

**INTERACTION OF SEEDING RATE, SEED AND  
IN-FURROW TREATMENT ON COTTON  
SEEDLING DISEASES AND YIELDS**

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**Abstract**

When the cotton producer begins to plant his crop, he faces several decisions which will have a great impact on the crops stand, earliness and yield. Seeding rates can be adjusted to partially compensate for stand losses due to seedling diseases. Seed, hopper box and in-furrow applied fungicides can be applied to further reduce disease. With the emergence of several transgenic cotton varieties and the probable high seed cost of these varieties, the use of higher seeding rates may no longer be economical. Costs of seed and in-furrow applied fungicides have continued to rise. Therefore, we evaluated various seeding rates and fungicide combinations to determine which ones would give an acceptable stand and seed cotton yields using the lowest seeding rate and/or fungicide rate possible.

Four seeding rates (3,5,7, and 10 seed per foot) and four fungicide treatments (None, the hopper-box treatment Delta Coat, 11.75 oz/CWT, and the in-furrow treatments Terraclor Super X (TSX), 12.5 G, at 10 and 15 lb/A) were evaluated. Plots were inoculated with *Rhizoctonia solani* and *Pythium* Spp. to increase seedling disease. Two levels of disease were established 1. Low-medium (oat inoculum) and 2. Medium to high (Panicum inoculum). Experimental design was a Randomized Complete Block with Factorial arrangement of treatments and four replications. Plot size was two rows, forty feet long. The trial was conducted for four years. The following results are for the four year averages. In the trial under low to medium disease pressure seedling stands were significantly increased at the 3 and 5 seed per foot seeding rate, with some treatments and at the 7 seed per foot seeding rate following the use of in-furrow applied fungicides. However, there were no consistent significant increases in seed cotton yields for any of the seeding rates, seed treatment, hopper-box treatment or in-furrow treatments in the low-medium disease pressure trial. In the high disease pressure trial, seedling stands were significantly increased in some years by the addition of a hopper box treatment and in almost all years by the addition of in-furrow applied fungicides at the 3,5, and 7 seed per foot seeding rate. Significant yield increases were more often obtained following the use of an in-furrow applied fungicide at the lower seeding rates of 3 and 5 seed per foot. The use of hopper-box or in-furrow applied

fungicides with the higher seeding rates of 7 and 10 seed per foot usually did not result in a significant stand or yield increase.

In general, when there was a response and disease pressure was high, in-furrow treatments resulted in higher stands and yield increases over hopper-box treatments. Both hopper-box and in-furrow treatments significantly increased seedling stands in the low-medium disease pressure trial, however these increased stands did not translate into increased seed cotton yields. The use of high seeding rates of 7 and 10 seed per foot partially compensated for stand losses due to seedling diseases. Conversely it was more critical to use an in-furrow fungicide at the lower seeding rates and high disease pressures.