Kudzu Bug Control in Soybeans: Frequently Asked Questions (FAQ)

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First recognized as a nuisance pest when discovered in Georgia during the fall of 2009, the kudzu bug has since become a serious pest of soybeans. Initial reports indicated that this invasive insect is capable of reducing soybean yields by nearly 60%. Yield loss due to kudzu bug feeding has been observed to reduce pod size, seeds per pod, and seed weight. Control of the kudzu bug in agricultural settings is possible and begins with proper insect identification, attention to economic thresholds, and timing of chemical treatments. As this insect begins to migrate to soybean in the coming months, below are a few frequently asked questions concerning kudzu bug control in soybeans.

Where do kudzu bugs tend to aggregate initially in soybean fields? When kudzu bugs first encounter a soybean field, they will aggregate abundantly on the outside rows, or edges of the field. As the season progresses they will move toward the center of the field.

When will I find kudzu bugs in soybean fields? Adults have been observed entering soybean fields as early as May in South Carolina (V1-V3 growth stage). Once adult insects are observed in fields, they will persist there throughout the growing season. Nymphs are normally first encountered in June and last through September.

What is the recommended scouting technique? Sweep netting (15” diameter net) or visual inspections of the crop are the proper scouting techniques. Make sure to sample the entire field and not just crop borders or edges.

Do kudzu bugs reduce plant height when they infest seedling soybeans in large numbers? Yes, kudzu bugs feed on plant sap and thus reduce the amount of nutrients flowing through the plant. This will reduce the plants vigor.
Additionally, high kudzu bug populations have been indicated to be able to reduce soy yield by 60%. However no damage to seeds has been seen.
How will kudzu bug feeding affect soybean plants? Kudzu bugs feed by inserting their mouthparts into the plant stems, and they will suck up plant sap. This removes vital nutrients from the plants, reduces plant vigor, can cause leaf drop, reduction in crop yields and seed size, necrotic stem lesions, and can induce growth of black sooty mold leading to various secondary plant problems.

Are early season soybeans more susceptible to kudzu bug infestation? Field observations show that kudzu bug numbers tend to be greater in early-plant soybeans than in later planted soybeans.

Do all pyrethroids provide at least 80% control shortly after application? Not all, but many pyrethroids provide high mortality after application, usually 2-5 days after treatment. Pyrethroids that initially give 80% control or better of kudzu bugs include products containing bifenthrin (Brigade, Discipline, Fanfare), gamma-cyhalothrin (Declare), lambda-cyhalothrin (Karate Zeon, Silencer), and zeta-cypermethrin (Mustang Max). Additionally, carbaryl (Sevin) and acephate (Orthene 97) also initially give better than 80% control of kudzu bugs (Fig.1).

How and when should I treat my field? The Alabama Pest Management Handbook (2014) recommends treating fields before first bloom when kudzu bugs reach a density of 5 adults per plant across the entire field. The suggested treatment threshold once plants begin to bloom is 10 adults per sweep net sweeping across two rows, or when one nymph per sweep is collected. If immature kudzu bugs are easily and repeatedly found on petioles and main stems during visual inspections of the canopy, treatment is likely warranted. Border row applications of recommended insecticides have, in some cases, slowed the movement of the kudzu bugs into the center of fields. However, re-application of insecticides may be needed if applied before or during kudzu bug migration into soybean fields. Kudzu bugs continued to migrate into soybean fields at Prattville, AL through the third week of July in 2013. Make sure insecticide applications thoroughly penetrate the canopy as these insects feed on the stems and petioles of the plant.

Are adults or nymphs more susceptible to chemical treatment? Both adults and nymphs are susceptible to insecticides.

Will one application of an effective insecticide provide season long control when applied at least one month after soybeans emerge? No, these insects will migrate into soybean fields from other feeding sites, and their migration to fields may last as long as two-to-three months. You should only apply an insecticide in response to a kudzu bug infestation when the pest density reaches the economic threshold. When treating multiple times make sure to change the insecticide and the active ingredient to prevent insecticide resistance.
When do populations peak in soybean fields? Adult and nymphal peaks are usually seen in September (corresponding to ~R5), while eggs tend to peak in August (~R2).

Figure 1. Insecticide Efficacy