INTERACTION OF SEEDING RATE AND FUNGICIDE TREATMENT ON COTTON SEEDLING SURVIVAL

Gabriel L. Sciumbato
Delta Research and Extension Center
Stoneville, MS

Abstract

The most popular practices in seeding rates and seed fungicides that Mississippi cotton producers use have changed in recent years. Seeding rates have been reduced from an average of five seed per row ft to three or even two seed per row ft in 40 inch cotton. The use of in-furrow applied fungicides has gone from a high of 40 percent in the early 1980s to less than one percent now. There are many reasons for the changes including seed cost, the development of larger planters, the need to complete cotton planting as soon as possible, the availability of more effective fungicides, increased safety of seed applied insecticides, and the simplification and streamlining of the planting process.

These trials were conducted to compare four seeding rates of three, four, five, and six seed per row ft. Also the standard seed treatments of Baytan-Thiram 3.0 oz/CWT + Lorsban 0.08 oz/CWT + Allegiance 0.75 oz/CWT was compared to the standard seed treatment + a supplemental hopper-box treatment of Dynasty CST 3.5 oz/CWT, and the standard seed treatments + two rates of the in-furrow spray Uniform 3.72EC at 0.32 and 0.48 oz per 1000 row ft. and the standard seed treatment + one rate of the in-furrow granular Terraclor Super X, 15G at 7 lb/A. Disease pressure was increased by planting the cotton seed with either oats or panicum infested with *Rhizoctonia solani* or *Pythium* Sp. Experimental design was a randomized complete block with factorial arrangement of treatments with four replications. The factors were seeding rate and fungicide treatment. Seedling survival was determined two weeks and four weeks after planting. The trials were harvested and yield in pounds of seed cotton per acre was determined.

In only one of the three years of the experiment, a hopper-box treatment significantly increased seedling survival over a seed treatment alone. In all three years of the experiment, there were significantly higher seedling survival in the plots treated with one of the in-furrow applied fungicides over those receiving a seed treatment alone or a seed treatment + a hopper-box treatment. However, there were not significant differences in seed cotton yields due to fungicide treatment in two of the years of the experiment. Only in 2006, when disease pressure was extremely high, did the use of an in-furrow applied fungicide significantly increase seed cotton yields.

The higher seeding rates had significantly higher seedling survival over the lower seeding rates. However, there were no significant differences in seed cotton yields due to seeding rate for two of the three years. Only in 2006, when disease pressure was extremely high, did the higher seeding rate plots yield significantly higher.