

**INCIDENCE OF LATE SEASON BOLL ROT
IN EASTERN GEORGIA COTTON:
INFLUENCE OF STINKBUG**

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Abstract

In September, 1996, cotton bolls of NuCotn 35B grown in two eastern Georgia counties (Burke and Screven), were found to contain internal lint rot within single or multiple locules. In one field of NuCotn 35B, over 30% of the bolls containing an abnormal tip morphology, had locular lint rot. No external disease damage was observed, but stinkbug (*Euschistus servis*) type injury was noted on many of the bolls containing the internal damage. Puncture wounds containing internal corky growth resembling stinkbug injury, were often observed along the internal wall of bolls containing lint rot. Stinkbug counts were below threshold, however, and damage due to these pests could not be confirmed. Also, abnormal numbers of bloom tags which remained attached to the boll tips, may have served as a reservoir for storing moisture enabling the establishment of bacteria or fungi or the tissue may have acted as a protective barrier for harboring insects. The internal damage occurred most frequently in bolls that formed abnormal fissures or openings at the tips nearest the boll apex. Such bolls often contained an additional locule. The rotted lint within the locules were usually reddish brown with mixtures of yellow and olive to olive-brown colors. The abnormal boll morphologies were described previously as supernumerary carpel syndrome (SCS) and was reported to be associated with internal lint boll rot in California. In Georgia, the SCS bolls occurred primarily on the lower-third of the plants and contain the majority of infected bolls. Researchers familiar with the locular lint damage in California believed that SCS may be related to unusual environmental parameters, but further study is necessary to determine the exact cause. It was uncertain what organism was responsible for the locular lint rot. Previous work conducted in California suggested that *Erwinia herbicola* was responsible for lint rot of cotton locules associated with SCS and stinkbug injury. Isolations were attempted from NuCotn 35B bolls to determine if a fungal pathogen was responsible for the lint rot injury, but no causal organism was identified. Isolation of bacteria

was then attempted using nutrient agar and several bacteria including *E. herbicola* were found. Further studies are being conducted to confirm the correct identity of the causal bacterial species responsible for the lint rot. A field survey was initiated by late September to determine the extent of the damage in the two Georgia counties and attempt to determine the interactions between SCS, environmental conditions, and insects. Lint rot was observed in the cultivars DPL 90, Hartz 1244, NuCotn 33B, and DPL 5415, but the damage was always less severe than on NuCotn 35B. Bolls with SCS generally were found in the lower-third of the plants for all cultivars and lint rot occurred more commonly in the SCS bolls. Rainfall was abundant in October across eastern Georgia, just prior to the first report of locular lint rot damage. The excessive moisture may have enabled the pathogen to become establish at the tips, especially with bloom tags, moving in through the stylar canal, and then in individual locules infecting the lint. Additional studies are necessary to determine the extent of boll rot damage associated with SCS and insect interaction.