

**EFFECTS OF VARIETY, PLANTING DATE AND N LEVELS
ON STINK-BUG INFESTATIONS IN COTTON**

M.E. Roof

Clemson University PDREC

Florence, SC

P.J. Bauer

USDA-ARS

Florence, SC

Abstract

Stink bugs were seldom a problem in cotton fields prior to the Boll Weevil Eradication Program which was initiated in 1983. Back when boll weevils were economic pests throughout the state, efforts to control them with multiple applications of organophosphate insecticides usually served to hold stink bugs in check as well. Damaging infestations of stink bugs were first observed in 1985 (the final year of the Boll Weevil Eradication Program), and by the early 1990's, problems were occurring in most cotton growing regions of South Carolina. Since 1999, growers have planted an average of nearly 75% of their acreage with Bt-cotton varieties. During that period, less than two insecticide applications were applied in Bt-cotton, compared to four or more in conventional varieties. The low spray environments created in Bt-cotton fields have probably resulted in more stink bug problems. Although stink bugs are now considered a major insect pest of cotton, little is known about factors that might influence their selection of cotton plants as hosts. This study provided an opportunity to measure damage caused by natural infestations of stink bugs to different cotton varieties, N levels and planting dates. Four different varieties (Dp 5415, Dp 5690, Dp 458B and Dp 655B) were planted on 15 April, 1 May and 15 May with N rates of 40, 80 and 120 lbs/acre in a split-split plot design. Plots were 8 rows x 100 ft in 2000 and 8 rows x 65 ft in 2001. Collections of 25 quarter-sized bolls per plot were made on 3 August in 2000 and 31 July and 13 August in 2001. Boll damage was assessed by quartering bolls with sharp knives and examining the inner walls of the bolls, the seeds and the lint. Bolls with warts or probe marks on the inner walls of the bolls were considered to be damaged by stink bugs. The majority of stink bugs found during the weekly field monitoring were green stink bugs, *Acrosternum hilare*. In 2000, the average boll damage ratings of 6.3% was below Clemson's economic threshold of 15% and there were no significant differences between planting dates. Boll damage ratings were higher in 2001, averaging 13.7% on 31 July and 24% on 13 August. There was significantly less boll damage when collections were made on 31 July in 2001 from cotton planted 15 May (6.3%), than either 1 May (14.3%) or 15 April (20.7%). The same numerical trend for damage was shown in the 13 August collection, but differences were not significant. In 2001, damage ratings exceeded 15% in the majority of plots on 31 July and by 13 August the 15-April planting sustained 27% damage. There were no significant differences in stink bug damaged bolls between varieties or N levels in 2000, or on either sampling date in 2001.