ARIZONA | COLLEGE OF AGRICULTURE AND LIFE SCIENCES
COOPERATIVE EXTENSION

Under the Radar, Deep in the Canopy
Brown Stink Bugs in Arizona Cotton

Peter C. Ellsworth, Lydia Brown & Ayman Mostafa

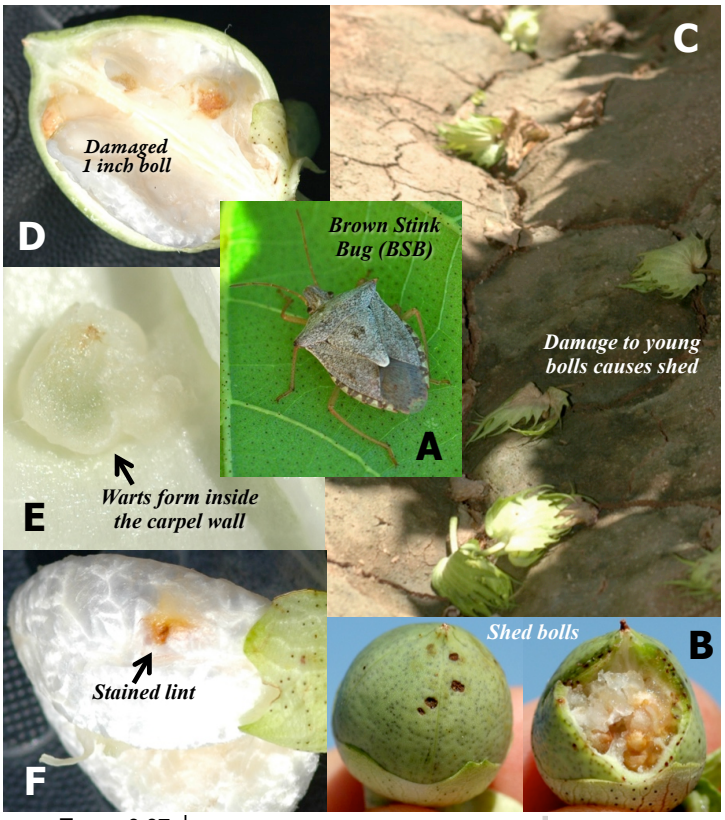
The Brown Stink Bug (*Euschistus servus*) (BSB) (A) is rarely damaging in Arizona cotton, but at high densities, they can reduce yield and quality. BSBs pierce bolls to feed on developing seeds; young bolls (<10 d old) (B) may shed when these are the only sizes available to the bugs (C). BSB can cause carpel and seed injury (D), stain lint, lower yields and quality, and encourage boll rot organisms. Successfully attacked bolls will have callus warts (E) on the interior of the carpel wall or brown stains on lint (F) and seeds. **An externally visible small brown pockmark on the boll surface does not necessarily mean the boll interior is damaged; bolls must be opened to determine if injury has occurred.**

There is no recent Arizona-specific information available for monitoring or decision-making. We must rely on information from the Southeastern U.S. Stink bug action thresholds are based on the percentage of internally damaged bolls (bolls with any internal injury). Collect at least 25 1-inch bolls from each field, avoiding field edges. **The boll sample must consist of properly sized bolls, which give easily when squeezed and are 0.9–1.1 inches in diameter.** Crack and inspect bolls for internal injury. If any warts or stained lint are present, count that boll as injured. Chemical control may be warranted when 20% or more of the boll sample have warts or stained lint **and** stink bugs are present in the field. The Southeast has developed dynamic thresholds for stink bugs, because cotton's susceptibility to stink bugs varies. Very early and very late in the season, stink bugs do not pose as much of a threat and higher percentages of injured bolls can be tolerated, up to 50% with warts or stained lint. Maturing bolls are relatively safe from stink bug feeding injury starting at 25 days of age or once they are ≥1.25 inches in diameter; internal injury to lint is unlikely.

Research in Arizona as far back as the 1950s confirms that **stink bugs are not caught in representative numbers in standard sweep net sampling**, because they drop rapidly from plants and are frequently located on the plant below the range of a normal net stroke. Do **NOT** rely on sweep net sampling alone, except to confirm BSB presence in the field. **Small boll sampling is required to schedule and to assess chemical controls.**

There have been no BSB specific chemical control studies since the early 1960s, when BSB was often associated with alfalfa production. So we must rely on the Southeast; however, even there, most chemicals are screened against a complex of unrelated stink bugs (Green Stink Bug & Southern Green Stink Bug). Lab bioassay results for BSB show that Bidrin is highly effective (Fig. 1). Though a standard there, this old organophosphate is not registered for use in Arizona. Bidrin is significantly more effective on *Euschistus spp*. than bifenthrin (Capture), but not more so than acephate (Orthene). Acephate at the full label rate of 1 lb ai / A may provide control of BSB. Belay is an option for helping suppress stink bug populations in general but should not be relied on as a rescue tool. Few other products are effective. 8/2012

Any products, services, or organizations that are mentioned, shown, or indirectly implied in this publication do not imply endorsement by the University of Arizona.



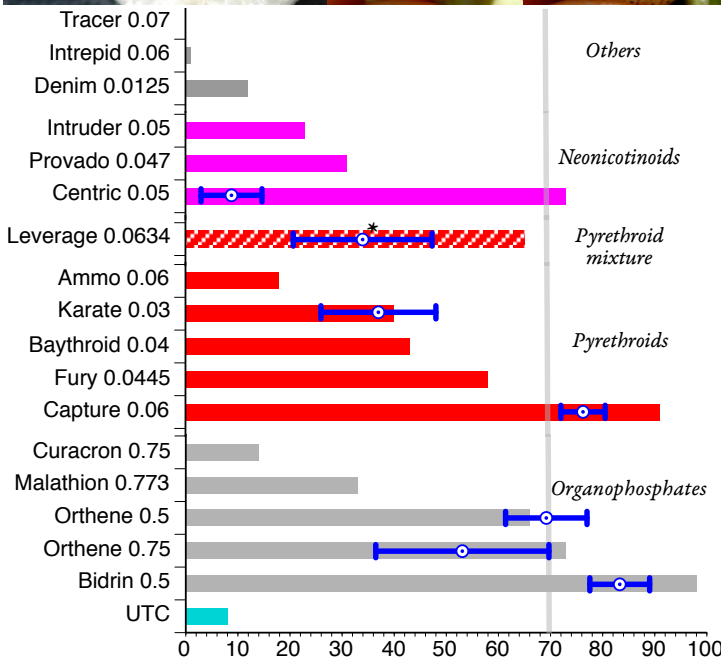
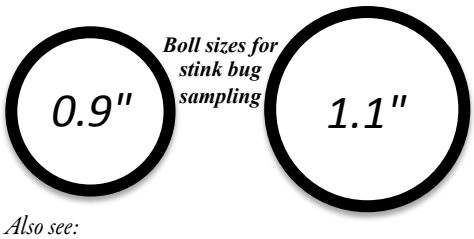


Figure 1. *Topical BSB lab insecticide efficacy (% at 24 hr) in Arkansas (bars) & Field efficacy (% 2–4 DAT) in Georgia against Euschistus spp. (dots ± SEM); adapted from Greene et al. 2005, Proc. Beltw. Cotton Proceedings & P. Roberts, unpubl. data. *Endigo at 4–5.5 oz.*



ARIZONA PEST MANAGEMENT CENTER

Also see:

Bacheler, J. et al. 2010. http://ipm.ncsu.edu/cotton/insectcorner/pdf/AG_730_WPrint-NC.pdf
Herbert, A. et al. 2010. http://pubs.ext.vt.edu/444/444-390/444-390_pdf.pdf