza