Plant Bug Infestations Higher than Normal in 2023 (Roberts)

County Agents and scouts are reporting higher than normal tarnished plant bug infestations. Weather conditions and plant bug populations appear to be similar to those we observed in 2021, a year where we estimated over 30 percent of the acreage was treated for plant bugs. In more normal years we treat about 10-12 percent of cotton for plant bugs. Irregardless there are fields which need to be treated for plant bugs every year and failure to treat infestations in a timely manner may result in yield loss. In 2021 we observed over ½ bale yield loss from plant bugs in small plot trials in Tifton. The key is to know which fields require treatment and the only way you will know is to scout and use thresholds.

Tarnished Plant Bug adult (left) and immature in bloom (right). Images by Russ Ottens and Ron Smith, ipmimages.org.

Primary damage caused by plant bugs is feeding on small squares in plant terminals. However, plant bugs may also feed on larger squares and small bolls. Plant bugs insert their needle like piercing sucking mouthparts into fruiting forms and feed on the plant juices. After a pinhead square has been damaged, it turns yellow to brown or black and easily falls from the plant when disturbed. Healthy undamaged squares will be firmly attached to the plant. When the square is shed by the plant, an elliptical scar where the square was attached remains. No visible damage is apparent on the outer surface of squares damaged by plant bugs. Large squares which are injured by plant bugs will often remain on the plant, however when the square blooms the flower will have warty growths on the petals and localized discoloration on the anthers. This type of flower damage is referred to as a “dirty bloom”. Plant bugs may also feed on small bolls. Excessive feeding may cause boll shed, but most often localized lint and seed damage is the result. Callous warty growths on the inner surface of the boll wall will often form near the feeding site (appears very similar to stink bug damage). We will detect damage to small bolls when checking for internal feeding injury from stink bugs.

Plant bugs and damage should be monitored from the time plants begin squaring through mid-bloom. Square retention counts are often used to detect problems with plant bugs. Treatment is recommended when plants are retaining less than 80 percent of small squares and numerous plant bugs are observed. Sweep nets (15 inches in diameter) are also an effective tool to monitor adult plant bugs in squaring cotton. During the first 2 weeks of squaring the threshold is 8 plant bugs per 100 sweeps. Beginning the 3rd week of squaring the threshold is raised to 15 plant bugs per 100 sweeps. Ideally, we should be monitoring both retention and plant bug adults with sweep nets. Our goal should be to retain at least 80 percent of 1st position squares as we enter bloom. Plants with 80 percent retention at first bloom still have maximum yield potential.

It is important that we only treat plant bugs in fields where thresholds are exceeded. Some insecticides for plant bugs will decimate beneficial insects in the field (many of predator insects such as bigeyed bugs begin colonizing fields as they begin to square). When treating plant bugs also consider aphid populations. If aphids are present it makes sense to use a plant bug insecticide which also has activity on aphids. Plant bug insecticides which also have activity on aphids include Transform, Centric, and imidacloprid. Transform is the most consistent performer on both plant bugs and aphids and is relatively "soft" on beneficial insects. Centric also provides good control of both plant bugs and aphids but is less consistent, especially on aphids. Imidacloprid provides only fair control on plant bugs and aphids. Bidrin and acephate provide good control of plant bugs but are "hard" on beneficial insects and we generally try to delay use of these products until later in the year. Additionally, Bidrin is not labeled on squaring cotton. I have had several questions related to the use of Diamond which is an insect growth regulator that has good activity on plant bug immatures (does not control adults). In areas of the Cotton Belt where immature plant bugs are a consistent and predictable pest, Diamond is often used. Ideally Diamond would be applied as immatures are hatching (immature plant bugs are not consistent nor predictable in Georgia). If you observe immature plant bugs consideration should be given to adding Diamond to your plant bug management program. When we have observed immature plant bugs it often occurs near first bloom. Black drop cloths are the best tool to detect immature plant bugs. During bloom our drop cloth threshold is 3 plant bugs per 6 row feet.

During recent years we have observed that early planted cotton is at greater risk of plant bugs than later planted cotton. It is especially important you scout April and early May planted cotton. Perhaps plant bugs congregate on early squaring cotton and then diffuse across more acres as more fields begin squaring. Also, be aware of surrounding habitats bordering the field. For example, we have observed higher plant bug infestations near sources of plant bugs such as watermelon plantings. Bottom line, scout and treat if thresholds are exceeded.