EFFECTS OF HANDLING OF COTTON SEED ON STAND ESTABLISHMENT AND CROP YIELD

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Abstract

Trials were established at 3 locations, the Prattville Research Unit (PRU), Brewton Research Unit (BRU) and the Tennessee Valley Research and Extension Center, to evaluate the effects of exposing seed to (1) physical dropping and (2) high temperatures. One pound of seed of DP 1646 B2XF and PHY 480 W3FE from a plot seed bag from 2019 and 2020 was placed in a Ziplock bag. Treatment 1 consisted of dropping the bag 4 times from a height of 7 ft onto a gravel drive. Treatment 2 was achieved by placing the seed on a black truck mat in full sun for 6 hours. During the heat exposure, temperatures reached 140^{o} F. Altogether there were 12 treatments, 2 varieties each with two seed lots and two specific physical treatments plus an untreated control. Plant stands and seedling vigor was, as expected, less with the DP variety. Averaged across locations and variety, there was no measurable effect of handling treatment on plant stand, vigor or node of 1st square. At BRU, the DP variety produced greater yields than the PHY variety, and physical dropping significantly reduced yield compared to the heat exposed seed and the untreated control. There were surprisingly few overall differences among treatments.