2003 BELTWIDE COTTON CONFERENCES, NASHVILLE, TN – JANUARY 6-10

EVALUATING COTTON RACE STOCKS FOR RESISTANCE TO WHITEFLIES

Brandon Ripple, Dr. M. Harris, and Dr. C.W. Smith
Texas A&M University
College Station, TX

Abstract

Whiteflies (*Bemisia tabaci)* are pests of cotton crops by indirectly affecting the yield of the crop. These pests feed on the leaves of the cotton plants and produce "honeydew", a sticky liquid secretion. This honeydew covers the lint of the open cotton boll creating problems in the processing of the lint. High densities of these pests can also decrease the productivity of the cotton plant by stripping it of vital nutrients. One objective of our current research was to screen cotton race stocks for susceptibility/resistance to whiteflies. Responses of cotton race stocks to whiteflies are compared to that of commercial cultivars PSC 355 and Delta Pearl. Screens for whiteflies were established using excised leaves placed in a nutrient solution (¼ stength Hoagland's). Leaves were placed under lights that provided the leaves with a 12:12 light and dark period. Adult whiteflies, from a reared colony, were placed in clip cages on leaves and allowed 24 hours to oviposit. Adults were then removed leaving behind eggs to establish a cohort population. This population was followed every day and data taken on the number of whiteflies in each life stage (egg, first instar, second instar, third instar, fourth instar, and adult). This continued until the entire cohort reached adulthood some 35 days later. The development of the population was then charted from this data to compare cotton race stocks to current commercial cultivars. Initial findings demonstrated the screening protocol provides an effective comparison among race stocks and commercial cultivars.