# WHEAT YIELD RESPONSE TO WIDE ROWS

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Many farmers in Kentucky and surrounding areas are interested in planting wheat in 15-inch rows. In general, a planter does a better job of seed placement than a drill. Many producers who grow wheat occasionally no longer own drills. If wheat could be successful in 15-inch rows, then these producers could avoid the additional cost of a drill. For three seasons, the Kentucky Small Grain Growers have sponsored a research project on wheat in 15-inch rows.

Jim Herbek and Chad Lee, extension agronomists, for the University of Kentucky, planted wheat in Princeton and near Lexington, Kentucky in 2008, 2009 and 2010. In all cases, the studies were no-tillage and followed corn. In the first two seasons, three wheat varieties were tested. AgriPro Coker Branson, Beck's 122 and Pembroke were seeded the first two seasons. There were no interactions between variety and row width for the first two seasons (Table 1), so only Pembroke was seeded for 2010-2011. All varieties tested were considered to tiller well, so the lack of differences between varieties may be attributed to the tillering capabilities of all three varieties.

In each season of the study, there were no interactions between study location and treatments (data not shown), so yields were averaged over locations. In the 2008-2009 season, wheat in 7.5-inch rows yielded about 7.7 bushels per acre (or 8.5%) greater than wheat in 15-inch rows (Table 2). In the 2009-2010 season, wheat yields were not significantly different in any row width or at lower seeding rates in 15-inch rows. In the 2010-2011 season, wheat yields in 3.75-inch rows and 7.5-inch rows were 9.0 and 8.4 bushels per acre, respectively, greater than wheat yields in 15-inch rows.

Wheat in 15-inch rows provided excellent yields in this study with seasonal averages at 78 or more bushels per acre. However, in two of the three years, the wheat yields in 15-inch rows were about 8.5 to 10% less than wheat yields in 7.5-inch rows. Wheat in 3.75-inch rows yielded similarly to wheat in 7.5-inch rows.

For wheat in 15-inch rows, reducing the seeding rate did not reduce yields. Wheat in 15-inch rows seeded at 25 seeds per square foot yielded similarly to wheat seeded at 35 seeds per square foot. This is a 28% reduction in seeding rate with no significant yield losses.

In the 2010-2011 season, the researchers also examined the impact of corn residue on wheat yields. In some treatments, the loose residue was removed from the test plots before planting, while in most treatments, the residue remained on the soil. There was no difference in yield with and without the corn residue (data not shown).

Producers with 15-inch rows most likely would be pleased with yields above 70 bushels per acre. Producers who want to use 15-inch rows should consider reducing seeding rates to save a little more on seeding costs. However, the reduction in seeding rates from 35 to 25 seeds per square foot only saves about $10/acre. The yield losses of 8.5 to 10% cost about $40/acre under current pricing. So, as long as the commodity price of wheat remains high, producers will make more money most years by planting wheat in 7.5-inch rows. If wheat commodity prices drop, there may be a time when planting wheat in 15-inch rows is as profitable as wheat in 7.5-inch rows.

**TABLE 1. FIXED EFFECTS OF WHEAT ROW WIDTH STUDY**

| Main Effects[1] | 2008-2009 | 2009-2010 | 2010-2011 |
|---|---|---|---|
| | ---------- p value [2] ---------- | | |
| Row Width & Density (RD) | 0.0179 | 0.3507 | 0.0739 |
| Variety (VTY) | 0.2778 | 0.0015 | |
| VTY*RD | 0.9991 | 0.4582 | |

[1] **Three varieties were seeded in 2008-2009 and 2009-2010 but only one variety was seeded in 2010-2011.**

[2] **P value of 0.10 or less is considered significant.**

**TABLE 2. WHEAT YIELD RESPONSE TO ROW WIDTHS FOR THREE SEASONS IN KENTUCKY [1]**

| Season | Row Width, inches | Seed Rate, seeds/ft[2] | Yield, bu/A | Differences of Least Squares | Yield Difference, bu/A | P value [2] |
|---|---|---|---|---|---|---|
| 2008-2009 | 15 | 35 | 89.8 | 15_35 vs 7.5_35 | -7.7 | 0.0179 |
| | 7.5 | 35 | 97.5 | | | |
| 2009-2010 | 15 | 25 | 96.0 | | | |
| | 15 | 35 | 98.4 | | | |
| | 3.75 | 35 | 98.2 | | | |
| | 7.5 | 35 | 100.0 | | | |
| 2010-2011 | 15 | 25 | 79.0 | 15_35 vs 3.75_35 | -9.0 | 0.0382 |
| | 15 | 35 | 78.0 | 15_35 vs. 7.5_35 | -8.4 | 0.0484 |
| | 3.75 | 35 | 86.8 | | | |
| | 7.5 | 35 | 86.3 | | | |

[1] **Locations: 2009: Princeton and Lexington, 2010: Princeton and Lexington, 2011: Princeton and Woodford County. Wheat varieties: 2009: Beck's 122, Branson, Pembroke; 2010: Beck's 122, Branson, Pembroke; 2011: Pembroke.**

[2] **P value of 0.10 or less is considered significant.**