

# Wheat and Barley Variety Performance Tests in Tennessee

2005

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Variety test results are posted on UT's website at:

[http://taes.tennessee.edu/researchprograms/Variety\\_trials/](http://taes.tennessee.edu/researchprograms/Variety_trials/)

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[UTCrops.com](http://UTCrops.com)

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## Table of Contents

General Information.....	4
Interpretation of data.....	5
Wheat Tests Results.....	5
Location information from experiment stations where the wheat variety tests were conducted in 2005.....	6
Experiment Station Wheat Performance Data 2005.....	7
Systemic Insecticide Treatment Comparison Tests 2005.....	11
County Standard Wheat Performance Data 2005.....	13
Two year Experiment Station Wheat Performance Data 2004-2005.....	15
Three Year Experiment Station Wheat Performance Data 2003-2005.....	19
Barley Tests Results.....	21
Location information from experiment stations where the barley variety tests were conducted in 2005.....	21
Experiment Station Barley Performance Data 2005.....	22
Two year Experiment Station Barley Performance Data 2004-2005.....	23
Three year Experiment Station Barley Performance Data 2003-2005.....	24

## **General Information**

**Experiment Station Tests:** The 2005 variety performance tests were conducted on 84 soft, red winter wheat varieties in each of the physiographic regions of the state. Tests were conducted at Highland Rim (Springfield), Knox (Knoxville), Middle TN (Spring Hill), Milan (Milan), and West TN (Jackson) Agricultural Experiment Stations.

All varieties were seeded at rates from 25 - 32 seed per square foot (Table 1). Plots were seeded with drills using 7 – 7.5 inch row spacings. The plot size was six, seven or ten rows, 25 to 30 feet in length depending on location equipment. Plots were replicated three times at each location. Seed of all varieties were treated with a fungicide.

**County Standard Tests:** The Standard Wheat Test was conducted on 21 soft red winter wheat varieties in 4 counties in West Tennessee (Dyer, Henry, Moore, and Weakley). Each variety was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the overall average yield and in conducting the statistical analysis to determine significant differences. At each location, plots were planted, sprayed, fertilized, and harvested with the equipment used by the cooperating producer in his farming operation. The width and length of strip-plots were different in each county; however, within a location in a county, the strips were trimmed on the ends so that the lengths were the same for each variety, or if the lengths were different then the harvested length was measured for each variety and appropriate harvested area adjustments were made to determine the yield per acre.

**Insecticide Seed Treatments:** In order to evaluate the effects of seed that had been treated with a systemic insecticide such as Gaucho or Cruiser versus seed that had not been treated, nine varieties were evaluated in the experiment station test in 2005 (Delta King DK9577, FFR 8302, Pioneer 25R78, USG 3137, USG 3209, USG 3350, USG 3430, USG 3592, and USG Exp. 910) with and without the systemic insecticide seed treatment. Three systemic insecticide treated varieties were evaluated in the county standard test (FFR 8302, Pioneer 25R78, and USG 3350).

**Growing Season:** The growing season began with excessive rainfall during the fall planting season which delayed planting into November (see Table 1). The winter temperatures were moderately cold with some freezing damage to the plants at some locations. The combination of poor planting conditions, late planted plots and adverse growing conditions resulted in thin stands at the West Tennessee and Milan Experiment Stations. The spring season was wet and unseasonably cool during most of March and April. Dry conditions during May and June facilitated harvest at most locations. Humid conditions contributed to disease development (e.g. stripe rust); however visible symptoms were not sufficient to rate differences among varieties at most locations. Disease ratings were recorded at the West Tennessee Experiment Station (Jackson, TN) for stripe rust and overall leaf disease incidence. In spite of the late start of planting in the fall, the climatic conditions throughout the growing season were very favorable to wheat. The state average yield on the 170,000 acres harvested for grain set a new state record at 60 bu/a.

## Interpretation of Data

The tables on the following pages have been prepared with the entries listed in order of performance, the highest-yielding entry being listed first. **All yields presented have been adjusted to 13.5% moisture.** At the bottom of the tables, **LSD** values stand for **Least Significant Difference**. The mean yields of any two varieties being compared must differ by at least the LSD amount shown to be considered different in yielding ability at the 5% level of probability of significance. For example, given that the LSD for a test is 8.0 bu/a and the mean yield of Variety A was 50 bu/a and the mean yield of Variety B was 55 bu/a, then the two varieties are not statistically different in yield because the difference of 5 bu/a is less than the minimum of 8 bu/a required for them to be significant. Similarly, if the average yield of Variety C was 63 bu/a then it is significantly higher yielding than both Variety B ( $63 - 55 = 8$  bu/a = LSD of 8) and Variety A ( $63 - 50 = 13$  bu/a > LSD of 8).

Also, the **coefficient of variation (C.V.)** values are shown at the bottom of each table. This value is a measure of the error variability found within each experiment. It is the percentage that the square root of error mean square is of the overall test mean yield at that location. For example, a C.V. of 10% indicates that the size of the error variation is about 10% of the size of the test mean. Similarly, a C.V. of 30% indicates that the size of the error variation is nearly one-third as large as the test mean. A goal in conducting each yield test is to keep the C.V. as low as possible, preferably below 20%.

## ----- Wheat -----

### Results

**Yield and Agronomic Traits:** During 2005, 84 wheat varieties were evaluated in five experiment station tests, and 21 varieties were evaluated in four county standard tests. Twenty of the varieties were common to both the experiment station and the county tests. Fifteen companies and six universities entered varieties into the tests this year. Forty-seven of the 84 varieties have been evaluated for two years (2004-2005) and 22 of the 84 have been evaluated for three years (2003-2005).

The average yield of the 75 non-insecticide treated varieties in the experiment station tests was 63 bu/a (range from 50 to 72 bu/a, Table 2). The average yield of the nine insecticide treated varieties in the experiment station tests was 66 bu/a with individual varieties ranging from 61 to 71 bu/a. High yields were achieved at the Knoxville and Spring Hill locations (Table 2). The varieties ranged in maturity from 218 to 227 days after planting (DAP) with most of the varieties clustering around 222. The test weight values ranged from 56.1 to 60.1 lbs/bu (Table 3).

The average yield of the 20 non-insecticide treated varieties in the county tests was 71.4 bu/a with individual varieties ranging from 63.3 to 80.0 bu/a. The average yield of the three insecticide treated varieties in the county tests was 75.0 bu/a with individual varieties ranging from 71.7 to 80.9 bu/a. The test weight values ranged from 56.4 to 60.6 lbs/bu (Table 6).

**Cruiser or Gaucho Seed Treatments:** The effects of the insecticide seed treatments was inconsistent among varieties and experiment station locations. The two varieties that had received the Cruiser seed treatment, averaged +2 (Delta King DK 9577) and +4 bu/a (Pioneer 25R78) across all locations, compared to untreated seed of the same variety (Table 4). The range in response was from -4 to +11 bu/a at the different locations for those two varieties. The range in response for the seven varieties treated with Gaucho was from -4 (USG Exp. 910) to +10 bu/a (USG 3430). Again the response of the varieties was different at different locations. The greatest average response was in the high yield environment at Knoxville.

Two varieties, FFR 8302 and USG 3350, were evaluated in the County Standard Test as treated (Gaucho) and untreated entries. As with the results in the experiment station tests, the responses of the two varieties were not consistent across locations. For example, the difference in yield between treated and untreated seed of USG 3350 ranged from -5.6 bu/a in Weakley county to +4.5 in Henry county (Table 6). Similarly, the response between treated and untreated seed of FFR 8302 ranged from -3.1 bu/a in Henry county to +5.5 bu/a in Dyer county. The inconsistent responses are similar to results obtained in past years with systemic insecticide treated seed.

**Table 1. Location information from experiment stations where the wheat variety test was conducted in 2005.**

Experiment Station	Location	Planting Date	Harvest Date	Seeding Rate	Soil Type
Highland Rim	Springfield	11/8/2004	6/22/2005	28/ft <sup>2</sup>	Mountview Silt Loam
Knoxville	Knoxville	10/28/2004	6/23/2005	28/ft <sup>2</sup>	Sequoia Silty Clay Loam
Milan	Milan	11/17/2004	6/21/2005	32/ft <sup>2</sup>	Grenada Silt Loam
Middle Tennessee	Spring Hill	11/9/2004	6/14/2005	26/ft <sup>2</sup>	Maury Silt Loam
West Tennessee	Jackson	11/10/2004	6/16/2005	28/ft <sup>2</sup>	Lexington Silt Loam

**Table 2. Mean yields† of 84 soft red winter wheat varieties evaluated at five locations in Tennessee during 2005.**

Brand	Variety	Avg. Yield	Spring				
		± Std Err. (n=5)‡	Knoxville	Springfield	Hill	Jackson	Milan
			-----bu/a-----				
Pioneer	XW03X	72 ± 2	101	57	88	70	46
AgriPro	Cooper	71 ± 3	103	61	77	69	45
USG	3350	70 ± 2	99	50	81	79	41
Delta King	DK 9410	69 ± 2	85	56	79	72	54
AgriPro	APW 742	69 ± 3	103	51	79	73	39
Pioneer	26R15	68 ± 2	101	49	84	67	41
Cache River Valley Seed	Dixie 922	68 ± 2	85	46	78	83	45
Pioneer	25R54	68 ± 2	103	54	84	65	33
Pioneer	25R37	67 ± 2	85	57	82	75	38
Vigoro (Royster Clark)	V9410	67 ± 2	86	45	78	77	51
Armor	3330	67 ± 2	93	47	89	77	29
NK Brand	Coker 9663	67 ± 2	95	49	79	67	44
Progeny	133	67 ± 2	85	52	81	69	46
Pioneer	25R78	67 ± 2	89	59	83	66	36
Pioneer	26R58	66 ± 2	87	56	92	64	33
AgriPro	APW 749	66 ± 3	98	47	83	59	43
Armor	ARX 5667	66 ± 2	89	47	84	62	49
Excel	307	66 ± 2	88	52	73	70	45
USG	3209	66 ± 2	105	49	70	68	36
USG Exp.	910	65 ± 2	99	46	74	69	39
Cache River Valley Seed	Dixie 900	65 ± 3	90	44	84	70	39
NK Brand	Coker 9312	65 ± 3	93	56	74	62	41
Progeny	185	65 ± 2	100	45	76	67	38
Delta King	DK 9216	65 ± 2	78	62	73	75	38
Armor	ARX 5099	65 ± 3	99	50	80	60	36
Progeny	145	65 ± 2	83	53	75	63	49
Delta King	DK 9577	65 ± 2	97	55	84	59	27
VA	VAN98W-342	65 ± 2	94	49	85	47	47
Pioneer	25R49	64 ± 2	87	47	80	64	44
VA	Roane	64 ± 3	93	53	70	66	39
Delta King	DK 9650	64 ± 2	87	48	77	66	44
Armor	2010	64 ± 3	82	48	78	84	28
Vigoro (Royster Clark)	V9412	64 ± 2	91	49	75	57	48
NK Brand	Coker 9152	64 ± 2	83	48	77	65	47
Agripro	Beretta	64 ± 3	87	57	68	75	34
Delta King	DK 7900	64 ± 2	83	50	79	66	40
FFR	8302	64 ± 2	95	51	74	57	40
Vigoro (Royster Clark)	V9513	63 ± 2	79	50	78	68	41
Armor	3035	63 ± 2	84	45	79	71	38
Progeny	110	63 ± 2	86	54	70	67	40
Delta Grow	4200	63 ± 3	89	47	74	66	40
Delta King	DK 7710	63 ± 2	82	52	78	63	41
Delta Grow	4100	63 ± 2	90	48	71	74	32
Delta Grow	5200	63 ± 2	88	48	76	61	42
NK Brand	Coker 9436	63 ± 2	87	50	67	64	45
Delta King	DK 1551w	63 ± 2	77	54	79	60	44
Delta King	DK 7830	63 ± 2	77	52	75	65	44
GA Exp.	951079-2E31	62 ± 2	77	53	80	59	43
USG	3137	62 ± 2	79	46	78	72	34
Armor	ARX 5109	62 ± 3	78	56	73	66	35
Progeny	166	61 ± 2	86	53	73	59	36

(continued)

**Table 2. (continued) Mean yields† of 84 soft red winter wheat varieties evaluated at six locations in Tennessee during 2005.**

Brand	Variety	Avg. Yield	Spring				
		± Std Err. (n=5)‡	Knoxville	Springfield	Hill	Jackson	Milan
		-----bu/a-----					
VA	McCormick	61 ± 3	95	48	72	56	35
USG	3592	61 ± 2	75	50	74	57	49
NK Brand	B980582	61 ± 3	89	46	79	54	37
Progeny	155	60 ± 2	76	56	69	57	40
MD	MV 5-46	60 ± 3	95	54	71	44	34
GA Exp.	951216-2E26	59 ± 2	87	45	71	53	40
MO	Truman	59 ± 2	83	60	63	49	38
Vigoro (Royster Clark)	Tribute	59 ± 2	93	50	66	46	38
TN Exp	TN 501	58 ± 2	71	48	77	55	41
USG	3430	58 ± 3	88	54	67	41	41
Armor	ARX 5299	58 ± 2	84	45	75	48	39
AgriPro	Panola	58 ± 3	85	52	77	48	27
AR	Pat	58 ± 3	79	54	67	53	36
FFR	556	58 ± 3	99	47	65	46	33
Progeny	156	58 ± 2	78	58	75	40	38
AR	Sabbe	57 ± 3	70	55	75	51	34
Progeny	125	57 ± 2	86	48	69	49	32
FFR	510	57 ± 3	100	49	64	38	33
MD	Choptank	56 ± 2	90	46	61	56	29
VA	VA00W-526	56 ± 2	91	51	72	41	26
Renwood	3260	56 ± 2	85	40	62	58	34
Pioneer	25R35	56 ± 3	87	41	71	53	27
FFR	8309	50 ± 2	68	50	62	39	30
Delta Grow	4500	50 ± 3	73	40	57	55	25
<b>Average (bu/a)</b>		<b>63</b>	<b>88</b>	<b>50</b>	<b>75</b>	<b>61</b>	<b>39</b>
<b>Varieties* -- Seed Treated with Systemic Insecticide</b>							
Pioneer	25R78 (Cruiser)	71 ± 2	102	55	87	63	47
USG	3430 (Gaucho)	68 ± 2	90	52	82	76	42
USG	3350 (Gaucho)	68 ± 2	102	50	83	61	43
Delta King	DK 9577 (Cruiser)	66 ± 2	103	52	84	65	28
USG	3137 (Gaucho)	65 ± 2	97	46	77	65	42
FFR	8302 (Gaucho)	65 ± 2	99	49	89	48	41
USG	3592 (Gaucho)	64 ± 2	97	57	69	62	37
USG	3209 (Gaucho)	64 ± 2	103	52	72	53	37
USG Exp.	910 (Gaucho)	61 ± 2	100	50	67	55	33
<b>Average (bu/a)</b>		<b>66</b>	<b>99</b>	<b>52</b>	<b>79</b>	<b>61</b>	<b>39</b>
<b>L.S.D.<sub>.05</sub> (bu/a)</b>		<b>6</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>24</b>	<b>13</b>
<b>C.V. (%)</b>		<b>13.1</b>	<b>6.0</b>	<b>11.5</b>	<b>10.5</b>	<b>21.2</b>	<b>20.9</b>

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

\* Tested in the same trial with untreated varieties



**Table 3. Mean yields† and agronomic characteristics of 84 soft red winter wheat varieties evaluated at five locations in Tennessee during 2005.**

Brand	Variety	Avg. Yield		Test			Stripe	Leaf	
		± Std Err. (n=5)‡	Moisture (n=5)	Weight§ (n=3)	Maturity (n=4)	Height (n=5)	Lodging (n=1)	Rust (n=1)	Diseases (n=1)
		bu/a	%	lbs/bu	DAP	in.	Score	Score	Score
Pioneer	XW03X	72 ± 2	14.2	57.4	222	36	1.3	1.0	3.5
AgriPro	Cooper	71 ± 3	13.7	58.0	223	36	1.2	3.7	3.0
USG	3350	70 ± 2	14.2	58.1	222	40	1.3	1.0	4.8
Delta King	DK 9410	69 ± 2	14.3	58.1	221	40	1.5	1.0	3.3
AgriPro	APW 742	69 ± 3	14.0	58.7	220	36	1.5	1.0	2.3
Pioneer	26R15	68 ± 2	13.5	57.4	223	35	1.3	2.5	2.7
Cache River Valley Seed	Dixie 922	68 ± 2	14.2	57.9	222	40	1.5	1.2	2.0
Pioneer	25R54	68 ± 2	13.7	57.3	221	35	1.0	1.0	3.2
Pioneer	25R37	67 ± 2	15.0	58.6	223	35	1.0	1.2	3.8
Vigoro (Royster Clark)	V9410	67 ± 2	14.2	57.6	221	40	1.5	1.0	2.2
Armor	3330	67 ± 2	14.6	58.1	222	39	1.5	1.0	2.5
NK Brand	Coker 9663	67 ± 2	14.7	58.0	223	40	3.2	3.2	3.8
Progeny	133	67 ± 2	14.4	58.1	221	39	1.5	1.0	3.0
Pioneer	25R78	67 ± 2	13.7	58.2	222	34	1.0	4.0	2.7
Pioneer	26R58	66 ± 2	12.9	56.9	221	33	1.2	4.3	3.2
AgriPro	APW 749	66 ± 3	14.4	58.6	220	35	1.3	1.0	4.0
Armor	ARX 5667	66 ± 2	13.0	57.3	222	34	1.3	1.8	2.3
Excel	307	66 ± 2	14.8	58.1	223	40	1.2	1.0	2.8
USG	3209	66 ± 2	14.3	58.9	221	33	1.7	3.3	3.2
USG Exp.	910	65 ± 2	13.4	58.2	222	38	1.5	4.7	3.0
Cache River Valley Seed	Dixie 900	65 ± 3	14.7	58.0	221	39	1.5	1.0	3.5
NK Brand	Coker 9312	65 ± 3	13.1	57.9	220	32	1.5	4.7	4.0
Progeny	185	65 ± 2	14.0	57.5	222	34	1.3	2.8	2.3
Delta King	DK 9216	65 ± 2	14.1	58.4	222	39	1.5	1.2	2.8
Armor	ARX 5099	65 ± 3	13.7	58.4	223	35	2.0	1.0	2.5
Progeny	145	65 ± 2	14.2	57.9	221	39	1.5	1.0	3.3
Delta King	DK 9577	65 ± 2	13.8	58.3	220	34	1.5	1.2	3.0
VA	VAN98W-342	65 ± 2	12.9	57.6	218	31	1.0	5.0	3.3
Pioneer	25R49	64 ± 2	15.0	58.5	222	34	1.2	1.0	3.5
VA	Roane	64 ± 3	14.7	60.4	222	34	1.0	2.3	3.0
Delta King	DK 9650	64 ± 2	13.7	57.4	223	35	1.2	4.0	4.3
Armor	2010	64 ± 3	14.1	58.4	222	39	1.7	1.0	1.5
Vigoro (Royster Clark)	V9412	64 ± 2	14.9	59.0	221	36	2.0	3.3	4.2
NK Brand	Coker 9152	64 ± 2	12.9	57.2	219	39	3.0	1.0	2.3
AgriPro	Beretta	64 ± 3	13.7	57.9	223	35	1.0	1.0	3.5
Delta King	DK 7900	64 ± 2	14.2	57.8	221	39	1.5	1.0	2.8
FFR	8302	64 ± 2	14.4	59.1	223	36	1.5	1.0	3.8
Vigoro (Royster Clark)	V9513	63 ± 2	14.3	58.0	221	38	1.0	1.0	3.2
Armor	3035	63 ± 2	14.5	58.4	224	40	1.5	1.0	4.5
Progeny	110	63 ± 2	14.1	58.1	221	39	1.3	2.0	3.7
Delta Grow	4200	63 ± 3	14.2	58.2	222	40	1.5	1.0	2.3
Delta King	DK 7710	63 ± 2	14.3	58.1	222	38	1.5	1.0	3.3
Delta Grow	4100	63 ± 2	14.6	58.3	222	39	1.3	1.0	3.5
Delta Grow	5200	63 ± 2	14.5	58.3	222	38	1.2	1.0	3.5
NK Brand	Coker 9436	63 ± 2	13.3	57.5	223	33	1.3	3.3	3.3
Delta King	DK 1551w	63 ± 2	12.9	57.7	224	35	1.2	2.3	3.7
Delta King	DK 7830	63 ± 2	13.9	57.8	221	40	1.7	1.0	3.0
GA Exp.	951079-2E31	62 ± 2	13.5	58.1	220	36	3.2	1.0	1.8
USG	3137	62 ± 2	14.4	57.9	220	39	1.5	1.0	2.8
Armor	ARX 5109	62 ± 3	14.5	58.1	223	39	1.0	1.0	2.8
Progeny	166	61 ± 2	14.3	57.8	222	40	1.5	1.0	3.0

(continued)

**Table 3. (continued) Mean yields† and agronomic characteristics of 84 soft red winter wheat varieties evaluated at five locations in Tennessee during 2005.**

Brand	Variety	Avg. Yield		Test			Stripe	Leaf	
		± Std Err. (n=5)‡	Moisture (n=5)	Weight§ (n=3)	Maturity (n=4)	Height (n=5)	Lodging (n=1)	Rust (n=1)	Diseases (n=1)
		bu/a	%	lbs/bu	DAP	in.	Score	Score	Score
VA	McCormick	61 ± 3	14.5	59.7	222	32	1.0	1.0	3.3
USG	3592	61 ± 2	13.7	58.3	220	37	3.5	3.3	3.5
NK Brand	B980582	61 ± 3	14.2	59.6	222	38	1.8	2.7	4.0
Progeny	155	60 ± 2	13.4	56.8	221	36	1.0	4.5	3.8
MD	MV 5-46	60 ± 3	14.7	58.5	223	34	1.0	3.7	3.5
GA Exp.	951216-2E26	59 ± 2	13.5	58.7	222	36	1.3	1.0	2.5
MO	Truman	59 ± 2	15.5	58.8	226	39	1.3	1.2	4.5
Vigoro (Royster Clark)	Tribute	59 ± 2	15.3	60.1	222	33	1.2	2.0	4.7
TN Exp	TN 501	58 ± 2	13.9	58.4	223	40	2.7	1.2	3.7
USG	3430	58 ± 3	14.2	58.1	222	39	1.7	1.0	1.7
Armor	ARX 5299	58 ± 2	13.8	58.1	222	36	1.2	2.7	2.2
AgriPro	Panola	58 ± 3	13.4	56.8	222	34	1.7	1.0	2.5
AR	Pat	58 ± 3	14.7	59.6	225	37	1.0	1.0	3.8
FFR	556	58 ± 3	13.6	57.5	222	32	1.0	3.5	4.8
Progeny	156	58 ± 2	13.9	58.4	222	37	1.3	1.0	4.0
AR	Sabbe	57 ± 3	13.5	56.7	223	36	1.0	1.0	2.5
Progeny	125	57 ± 2	13.6	58.2	221	36	1.5	4.0	3.0
FFR	510	57 ± 3	13.9	56.1	220	35	1.8	5.0	3.7
MD	Choptank	56 ± 2	13.0	58.0	221	31	1.3	3.5	2.5
VA	VA00W-526	56 ± 2	13.5	58.3	223	31	1.0	2.2	3.0
Renwood	3260	56 ± 2	13.7	58.5	221	35	1.5	4.8	2.5
Pioneer	25R35	56 ± 3	13.5	58.5	227	37	1.3	3.5	3.3
FFR	8309	50 ± 2	15.2	58.4	226	36	1.3	2.5	2.3
Delta Grow	4500	50 ± 3	14.0	58.1	225	38	1.5	1.0	2.5

**Varieties\* -- Seed Treated with Systemic Insecticide**

Pioneer	25R78 (Cruiser)	71 ± 2	14.1	58.0	223	34	1.0	3.3	4.3
USG	3430 (Gaucho)	68 ± 2	13.8	57.7	220	40	1.5	1.0	3.2
USG	3350 (Gaucho)	68 ± 2	14.4	57.9	221	40	1.5	1.0	3.0
Delta King	DK 9577 (Cruiser)	66 ± 2	13.6	58.0	220	35	2.8	1.0	3.0
USG	3137 (Gaucho)	65 ± 2	13.9	58.1	223	38	1.7	1.7	3.5
FFR	8302 (Gaucho)	65 ± 2	14.9	59.3	223	36	2.0	1.0	4.0
USG	3592 (Gaucho)	64 ± 2	13.9	58.3	221	36	2.7	3.3	3.2
USG	3209 (Gaucho)	64 ± 2	14.1	58.7	221	32	2.7	3.3	2.7
USG Exp.	910 (Gaucho)	61 ± 2	13.1	58.5	221	38	1.5	4.3	3.5

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

§ Official test weight of No. 2 wheat = 58 lbs/bu.

\* Tested in the same trial with untreated varieties

Heading & Maturity (DAP) = Days after planting

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.

Stripe Rust, Leaf Diseases = 1 to 5 scale; where 1 = 95% of plants non-infected; 2.5 = ~50% of plants infected; 5 = 95+% of plants infected;

Disease notes taken at the West Tennessee Experiment Station, Jackson, TN.

**Table 4. Yield† comparisons of nine soft red winter wheat varieties between seed treated versus untreated with a systemic insecticide evaluated at five locations in Tennessee during 2005. ‡**

Brand	Variety	Avg. Yield	Knoxville	Springfield	Spring Hill	Jackson	Milan	Avg. Yield Difference
		± Std Err. (n=5)						
Pioneer	25R78 (Cruiser)	71 ± 2	102	55	87	63	47	4
Pioneer	25R78	67 ± 2	89	59	83	66	36	
USG	3430 (Gaucho)	68 ± 2	90	52	82	76	42	10
USG	3430	58 ± 3	88	54	67	41	41	
USG	3350 (Gaucho)	68 ± 2	102	50	83	61	43	-2
USG	3350	70 ± 2	99	50	81	79	41	
Delta King	DK 9577 (Cruiser)	66 ± 2	103	52	84	65	28	2
Delta King	DK 9577	65 ± 2	97	55	84	59	27	
USG	3137 (Gaucho)	65 ± 2	97	46	77	65	42	3
USG	3137	62 ± 2	79	46	78	72	34	
FFR	8302 (Gaucho)	65 ± 2	99	49	89	48	41	1
FFR	8302	64 ± 2	95	51	74	57	40	
USG	3592 (Gaucho)	64 ± 2	97	57	69	62	37	3
USG	3592	61 ± 2	75	50	74	57	49	
USG	3209 (Gaucho)	64 ± 2	103	52	72	53	37	-2
USG	3209	66 ± 2	105	49	70	68	36	
USG Exp.	910 (Gaucho)	61 ± 2	100	50	67	55	33	-4
USG Exp.	910	65 ± 2	99	46	74	69	39	
<b>Average -- Treated Seed (bu/a)</b>		<b>66</b>	<b>99</b>	<b>52</b>	<b>79</b>	<b>61</b>	<b>39</b>	<b>2</b>
<b>Average -- Untreated Seed (bu/a)</b>		<b>64</b>	<b>92</b>	<b>51</b>	<b>76</b>	<b>63</b>	<b>38</b>	
<b>L.S.D.<sub>.05</sub> (bu/a)</b>		<b>6</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>24</b>	<b>13</b>	
<b>C.V. (%)</b>		<b>13.1</b>	<b>6.0</b>	<b>11.5</b>	<b>10.5</b>	<b>21.2</b>	<b>20.9</b>	

† All yields are adjusted to 13.5% moisture.

‡ All varieties were treated with fungicide.

**Table 5. Comparisons of overall mean yield† and agronomic characteristics of nine soft red winter wheat varieties between seed treated versus untreated with a systemic insecticide evaluated at five locations in Tennessee during 2005. ‡**

Brand	Variety	Avg. Yield	Moisture	Test Weight§	Maturity	Height	Lodging	Stripe Rust	Leaf Diseases
		± Std Err. (n=5)							
		bu/a	%	lbs/bu	DAP	in.	Score	Score	Score
Pioneer	25R78 (Cruiser)	71 ± 2	14.1	58.0	223	34	1.0	3.3	4.3
Pioneer	25R78	67 ± 2	13.7	58.2	222	34	1.0	4.0	2.7
USG	3430 (Gaucho)	68 ± 2	13.8	57.7	220	40	1.5	1.0	3.2
USG	3430	58 ± 3	14.2	58.1	222	39	1.7	1.0	1.7
USG	3350 (Gaucho)	68 ± 2	14.4	57.9	221	40	1.5	1.0	3.0
USG	3350	70 ± 2	14.2	58.1	222	40	1.3	1.0	4.8
Delta King	DK 9577 (Cruiser)	66 ± 2	13.6	58.0	220	35	2.8	1.0	3.0
Delta King	DK 9577	65 ± 2	13.8	58.3	220	34	1.5	1.2	3.0
USG	3137 (Gaucho)	65 ± 2	13.9	58.1	223	38	1.7	1.7	3.5
USG	3137	62 ± 2	14.4	57.9	220	39	1.5	1.0	2.8
FFR	8302 (Gaucho)	65 ± 2	14.9	59.3	223	36	2.0	1.0	4.0
FFR	8302	64 ± 2	14.4	59.1	223	36	1.5	1.0	3.8
USG	3592 (Gaucho)	64 ± 2	13.9	58.3	221	36	2.7	3.3	3.2
USG	3592	61 ± 2	13.7	58.3	220	37	3.5	3.3	3.5
USG	3209 (Gaucho)	64 ± 2	14.1	58.7	221	32	2.7	3.3	2.7
USG	3209	66 ± 2	14.3	58.9	221	33	1.7	3.3	3.2
USG Exp.	910 (Gaucho)	61 ± 2	13.1	58.5	221	38	1.5	4.3	3.5
USG Exp.	910	65 ± 2	13.4	58.2	222	38	1.5	4.7	3.0

† All yields are adjusted to 13.5% moisture.

‡ All varieties were treated with fungicide.

§ Official test weight of No. 2 wheat = 58 lbs/bu.

Heading & Maturity (DAP) = Days after planting

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.

Stripe Rust, Leaf Diseases = 1 to 5 scale; where 1 = 95% of plants non-infected; 2.5 = ~50% of plants infected; 5 = 95+% of plants infected;

Disease notes taken at the West Tennessee Experiment Station, Jackson, TN.

**Table 6. Yields† of 21 soft red winter wheat varieties evaluated in four County Standard Tests in Tennessee during 2005.**

MS	Brand/Variety	Avg.	Moisture	Test	Dyer	Henry	Moore	Weakley
		Yield		Weight‡				
		bu/a	%	lbs/bu	-----bu/a-----			
AB	AgriPro "Panola"	80.0	14.2	59.2	111.7	84.3	83.9	40.3
AB	Delta King DK 9577	79.1	14.0	59.8	90.0	84.2	77.6	64.4
ABC	**USG 3209	76.8	15.4	60.0	93.7	84.3	77.0	52.4
ABC	Progeny 166	76.0	14.9	57.0	86.7	86.2	79.4	51.9
ABCD	USG 3592	74.3	15.6	59.8	89.3	80.9	78.4	48.5
ABCD	Cache River Valley "Dixie 900"	74.0	14.8	59.3	96.0	81.3	77.4	41.5
ABCDE	*USG 3350	73.2	14.8	57.8	81.6	77.3	86.5	47.3
ABCDE	*Croplan 554W	72.7	14.1	59.5	93.9	62.5	90.5	43.9
ABCDE	FFR 556	71.9	14.1	58.2	91.1	61.2	85.8	49.3
ABCDE	Armor 2010	71.5	14.3	59.8	85.2	82.2	65.0	53.9
ABCDE	FFR 8309	71.5	17.6	56.4	88.4	79.1	63.9	54.6
BCDE	Pioneer 26R15	70.5	14.5	60.3	86.5	83.7	69.7	42.0
BCDE	Delta King DK 9650	70.1	15.0	58.9	96.6	77.2	64.3	42.3
BCDE	Vigoro 9412	70.0	14.5	60.2	86.4	82.3	73.1	38.2
CDE	Delta Grow DG4200	67.5	15.1	58.6	84.7	81.4	70.3	33.7
CDE	*FFR 8302	67.3	17.1	59.1	83.9	81.5	66.4	37.2
CDE	Vigoro "Tribute"	66.9	15.5	60.6	86.6	74.2	66.1	40.7
DE	Cache River Valley "Dixie 922"	65.9	15.1	59.3	80.8	77.9	64.1	40.8
DE	Delta King DK 7710	65.6	15.4	59.2	82.0	78.5	67.8	34.0
E	Pioneer 25R35	63.3	16.3	58.4	87.5	59.3	76.7	29.7
<b>Average</b>		<b>71.4</b>	<b>15.1</b>	<b>59.1</b>	<b>89.1</b>	<b>78.0</b>	<b>74.2</b>	<b>44.3</b>

**Varieties\* -- Seed Treated with Systemic Insecticide**

A	**Pioneer 25R78 (Cruiser)	80.9	14.1	59.9	96.2	86.2	85.0	56.4
ABCDE	*USG 3350 (Gaucho)	72.3	14.8	59.6	83.8	81.8	82.0	41.7
ABCDE	*FFR 8302 (Gaucho)	71.7	16.0	60.4	89.4	78.4	79.1	40.1
<b>Average</b>		<b>75.0</b>	<b>15.0</b>	<b>60.0</b>	<b>89.8</b>	<b>82.1</b>	<b>82.0</b>	<b>46.1</b>

† Yields have been adjusted to 13.5% moisture. Each variety was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the average yield and in conducting the statistical analysis to determine significant differences (MS).

‡ Official test weight of No. 2 wheat = 58 lbs/bu.

\* Tested in the same trial with untreated varieties

MS = Varieties that have any MS letter in common are not statistically different in yield at the 5% level of probability.

Varieties denoted with an asterisk (\*) or (\*\*) were in the top performing group in 2004 and/or 2004 & 2003.

Data provided by Robert C. Williams, Ext. Area Specialist, Grain Crops, and extension agents in counties shown above.

**Table 7. Yields† , moistures, and test weights of 22 soft red winter wheat varieties evaluated in both the County Standard Tests (n=4) and Experiment Station Tests (n=5) in Tennessee during 2005.**

Brand	Variety	County Standard Tests			Experiment Station Tests		
		Avg. Yield	Moisture	Test Weight‡	Avg. Yield	Moisture	Test Weight
		bu/a	%	lbs/bu	bu/a	%	lbs/bu
AgriPro	Panola	80	14.2	59.2	58	13.4	56.8
Delta King	DK 9577	79	14.0	59.8	65	13.8	58.3
USG	3209	77	15.4	60.0	66	14.3	58.9
Progeny	166	76	14.9	57.0	61	14.3	57.8
USG	3592	74	15.6	59.8	61	13.7	58.3
Cache River Valley Seed	Dixie 900	74	14.8	59.3	65	14.7	58.0
USG	3350	73	14.8	57.8	70	14.2	58.1
FFR	556	72	14.1	58.2	58	13.6	57.5
Armor	2010	72	14.3	59.8	64	14.1	58.4
FFR	8309	72	17.6	56.4	50	15.2	58.4
Pioneer	26R15	71	14.5	60.3	68	13.5	57.4
Delta King	DK 9650	70	15.0	58.9	64	13.7	57.4
Vigoro (Royster Clark)	V9412	70	14.5	60.2	64	14.9	59.0
Delta Grow	4200	68	15.1	58.6	63	14.2	58.2
FFR	8302	67	17.1	59.1	64	14.4	59.1
Vigoro (Royster Clark)	Tribute	67	15.5	60.6	59	15.3	60.1
Cache River Valley Seed	Dixie 922	66	15.1	59.3	68	14.2	57.9
Delta King	DK 7710	66	15.4	59.2	63	14.3	58.1
Pioneer	25R35	63	16.3	58.4	56	13.5	58.5
<b>Average</b>		<b>71</b>	<b>15.2</b>	<b>59.0</b>	<b>62</b>	<b>14.2</b>	<b>58.2</b>
<b>Varieties* -- Seed Treated with Systemic Insecticide</b>							
Pioneer	25R78 (Cruiser)	81	14.1	59.9	71	14.1	58.0
USG	3350 (Gaucho)	72	14.8	59.6	68	14.4	57.9
FFR	8302 (Gaucho)	72	16.0	60.4	65	14.9	59.3
<b>Average</b>		<b>75</b>	<b>15.0</b>	<b>60.0</b>	<b>68</b>	<b>14.5</b>	<b>58.4</b>

† All yields are adjusted to 13.5% moisture.

‡ Official test weight of No. 2 wheat = 58 lbs/bu.

\* Tested in the same trial with untreated varieties

**Table 8. Mean yields† of 47 soft red winter wheat varieties evaluated at five locations (n=10) in Tennessee for two years, 2004 - 2005.**

Brand	Variety	Avg. Yield ± Std Err. (n=10)‡	Spring				
			Knoxville	Springfield	Hill	Jackson	Milan
			-----bu/a-----				
Cache River Valley Seed	Dixie 900	73 ± 2	79	64	87	83	53
Cache River Valley Seed	Dixie 922	73 ± 1	80	67	79	87	53
Pioneer	25R78	71 ± 1	84	70	73	77	50
Delta King	DK 9410	70 ± 1	69	68	72	79	61
Pioneer	26R15	70 ± 1	80	67	75	73	54
Delta King	DK 9577	69 ± 1	83	71	74	71	45
Armor	3330	69 ± 1	76	63	80	78	46
Progeny	133	68 ± 1	69	67	74	75	55
FFR	8302	68 ± 1	78	71	68	69	53
AgriPro	Cooper	68 ± 2	84	67	67	70	52
NK Brand	Coker 9152	68 ± 1	69	70	75	70	56
VA	Roane	68 ± 2	81	65	71	71	50
Delta King	DK 7900	67 ± 1	72	65	74	74	51
Vigoro (Royster Clark)	V9410	67 ± 1	65	61	75	80	54
NK Brand	Coker 9663	67 ± 1	75	66	71	74	49
Delta Grow	4200	67 ± 2	71	65	74	73	52
Pioneer	25R37	67 ± 1	74	65	71	74	50
Delta King	DK 9650	67 ± 1	70	62	70	73	57
Pioneer	25R49	66 ± 1	75	60	71	70	55
Progeny	110	66 ± 1	64	65	74	72	56
Armor	3035	66 ± 2	69	61	73	76	52
NK Brand	Coker 9312	66 ± 2	74	68	71	67	49
Pioneer	26R58	66 ± 1	69	68	80	67	44
Vigoro (Royster Clark)	V9412	65 ± 1	70	62	66	70	57
Progeny	166	65 ± 1	69	66	71	69	49
Progeny	145	65 ± 1	66	66	72	69	51
Agripro	Beretta	64 ± 2	74	61	66	77	45
AR	Pat	64 ± 2	74	65	68	63	48
Renwood	3260	63 ± 1	75	58	70	68	46
VA	McCormick	63 ± 2	79	64	63	66	45
MD	MV 5-46	63 ± 2	77	67	68	59	45
NK Brand	Coker 9436	63 ± 1	68	59	67	71	51
Delta King	DK 1551w	63 ± 1	64	60	69	68	53
FFR	556	62 ± 2	83	62	59	61	45
Vigoro (Royster Clark)	Tribute	62 ± 1	70	70	61	62	46
Armor	ARX 5109	62 ± 2	62	67	65	68	47
FFR	510	61 ± 2	74	67	71	57	38
MO	Truman	61 ± 2	69	67	68	56	46
AR	Sabbe	61 ± 2	59	67	68	61	48
Progeny	156	60 ± 1	61	67	69	54	49
MD	Choptank	58 ± 1	70	60	61	59	41
Delta Grow	4500	58 ± 2	64	59	58	68	40
FFR	8309	55 ± 1	59	57	58	55	43
<b>Average (bu/a)</b>		<b>65</b>	<b>72</b>	<b>65</b>	<b>70</b>	<b>69</b>	<b>49</b>

(Continued)

**Table 8. (continued) Mean yields† of 47 soft red winter wheat varieties evaluated at five locations (n=10) in Tennessee for two years, 2004 - 2005.**

Brand	Variety	Avg. Yield	Spring				
		± Std Err. (n=10)‡	Knoxville	Springfield	Hill	Jackson	Milan
		-----bu/a-----					
<b>Varieties* -- Seed Treated with Systemic Insecticide</b>							
USG	3350 (Gaucho)	75 ± 1	89	64	88	78	56
USG	3430 (Gaucho)	73 ± 1	76	66	86	83	55
USG	3209 (Gaucho)	68 ± 1	90	60	68	71	53
USG	3592 (Gaucho)	68 ± 1	86	66	65	73	50
<b>Average (bu/a)</b>		<b>71</b>	<b>85</b>	<b>64</b>	<b>77</b>	<b>76</b>	<b>54</b>
<b>L.S.D.<sub>.05</sub> (bu/a)</b>		<b>5</b>	<b>8</b>	<b>10</b>	<b>11</b>	<b>15</b>	<b>11</b>
<b>C.V. (%)</b>		<b>11.5</b>	<b>7.7</b>	<b>10.1</b>	<b>11.2</b>	<b>14.1</b>	<b>14.9</b>

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

\* Tested in the same trial with untreated varieties



**Table 9. Mean yields† and agronomic characteristics of 47 soft red winter wheat varieties evaluated at five locations (n=10) in Tennessee for two years, 2004 - 2005.**

Brand	Variety	Avg. Yield	Test				BYD	Stripe	Leaf	
		± Std Err. (n=10)‡	Moisture (n=10)	Weight§ (n=5)	Maturity (n=9)	Height (n=10)	Lodging (n=2)	Virus (n=1)	Rust (n=1)	Diseases (n=1)
		bu/a	%	lbs/bu	DAP	in.	Score	Score	Score	Score
Cache River Valley Seed	Dixie 900	73 ± 2	14.3	55.9	222	38	1.5	1.9	1.0	3.5
Cache River Valley Seed	Dixie 922	73 ± 1	14.5	56.5	222	40	1.5	1.4	1.2	2.0
Pioneer	25R78	71 ± 1	13.6	56.6	221	33	1.0	1.8	4.0	2.7
Delta King	DK 9410	70 ± 1	14.3	56.4	222	40	1.6	1.9	1.0	3.3
Pioneer	26R15	70 ± 1	13.5	55.1	223	35	1.5	1.7	2.5	2.7
Delta King	DK 9577	69 ± 1	13.8	56.3	221	35	1.5	1.9	1.2	3.0
Armor	3330	69 ± 1	14.3	56.3	222	38	1.5	1.7	1.0	2.5
Progeny	133	68 ± 1	14.5	56.3	222	38	1.7	2.3	1.0	3.0
FFR	8302	68 ± 1	14.5	57.2	223	35	1.5	2.4	1.0	3.8
AgriPro	Cooper	68 ± 2	13.9	55.8	222	34	1.2	2.1	3.7	3.0
NK Brand	Coker 9152	68 ± 1	13.3	55.7	221	39	2.4	2.4	1.0	2.3
VA	Roane	68 ± 2	14.6	58.8	223	33	1.2	1.6	2.3	3.0
Delta King	DK 7900	67 ± 1	14.0	55.9	222	39	1.5	1.8	1.0	2.8
Vigoro (Royster Clark)	V9410	67 ± 1	14.0	55.9	222	39	1.5	2.4	1.0	2.2
NK Brand	Coker 9663	67 ± 1	14.7	56.8	223	39	2.6	1.6	3.2	3.8
Delta Grow	4200	67 ± 2	14.3	56.5	222	39	1.5	1.9	1.0	2.3
Pioneer	25R37	67 ± 1	14.6	56.9	223	34	1.2	1.9	1.2	3.8
Delta King	DK 9650	67 ± 1	13.7	55.2	223	35	1.4	2.7	4.0	4.3
Pioneer	25R49	66 ± 1	14.4	56.6	222	34	1.2	1.5	1.0	3.5
Progeny	110	66 ± 1	14.1	56.3	221	38	1.5	2.7	2.0	3.7
Armor	3035	66 ± 2	14.4	56.4	223	39	1.5	1.8	1.0	4.5
NK Brand	Coker 9312	66 ± 2	13.6	56.2	220	32	1.4	3.4	4.7	4.0
Pioneer	26R58	66 ± 1	13.0	54.4	222	33	1.3	2.8	4.3	3.2
Vigoro (Royster Clark)	V9412	65 ± 1	14.4	56.7	221	35	1.8	2.9	3.3	4.2
Progeny	166	65 ± 1	14.4	56.1	223	38	1.7	2.0	1.0	3.0
Progeny	145	65 ± 1	14.1	56.0	222	38	1.7	2.3	1.0	3.3
Agripro	Beretta	64 ± 2	13.5	55.6	222	34	1.3	1.6	1.0	3.5
AR	Pat	64 ± 2	14.3	57.0	225	37	1.3	1.4	1.0	3.8
Renwood	3260	63 ± 1	14.2	57.1	221	35	1.6	2.2	4.8	2.5
VA	McCormick	63 ± 2	14.5	57.6	223	32	1.3	2.6	1.0	3.3
MD	MV 5-46	63 ± 2	14.3	56.9	222	33	1.3	2.5	3.7	3.5
NK Brand	Coker 9436	63 ± 1	13.3	54.6	223	33	1.4	2.8	3.3	3.3
Delta King	DK 1551w	63 ± 1	13.2	55.6	223	34	1.1	2.5	2.3	3.7
FFR	556	62 ± 2	13.7	55.3	222	33	1.2	2.2	3.5	4.8
Vigoro (Royster Clark)	Tribute	62 ± 1	15.1	58.5	223	33	1.3	2.4	2.0	4.7
Armor	ARX 5109	62 ± 2	14.6	56.5	223	38	1.3	2.7	1.0	2.8
FFR	510	61 ± 2	13.8	55.2	220	35	1.7	3.7	5.0	3.7
MO	Truman	61 ± 2	15.1	56.7	225	38	1.5	1.8	1.2	4.5
AR	Sabbe	61 ± 2	13.8	54.7	223	36	1.0	2.4	1.0	2.5
Progeny	156	60 ± 1	14.1	55.9	222	37	1.5	2.5	1.0	4.0
MD	Choptank	58 ± 1	13.2	55.5	221	30	1.3	2.3	3.5	2.5
Delta Grow	4500	58 ± 2	14.4	56.2	223	38	1.5	2.1	1.0	2.5
FFR	8309	55 ± 1	14.6	56.1	225	35	1.6	2.2	2.5	2.3

(continued)

**Table 9. (continued) Mean yields† and agronomic characteristics of 47 soft red winter wheat varieties evaluated at five locations (n=10) in Tennessee for two years, 2004 - 2005.**

Brand	Variety	Avg. Yield		Test			BYD	Stripe	Leaf	
		± Std Err. (n=10)‡	Moisture (n=10)	Weight§ (n=5)	Maturity (n=9)	Height (n=10)	Lodging (n=2)	Virus (n=1)	Rust (n=1)	Diseases (n=1)
		bu/a	%	lbs/bu	DAP	in.	Score	Score	Score	Score
<b>Varieties* -- Seed Treated with Systemic Insecticide</b>										
USG	3350 (Gaucho)	75 ± 1	14.3	56.1	222	39	1.6	1.6	1.0	3.0
USG	3430 (Gaucho)	73 ± 1	14.0	55.8	221	39	1.6	1.9	1.0	3.2
USG	3209 (Gaucho)	68 ± 1	13.8	56.4	221	32	2.3	1.9	3.3	2.7
USG	3592 (Gaucho)	68 ± 1	14.0	56.5	222	37	2.3	2.0	3.3	3.2

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

§ Official test weight of No. 2 wheat = 58 lbs/bu.

\* Tested in the same trial with untreated varieties

Heading & Maturity (DAP) = Days after planting

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.

Stripe Rust, Leaf Disease, BYD = Barley Yellow Dwarf Virus - 1 to 5 scale; where 1 = 95% of plants non-infected;

2.5 = ~50% of plants infected; 5 = 95+% of plants infected.

BYD notes taken at the Knoxville location in 2004.

Stripe Rust and Leaf Disease ratings taken at the West Tennessee Experiment Station, Jackson, TN in 2005.

**Table 10. Mean yields† of 22 soft red winter wheat varieties evaluated at five locations (n=15) in Tennessee for three years, 2003 - 2005.**

Brand	Variety	Avg. Yield ± Std Err. (n=15)‡	Spring				
			Knoxville	Springfield	Hill	Jackson	Milan
			-----bu/a-----				
Cache River Valley Seed	Dixie 900	68 ± 1	70	64	68	78	59
Cache River Valley Seed	Dixie 922	67 ± 1	69	65	61	80	60
NK Brand	Coker 9152	66 ± 1	67	68	67	70	60
Pioneer	25R78	66 ± 1	75	66	58	75	55
Pioneer	25R37	66 ± 1	72	65	64	73	54
Delta King	DK 9410	64 ± 1	65	63	57	75	63
NK Brand	Coker 9663	63 ± 1	70	63	62	70	51
Pioneer	26R58	63 ± 1	65	66	66	68	51
Delta King	DK 7900	63 ± 1	64	63	59	73	56
VA	Roane	63 ± 1	75	61	60	67	51
AR	Pat	62 ± 1	71	66	58	66	51
Progeny	166	62 ± 1	65	65	58	67	55
VA	McCormick	62 ± 1	75	65	55	64	50
Progeny	145	61 ± 1	61	64	59	67	57
Vigoro (Royster Clark)	Tribute	61 ± 1	70	68	55	61	52
FFR	510	60 ± 1	69	67	61	59	45
Agripro	Beretta	59 ± 1	67	54	53	71	48
FFR	556	58 ± 1	75	60	48	59	49
Delta King	DK 1551w	58 ± 1	60	58	50	66	55
AR	Sabbe	57 ± 1	55	63	57	58	51
Progeny	156	57 ± 1	56	61	57	57	53
<b>Variety* -- Seed Treated with Systemic Insecticide</b>							
USG	3209 (Gaucho)	64 ± 1	81	60	55	67	57
<b>Average (bu/a)</b>		<b>62</b>	<b>68</b>	<b>63</b>	<b>58</b>	<b>68</b>	<b>54</b>
<b>L.S.D.<sub>.05</sub> (bu/a)</b>		<b>4</b>	<b>7</b>	<b>9</b>	<b>10</b>	<b>13</b>	<b>10</b>
<b>C.V. (%)</b>		<b>11.0</b>	<b>7.7</b>	<b>9.9</b>	<b>11.8</b>	<b>12.8</b>	<b>13.1</b>

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

\* Tested in the same trial with untreated varieties

**Table 11. Mean yields† and agronomic characteristics of 22 soft red winter wheat varieties evaluated at five locations (n=15) in Tennessee for three years, 2003 - 2005.**

Brand	Variety	Avg. Yield	Moisture	Test			Lodging	BYD	Stripe	Leaf	
		± Std Err. (n=15)‡		(n=15)	Weight§ (n=9)	Heading (n=1)		Maturity (n=14)	Height (n=15)	Virus (n=1)	Rust (n=1)
		bu/a	%	lbs/bu	DAP	DAP	in.	Score	Score	Score	
Cache River Valley Seed	Dixie 900	68 ± 1	13.6	55.0	180	217	38	1.6	1.9	1.0	3.5
Cache River Valley Seed	Dixie 922	67 ± 1	13.8	55.2	179	218	39	1.7	1.4	1.2	2.0
NK Brand	Coker 9152	66 ± 1	13.0	55.2	174	216	38	3.1	2.4	1.0	2.3
Pioneer	25R78	66 ± 1	13.2	55.7	176	216	33	1.1	1.8	4.0	2.7
Pioneer	25R37	66 ± 1	14.0	56.7	180	219	34	1.5	1.9	1.2	3.8
Delta King	DK 9410	64 ± 1	13.7	55.4	180	218	39	1.6	1.9	1.0	3.3
NK Brand	Coker 9663	63 ± 1	14.1	56.7	179	220	39	2.8	1.6	3.2	3.8
Pioneer	26R58	63 ± 1	12.8	53.9	179	217	33	1.4	2.8	4.3	3.2
Delta King	DK 7900	63 ± 1	13.4	54.6	180	217	39	1.6	1.8	1.0	2.8
VA	Roane	63 ± 1	14.0	58.0	179	219	33	1.2	1.6	2.3	3.0
AR	Pat	62 ± 1	13.7	56.9	181	221	37	1.3	1.4	1.0	3.8
Progeny	166	62 ± 1	13.8	55.3	180	218	38	1.7	2.0	1.0	3.0
VA	McCormick	62 ± 1	14.0	57.6	179	219	32	1.6	2.6	1.0	3.3
Progeny	145	61 ± 1	13.6	55.1	179	218	38	1.6	2.3	1.0	3.3
Vigoro (Royster Clark)	Tribute	61 ± 1	14.5	58.6	176	220	33	1.4	2.4	2.0	4.7
FFR	510	60 ± 1	13.3	54.8	173	216	35	1.8	3.7	5.0	3.7
Agripro	Beretta	59 ± 1	13.0	53.8	180	218	33	1.6	1.6	1.0	3.5
FFR	556	58 ± 1	13.2	54.4	180	217	32	2.4	2.2	3.5	4.8
Delta King	DK 1551w	58 ± 1	12.9	54.5	181	218	34	1.3	2.5	2.3	3.7
AR	Sabbe	57 ± 1	13.1	53.7	181	219	36	1.7	2.4	1.0	2.5
Progeny	156	57 ± 1	13.5	54.6	180	218	37	1.6	2.5	1.0	4.0

**Variety\* -- Seed Treated with Systemic Insecticide**

USG	3209 (Gaucho)	64 ± 1	13.4	55.6	179	217	32	2.4	1.9	3.3	2.7
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† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

§ Official test weight of No. 2 wheat = 58 lbs/bu.

\* Tested in the same trial with untreated varieties

Heading & Maturity (DAP) = Days after planting

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.

Stripe Rust, Leaf Disease, BYD = Barley Yellow Dwarf Virus - 1 to 5 scale; where 1 = 95% of plants non-infected; 2.5 = ~50% of plants infected; 5 = 95+% of plants infected.

BYD notes taken at the Knoxville location in 2004. Stripe Rust and Leaf Disease ratings taken at the West Tennessee Experiment Station, Jackson, TN in 2005.

## Barley

### Results

Five released varieties of barley were tested during 2005 at four experiment stations representing the different physiographic regions of Tennessee. Due to adverse planting and growing conditions as well as mechanical difficulties at harvest, data were judged to be invalid at two locations and only data from two locations are reported. The five varieties (Callao, Doyce, Nomini, Price, and Thoroughbred) have been evaluated for three years. All of the varieties evaluated in these tests were developed in the Barley Breeding Program at Virginia Tech. The variety, Doyce, is a hull-less type.

The average yield of the five entries across the two locations was 106 bu/a, with a range from 90 to 114 bu/a. The highest yields were obtained at Knoxville where the location mean of the five entries was 118 bu/a and the highest variety yield was 137 bu/a (Thoroughbred). The maturity of the barley entries ranged from 217 to 219 DAP. The barley varieties adapted to Tennessee generally mature about a week to ten days earlier than adapted wheat varieties. The test weights of the barley entries ranged from 43.8 to 54.9 lbs/bu, with most of the entries being 45.5 lbs/bu. Doyce has a higher test weight of 54.9 due to the hull-less nature of its grain. The official test weight for barley is 48 lbs/bu compared to 58 lbs/bu for wheat.

**Table 12. Location information from experiment stations where the barley variety test was conducted in 2005.**

<b>Experiment Station</b>	<b>Location</b>	<b>Planting Date</b>	<b>Harvest Date</b>	<b>Seeding Rate</b>	<b>Soil Type</b>
Highland Rim	Springfield	11/8/2004	6/22/2005	28/ft <sup>2</sup>	Mountview Silt Loam
Knoxville	Knoxville	10/28/2004	6/15/2005	28/ft <sup>2</sup>	Sequoia Silty Clay Loam
Milan	Milan	11/17/2004	6/21/2005	32/ft <sup>2</sup>	Grenada Silt Loam
Middle Tennessee	Spring Hill	11/9/2004	6/14/2005	26/ft <sup>2</sup>	Maury Silt Loam
West Tennessee	Jackson	11/10/2004	6/14/2005	28/ft <sup>2</sup>	Lexington Silt Loam

**Table 13. Mean yields† of five six-rowed barley varieties evaluated at two locations in Tennessee during 2005.**

Brand	Variety	Avg. Yield ± Std Err.		Spring Hill
		(n=2)‡	Knoxville	
-----bu/a-----				
VA	Thoroughbred	114 ± 5	137	91
VA	Callao	111 ± 5	121	101
VA	Price	110 ± 5	135	86
VA	Nomini	101 ± 5	96	106
VA	Doyce* (hull-less)	90 ± 5	100	80
<b>Average (bu/a)</b>		<b>106</b>	<b>118</b>	<b>93</b>
<b>L.S.D.<sub>.05</sub> (bu/a)</b>		<b>14</b>	<b>25</b>	<b>12</b>
<b>C.V. (%)</b>		<b>10.4</b>	<b>11.9</b>	<b>6.1</b>

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

\* hull-less

**Table 14. Mean yields† and agronomic characteristics of five six-rowed barley varieties evaluated at two locations in Tennessee during 2005.**

Brand	Variety	Avg. Yield ± Std Err.		Test			
		(n=2)‡	Moisture (n=2)	Weight§ (n=3)	Maturity (n=4)	Height (n=5)	Lodging (n=2)
		bu/a	%	lbs/bu	DAP	in.	Score
VA	Thoroughbred	114 ± 5	12.4	47.2	219	34	1.6
VA	Callao	111 ± 5	11.8	45.3	217	31	3.6
VA	Price	110 ± 5	12.1	45.6	218	33	2.6
VA	Nomini	101 ± 5	12.8	43.8	217	40	2.9
VA	Doyce* (hull-less)	90 ± 5	13.3	54.9	219	34	3.3

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

§ Official test weight of No. 1 barley = 48 lbs/bu.

\* hull-less

Heading & Maturity (DAP) = Days after planting

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.

**Table 15. Mean yields† of five six-rowed barley varieties evaluated at two locations (n=4) in Tennessee for two years, 2004 - 2005.**

Brand	Variety	Avg. Yield ± Std Err. (n=4)‡		Spring Hill
		-----bu/a-----		
VA	Thoroughbred	122 ± 4	134	110
VA	Price	107 ± 4	131	84
VA	Callao	104 ± 4	119	89
VA	Nomini	102 ± 4	107	98
VA	Doyce* (hull-less)	84 ± 4	94	74
<b>Average (bu/a)</b>		<b>104</b>	<b>117</b>	<b>91</b>
<b>L.S.D.<sub>.05</sub> (bu/a)</b>		<b>11</b>	<b>13</b>	<b>19</b>
<b>C.V. (%)</b>		<b>12.8</b>	<b>9.6</b>	<b>16.6</b>

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

\* hull-less

**Table 16. Mean yields† and agronomic characteristics of five six-rowed barley varieties evaluated at two locations (n=4) in Tennessee for two years, 2004 - 2005.**

Brand	Variety	Avg. Yield ± Std Err. (n=4)‡		Moisture (n=4)	Test Weight§ (n=2)	Heading (n=1)	Maturity (n=3)	Height (n=4)	Lodging (n=3)
		bu/a		%	lbs/bu	DAP	DAP	in.	Score
VA	Thoroughbred	122 ± 4	12.8	47.0	186	216	37	1.8	
VA	Price	107 ± 4	12.4	46.1	186	214	35	2.6	
VA	Callao	104 ± 4	12.3	45.5	184	215	35	3.9	
VA	Nomini	102 ± 4	12.8	43.8	181	218	41	2.3	
VA	Doyce* (hull-less)	84 ± 4	13.4	53.4	186	216	35	1.8	

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

§ Official test weight of No. 1 barley = 48 lbs/bu.

\* hull-less

Heading & Maturity (DAP) = Days after planting

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.

**Table 17. Mean yields† and agronomic characteristics of five six-rowed barley varieties evaluated at one location (n=3) in Tennessee for three years, 2003 - 2005.**

Brand	Variety	Knoxville	Moisture	Test	Heading	Maturity	Height	Lodging
		Avg. Yield ± Std Err. (n=3)‡		Weight§ (n=3)				
		bu/a	%	lbs/bu	DAP	DAP	in.	Score
VA	Thoroughbred	115 ± 3	12.6	45.7	178	217	38	2.2
VA	Price	108 ± 3	12.4	44.1	178	214	36	2.9
VA	Nomini	101 ± 3	12.6	43.3	173	219	42	2.8
VA	Callao	98 ± 4	12.3	45.3	177	216	35	4.0
VA	Doyce* (hull-less)	81 ± 3	13.7	53.2	182	218	36	2.2
<b>Average (bu/a)</b>		<b>101</b>						
<b>L.S.D.<sub>.05</sub> (bu/a)</b>		<b>11</b>						
<b>C.V. (%)</b>		<b>10.0</b>						

† All yields are adjusted to 13.5% moisture.

‡ n = number of environments

§ Official test weight of No. 1 barley = 48 lbs/bu.

\* hull-less

Heading & Maturity (DAP) = Days after planting

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.