

## **Straw Yields from Six Small Grain Varieties**

2003-2004 and 2004-2005 growing seasons

Chad Lee and John Grove, University of Kentucky

The retail wheat straw market commands about \$70 to \$100 per ton. Some farmers are receiving about \$30 to \$40 per ton in the wholesale market. Two basic assumptions about straw production are 1) taller wheat means more straw; and 2) more grain means more straw. A study was conducted to determine if either of these assumptions were true. In addition, varieties were compared for yield and planting date effect on straw yield was determined.

Five soft red winter wheat varieties and one triticale variety were planted at different planting dates over two years at University of Kentucky Spindletop Farm, Lexington, KY. The varieties are listed on Table 1. Seed from each variety was planted on October 13, October 31 and November 26, 2003 and November 11 and December 16, 2004 at a target population of 35 seeds/ft<sup>2</sup>. Soil fertility was conducted according to soil tests and AGR-1: Lime and Fertilizer Recommendations. Weeds were controlled with appropriate herbicides. Whole plants were harvested and weighed for total weight. Heads were removed and weights were taken, then the head weight was subtracted from the whole plant weight to determine straw weights. The yields reported here may be slightly higher than yields obtained with typical farm equipment since more loss from the harvester and baler might be expected.

When yields were averaged over planting dates, the five winter wheat varieties produced similar straw yields during the 2003-2004 growing season (Table 2). The triticale variety yielded more straw (nearly 2 tons/acre) than any of the wheat varieties (averaged nearly 1.2 tons/acre). During the 2004-2005 growing season, the triticale variety yielded over 2 tons/acre in straw production. This was significantly greater than straw yield from any of the wheat varieties. Four of the wheat varieties (Exsegen Sarah, KAS Allegiance, NK Coker 9663 and Pioneer 25R49) had yields that were not significantly different from each other in 2004-2005 growing season. Pioneer 25R23 produced significantly lower straw yields than Exsegen Sarah and KAS Allegiance.

The two October, 2003 planting dates resulted in straw yields that were not significantly different from each other (Table 2). The November, 2003 planting date resulted in straw yields that were significantly less than straw yields from the earlier planting dates. The December, 2004 planting date resulted in lower yields than the November, 2004 planting date. However, all yields from all planting dates were close to or above 1 ton/acre.

As plant height increased, straw yield increased (Figure 1). Straw yields had very poor to no relationships with grain yield (Figure 2).

Results from this study indicate that taller wheat provides more straw per acre. However, higher grain yields do not always translate into higher straw yields. Late planting dates reduce yield, but yields were close to or above 1 ton/acre in for all planting dates, which is \$30 to \$40 per ton value for the wholesale market. If a farmer is raising a small grain primarily for straw, then triticale may be the better option.

**Table 1.** Small grain varieties, species, head type and statewide average yield and height from the 2002-2003 Kentucky Small Grains Variety Trials Report.

Variety	Type	Head Type	2002-2003	
			Yield (bu/a)	height (in)
Pioneer 25R23	Wheat*	awned	83	36
Pioneer 25R49	Wheat	awnless	82	34
KAS Allegiance	Wheat	awned	82	40
Exsegen Sarah	Wheat	awnless	79	39
Trical 336	Triticale	awned	78	48
NK Coker 9663	Wheat	awnless	68	41

\*Wheat = soft red winter wheat.

**Table 2.** Straw yields for each planting date.

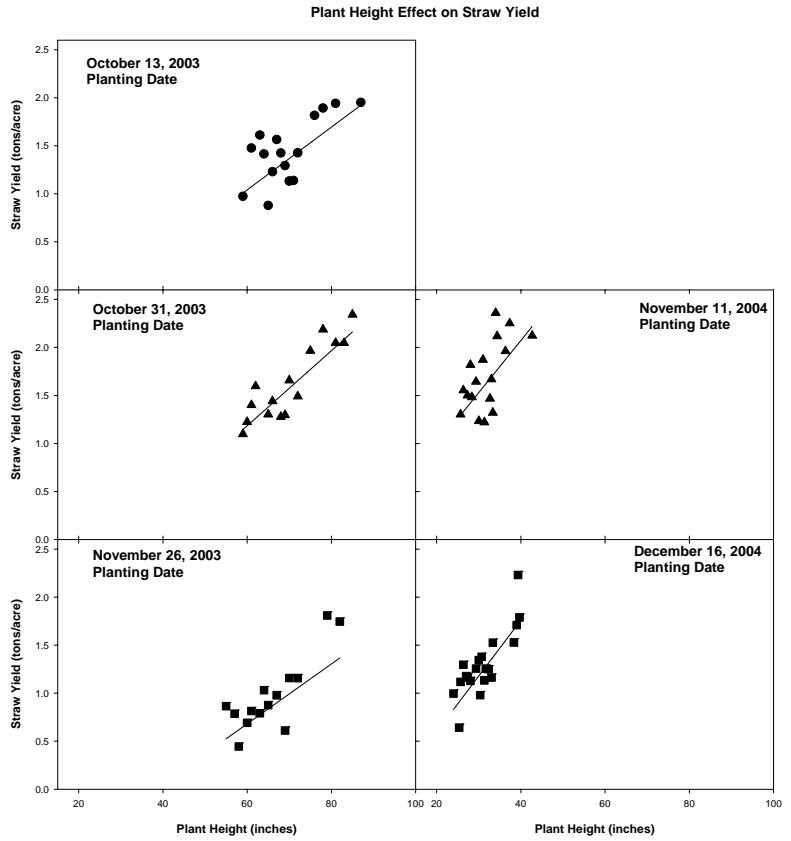
Variety	Type <sup>1</sup>	Planting Date, 2003			Average	
		13-Oct	31-Oct	26-Nov		
Straw Yield (tons/acre)						
Exsegen Sarah	SRW	1.35	1.59	0.89	1.28	b
KAS Allegiance	SRW	1.22	1.32	0.93	1.16	b
NK Coker 9663	SRW	1.40	1.44	0.84	1.23	b
Pioneer 25R23	SRW	1.42	1.52	0.77	1.24	b
Pioneer 25R49	SRW	1.36	1.35	0.74	1.15	b
Trical 336	Triticale	1.93	2.16	1.77	1.95	a
LSD (0.05)					0.17	
Average		1.44 a	1.56 a	0.99 b		
LSD of AVG (0.05)		0.12				

Variety	Type	Planting Date, 2004			Average	
		11-Nov	16-Dec			
Straw Yield (tons/acre)						
Exsegen Sarah	SRW	1.92	1.07		1.49	b
KAS Allegiance	SRW	1.66	1.35		1.51	b
NK Coker 9663	SRW	1.40	1.37		1.39	bc
Pioneer 25R23	SRW	1.45	1.00		1.22	c
Pioneer 25R49	SRW	1.76	1.17		1.47	bc
Trical 336	Triticale	2.30	1.82		2.06	a
LSD (0.05)					0.26	
Average		1.75 a	1.29 b			
LSD of AVG (0.05)		0.15				

<sup>1</sup> SRW = soft red winter wheat.

<sup>2</sup> For means averaged across planting dates, different letters within a column denote significant differences. For means averaged across variety, different letters within a row denote significant differences.

**Figure 1.** Small grain plant height affects straw yield.



**Figure 2.** Small grain straw yield has a very poor to no relationship with grain yield.

