

**BOLL ROT EPIDEMICS IN LOUISIANA COTTON**  
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**Abstract**

When conditions favor boll rot, epidemics rapidly develop, devastating yield and quality. In 2001, boll rot epidemics, spawned by late-season rainfall and warm temperatures, reduced seedcotton yield an estimated 23% statewide. In an effort to assess varietal response to boll rot, incidence was quantified in 56 cotton varieties evaluated in the LSU AgCenter cotton variety test conducted at the Northeast Research Station, Macon Ridge location near Winnsboro, LA. Thirty-six early-maturing and 20 medium-maturing varieties were evaluated. On September 18<sup>th</sup> and 19<sup>th</sup>, boll rot incidence (percent rotted and hard-locked bolls relative to total bolls) was determined from plants in six feet of row randomly selected from the two center rows of each plot (3ft/row). Plots were machine harvested and yield data were correlated to boll rot incidence using the PROC CORR program of SAS Institute, Cary, NC. Boll rot incidence ranged from 37 to 69% in early-maturing varieties, compared to 36 to 52% in medium-maturing varieties. Yields produced by early-maturing varieties varied from 908 lb lint/A to 1308 lb lint/A, and from 1011 lb lint/A to 1534 lb lint/A in medium-maturing varieties. A negative correlation was observed among yield and boll rot incidence in early-maturing ( $r=-0.42$ ,  $\text{Prob}>|r|=0.01$ ) and medium-maturing ( $r=-0.41$ ,  $\text{Prob}>|r|=0.05$ ) varieties. Increased boll rot incidence in early-maturing varieties over medium-maturing varieties was probably a function of rainfall coinciding with boll opening. Consequently, bolls of early-maturing varieties were more predisposed to invasion by boll rot pathogens than medium-maturing varieties. However, variability in boll rot incidence within a maturity group provides evidence that variety selection can impact epidemic progress. The nature of this impact is still uncertain, but differences in plant architecture among varieties could affect microclimate and boll rot development. These results demonstrate boll rot varies across varieties and provide further evidence producers should spread production risk by planting multiple varieties.