INFLUENCE OF BOLL FEEDING BUGS ON COTTON FIBER QUALITY

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Abstract

Successful boll weevil eradication programs and high adoption of Bt cottons have created a low insecticide use environment in southeast cotton production systems. Reduced use of broad spectrum insecticides and perhaps other factors have afforded true bugs to elevate in pest status in this region. Stink bugs are the most common boll feeding bugs found in the southeast and are primary pests. Stink bugs feed on developing cotton bolls by piercing the boll wall and feeding on or near the developing seed with their piercing-sucking mouthparts. Stink bugs prefer to feed on medium sized bolls, but may feed on other bolls in their absence. Excessive feeding on small bolls may result in boll shedding, whereas larger bolls often remain on the plant when damaged. Previous studies have demonstrated that excessive stink bug damage negatively impacts most fiber quality measures. However, these trials did not utilize a commercial cotton picker or ginning processes consistent with commercial standards. Perhaps a mechanical picker will harvest a lower percentage of bug damaged locks compared to handpicking. Perhaps commercial ginning practices (lint cleaners and other ginning processes) will further impact quality parameters. Seedcotton from 43 trials conducted during 2005 and 2006 in GA, NC, SC, and AL were machine picked and ginned at the University of Georgia MicroGin which processes cotton consistent with commercial ginning practices. Lint samples were submitted to Cotton Incorporated for HVI and AFIS fiber quality analysis. Percent lint turnout and most fiber measures were negatively impacted when excessive stink bug damage occurred. Fiber measures associated with length tended to decrease and short fiber content increased as bug damage increased. Reduced color grades, larger neps, and more neps tended to be observed in stink bug damaged samples. Results to date appear to support that fiber quality is preserved when stink bugs are managed for profit maximization.