Leaf-Footed Bug Injury to Late Season Cotton

Darwin Anderson, Michael Brewer, and Charlene Farias
Texas A&M AgriLife Research & Extension Center, Corpus Christi, TX

OBJECTIVE
To evaluate late season boll damage and yield effects in the presence of leaf-footed bugs across 3 water regimes, 2 cotton varieties, and 2 planting dates.

ABSTRACT
Late season leaf-footed bug activity was detected in 2012 in a field test involving 3 water regimes, 2 varieties of cotton, and 2 late planting dates. Boll damage was significantly higher in bolls near the top of the plant (top crop bolls) of very late (April 30) planted cotton when compared to an April 12 planting. Despite this top crop damage, no differences in lint and seed yield could be attributed to the leaf-footed bug damage. Lint and seed yield differences were only associated with planting date (lint and seed yields were significantly higher in the April 12 planted cotton compared to the April 30 planted cotton), and irrigation treatment (lint and seed yields were significantly higher as water was increased across the three water regimes). Timely planted cotton with a normal boll load and adequate water during the growing season will likely be able to tolerate late season leaf-footed bug activity without negative yield effects when cut-out is set at 5 NAWF. The damage to middle crop bolls did not increase across water regimes, but did significantly increase across water regimes for the top crop bolls indicating the leaf-footed bugs favored the top crop of the 100% ET irrigated cotton. Means averaged across the varieties and planting dates.

INTRODUCTION
The presence of leaf-footed bugs in South Texas cotton is sporadic and late occurring. For example, in 2010 leaf-footed bugs were present late season in only 4 of 25 surveyed fields. Three of these fields were followed in 2011 and 2012 with leaf-footed bugs not present in 2011 but present in 2012. In 2012, we observed movement of leaf-footed bugs into a late planted experimental field when the cotton was at cut-out (5 NAWF). No insecticide was applied and the population increased, including substantial egg laying and nymphs occurring on the crop. Field observations indicated greater occurrence of leaf-footed bug on 1) late planted cotton compared to the very late planted plots, 2) irrigated plots compared to the dryland plots, and 3) top crop bolls compared to the middle crop bolls. We chose to utilize this opportunity to evaluate damage to middle and top crop bolls and subsequent overall yield.

MATERIALS & METHODS
Design:
Split Plot – 5 replications
Main plot: Water (dryland, 75% ET Irrigation, & 100% ET Irrigation)
Split: Combination of Cultivar & Planting Date

Cultivars:
Phytogen 367 WRF
Stoneville 545B B2RF

Planting Dates:
Late on April 12, 2012
Very Late on April 30, 2012

Plot Size:
4 rows (38 in.) x 50 ft. (inner 2 rows used for data)

Harvest:
2 row John Deere Picker
Ginned on a 10 saw Eagle Lab. Gin

Damage Rating:
0-4 scale

Bolls scored for damage using the 0 to 4 damage scale.

Despite top crop damage (see open boll rating graphs), no differences in lint and seed yield could be attributed to the leaf-footed bug damage. Lint and seed yield differences were only associated with planting date (lint and seed yields were significantly higher in the April 12 (late) planted cotton compared to the April 30 (very late) planted cotton, left graph), and irrigation treatment (lint and seed yields were significantly higher as water was increased across the three water regimes, right graph).

SUMMARY
Timely planted cotton with a normal boll load and adequate water during the growing season will likely be able to tolerate late season leaf-footed bug activity without negative yield effects when cut-out is set at 5 NAWF. Means averaged across the varieties and planting dates.

ACKNOWLEDGEMENTS
Our many thanks are extended to Dr. Roy Parker, Extension Entomologist for technical assistance and Dr. Juan Landivar, Director, Texas A&M AgriLife Research and Extension Center, Corpus Christi, Texas for technical and direct support through land, facilities, and personnel.

REFERENCES
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