THE EFFECT OF SELECTED HARVEST AID CHEMICALS APPLIED AT VARIOUS TIMES ON SEED QUALITY

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Abstract

The High Plains of Texas, a region that grows about four million acres of cotton each year, has expanded its use of harvest aid chemicals. Harvest aid chemicals are used to prepare cotton for earlier harvest in order to preserve the yield and quality of the crop. Timely applications, however, are essential to avoid premature loss of yield and seed quality. Generally, these materials are recommended to be applied at approximately 60% open boll. The objective of this study was to investigate the application of various harvest aid materials at 5 and 30% open boll on seed quality. This would facilitate an even earlier harvest date. The treatments used were a combination of Prep and Def (1 pint of each) and Harvade (8 oz.). These were compared to a standard treatment of Cyclone applied at 75% open boll. At harvest, a stratified sample was collected. Fifty bolls were harvested from each plot from the upper, middle, and lower sections of the plants. Seed quality was then evaluated on the seed from these stratified sections by using the Cool Warm Vigor Index (CWVI) test and determining the seed index (weight of 100 seeds). The study was conducted at two locations in 1997 and two locations in 1998. Data presented are summarized over the four studies. None of the treatments differentially affected the seed vigor (CWVI) of the seed from the middle strata or lower strata. However, there was a significant location x treatment interaction for the seed from the upper strata; however, no consistent trends were observed. The treatments had no differential effect on the seed index of seed from the middle strata and lower strata. However, all of the treatments except the Harvade applied at 30% open boll, reduced the seed index in the upper strata when compared to the Cyclone applied at 75% open boll. It should be noted, however, that most of the seed subsequently removed in the commercial gravity grading process would largely be seed from this strata. These studies would suggest that producers could apply certain harvest aid materials somewhat earlier than the standard 60% open boll stage and not realize any significant seed quality loss.

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