Seeding Rate and Row Spacing for Westbred 881 and Aldura Durum Wheat at Maricopa, 1987

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ABSTRACT

Westbred 881 durum wheat commands a premium price due to its superior quality, but produces a lower yield than other commonly grown commercial cultivars. This study was initiated to improve our understanding of how best to manage Westbred 881. Two durum wheat cultivars (Westbred 881 and Aldura) were planted at 5 seeding rates (30, 60, 120, 180, and 240 lbs. seed/A), 5 row spacings (3, 6, 12, 18, and 24 inches), and two planting dates (Dec. 1 and Jan. 16) at the Maricopa Agricultural Center. Both cultivars produced optimum yields at seeding rates of 120 to 180 lbs/A for the Dec. 1 planting date. At the Jan. 16 planting date, however, yields of Westbred 881 increased linearly with seeding rate up to 240 lbs/A, while Aldura produced optimum yields between 120 and 180 lbs. seed/A. At the Dec. 1 planting date, Aldura produced similar yields at row spacings from 3 to 12 inches, while the yield of Westbred 881 decreased linearly with an increase in row spacing. The highest yield achieved in this study was with Westbred 881 at the 3-inch row spacing. Row spacings of 6 to 12 inches were optimum for both Westbred 881 and Aldura at the Jan. 16 planting date. The seeding rate and row spacing responses attained with Westbred 881 may be related to its tillering characteristics.

INTRODUCTION

Westbred 881 durum wheat receives a premium price due to its superior quality. However, grain yields of Westbred 881 have been 5% to 20% lower than Aldura, a commonly grown commercial cultivar, in yield tests conducted by the University of Arizona. The present recommendation is for producers to use their better land and good management practices when growing Westbred 881. The objective of this study was to determine optimum seeding rates and row spacings for Westbred 881 compared to Aldura.

MATERIALS AND METHODS

Field studies were initiated at the Maricopa Agricultural Center in the 1986-87 growing season on a Trix clay loam. The previous crop was Sudan grass. Two durum wheat cultivars (Westbred 881 and Aldura) were planted at 5 seeding rates (30, 60, 120, 180, and 240 lbs. seed/A) at 5 row spacings (3, 6, 12, 18, and 24 inches) and at two planting dates (Dec. 1 and Jan. 16). The experimental design was a 5x5 Latin square with seeding rates or row spacings as main plots and cultivars as sub-plots. The seeding rate trial was planted in 6-inch rows and the row spacing trial was planted at 100 lbs. seed/A.
CONCLUSIONS

Positive identification of trends from a single study is not possible. However, this study suggests several possibilities for achieving higher yields of Westbred 881. First, relatively higher seeding rates may be necessary for Westbred 881 than Aldura at later planting dates. Secondly, Westbred 881 may achieve yields similar to Aldura only at narrower (3-inch) drill spacings. The seeding rate and row spacing responses attained with Westbred 881 may be related to its tendency to produce fewer tillers than Aldura and to produce tillers over a shorter period of time.

Figure 1. Grain yield of Westbred 881 and Aldura as influenced by seeding rate at planting dates of Dec. 1 and Jan. 16.

Figure 2. Grain yield of Westbred 881 and Aldura as influenced by row spacing at planting dates of Dec. 1 and Jan. 16.