

**2008 Crop
Advance Milling and Baking Evaluation Nursery 2008A14**

Uniform Eastern Winter Wheat Performance Nursery, Composite of Three Locations, Jose Costa

Entries # 820941 to # 820985

A total of 45 samples were provided by Jose Costa as a composite of two locations. Samples from Wooster OH were composited with the samples shipped to provide the final composite for milling for each of the genotypes. 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 Roane. Of the 831 cultivars in the SWQL database of Allis-milled cultivars, Roane ranks 208th for Milling Score based on data from 18 millings. The following table compares the Roane standard with the “historical data” from the Advanced Milling databases.

ENTRY	MILLING	BAKING	SOFT.	TEST	ADJ.	SOFT.	FLOUR	LACTIC	SUCROSE
	QUALITY	QUALITY	EQUIV.	WT.	YIELD	EQUIV.	PROT.	ACID	SRC
	SCORE	SCORE	SCORE	LB/BU	%	%	%	SRC	%
Nursery Average	56.2	68.1	66.1	60.86	68.81	58.30	9.00	106.90	98.78
Allis Database - Roane	44.9	40.4	68.0		74.68		8.80	101.00	
Roane	44.92	40.42	68.04	62.59	66.56	58.97	9.16	111.23	103.75
Roane– Advanced database average	56.6	46.9	71.0	63.7	69.1	59.9	8.7	118.1	98.9
Roane– Adv. Db. Standard deviation	4.2	13.2	7.1	3.0	1.3	2.4	0.5	9.0	6.0
Branson	51.01	72.68	63.89	58.22	67.77	57.52	9.21	101.62	101.08
Branson– Advanced database average	67.9	53.7	60.0	61.4	70.2	54.7	9.3	99.2	93.3
Branson– Adv. Db. Standard deviation	0.2	3.7	0.1	2.6	1.0	1.5	0.9	7.4	3.0
INW0411	58.05	73.18	86.01	59.07	69.18	65.26	8.44	114.15	96.99
INW0411- Advanced database average	68.0	69.4	80.7	60.9	71.2	63.5	8.2	111.3	86.8
INW0411– Adv. Db. Standard deviation	5.8	13.8	4.4	2.3	0.7	2.8	0.6	10.2	3.0

Other check cultivars that were summarized included Branson and INW0411. The comparison of those cultivars to the Advance Database is given on the worksheets titled "Historical", with a smaller version listed above. In comparing all the checks, test weights were lower than average for all three checks and softness equivalents greater than normal for two of the three. The composited samples had some weathering and sprouting that likely contributed to the reduction in test weight of samples and the increase in softness equivalent. The inspection of the grain condition identified 0% to over 10% tombstoned kernels in the samples. Aspiration likely minimized the impact of the disease on end-use quality.

Notes for 2008 Evaluations: The AACCC 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 Cultivars and Breeding Lines

Milling yield and softness equivalent are the most heritable traits evaluated by the Soft Wheat Quality Laboratory. Based on comparisons to the historical advanced milling sets, the ranking for the checks for milling quality is: INW0411 is similar to Branson, and Roane is poorer. The measured milling quality for the checks in this trial matched the historical rankings. Based on this any line significantly lower than Branson (<67.8% Flour yield), will have lower than normal flour yield and may have poor milling quality. Similarly, softness equivalent is measure of break flour yield on commercial mills and is negatively correlated to the particle size of flour. Small particle size is a desirable characteristic in soft wheat, particularly for cakes. Three lines had very low softness equivalent and would likely be poor for cakes: P04287A1-16, IL02-18228, and G41730.

The six breeding lines in the nursery had a good combination of flour yield (>70.0%), softness equivalent (>58.3%, the nursery ave.), sucrose SRC (<98.8, the nursery ave.), and cookie diameter (>18.4, the nursery average). The lines were VA03W-412, IL00-8530, MD99W483-06-9, VA05W-414, 21525c1*, and M04-4566. They would be expected to perform better than average in a wide range of cookie and cake formulations. A number of the lines were strong gluten types with lactic acid SRC values above 120%. These lines may have application in cracker products and other soft wheat foods

that require leavening. Among the lines with strong gluten, the best quality lines for gluten and milling characteristics were IL00-8530, MO040152, M04-4802, and M04*5109. The lines highlighted good quality experimentals would like serve as sources of improved milling and baking quality in subsequent crossing programs for improved cultivars.

Best regards,
Edward Souza