

Row Spacing and Planting Date Affect Sunflower Yield

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Missouri currently has three large commercial birdseed packaging plants. In addition, a fourth packaging plant is being developed that will have the capability of supporting up to 40,000 acres of sunflowers. In 2002, Missouri growers harvested approximately 5,000 acres of sunflowers. This indicates that there is a large potential for growth both in acreage and finished product for Missouri growers. In addition to the birdseed market, several potential uses also exist for sunflower as food grade oil (NuSun™) or use as a protein source for finishing cattle as well as for wintering or grazing mother cows.

Materials and Methods:

Research was initiated at the Bradford Research and Extension Center in 2002 to quantify the effect of cultivar, crop row spacing, and planting date on sunflower yield. The experimental design was a randomized complete block split-plot design with four replications. The whole plot factor was planting date. This consisted of either a full season (May 22nd) or a double crop (July 2nd) planting date. The two sunflower cultivars tested were; 8377NS, a NuSun™ cultivar and SF270, a traditional sunflower cultivar. The three row spacings tested were 30, 15, and 7.5 inches. Yield data was collected from only two of the four replications on the second planting date due to poor crop establishment. Prior to planting, 130 pounds of nitrogen was surface applied. Phosphorus and potassium were applied according to soil test recommendations provided by the University of Missouri Soil and Plant Testing Laboratory. Sunflower yield was quantified at physiological maturity and was adjusted to 10% moisture.

Results and Discussion:

A significant planting date by cultivar interaction occurred; therefore yield data was analyzed separately by planting date. Crop yield was similar among cultivars at the early planting date; however SF270 yield was greater than 8377NS in the later planting date (Figure 1). Crop yield was greater in the 7.5 inch row spacing than in the 30 inch row spacing across cultivars in the full season system; however row spacing did not affect crop yield in the double crop system (Figure 2). Overall, sunflower yield was greater in the full season than in the double crop sunflower production system. Preliminary data indicated that cultivar selection, crop row spacing, and proper stand establishment are critical components in maximizing either a full season or double crop sunflower yield. This experiment will be repeated in 2003.

Figure 1. Sunflower Yield Response to Cultivar and Planting Date in 2002.

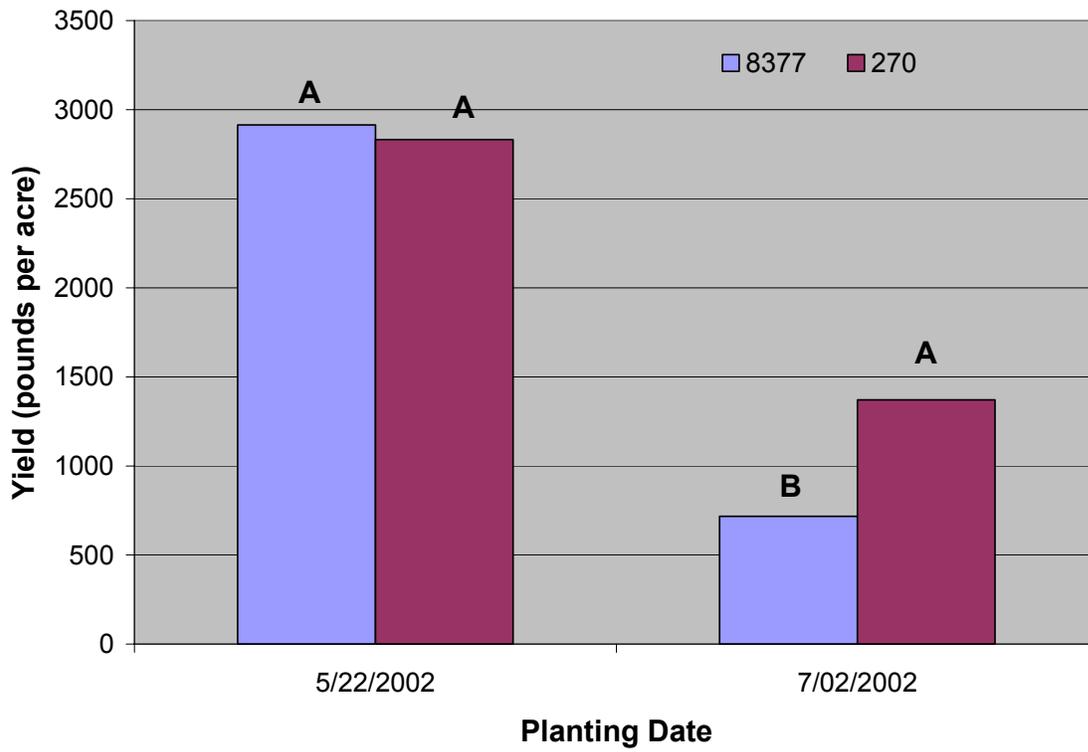
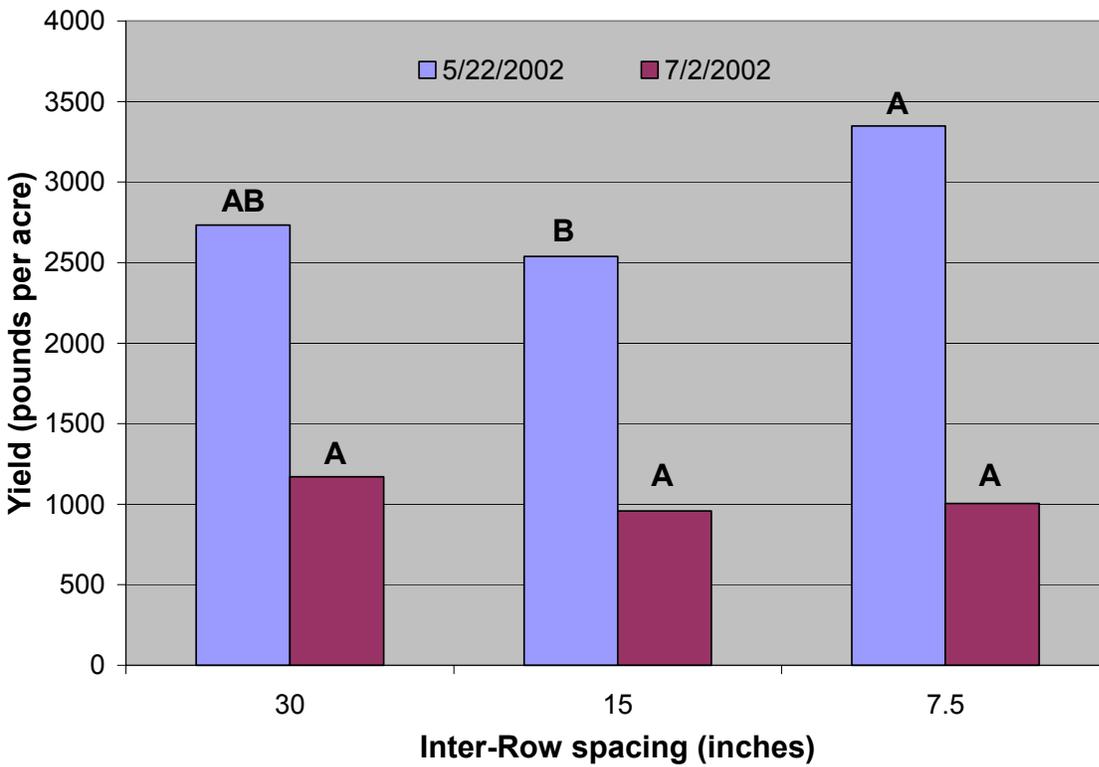


Figure 2. Sunflower Yield Response to Planting Date and Row Spacing in 2002.



*Yield data analyzed within planting date.