Mid- to Late-Season Insect Control in Cotton

- Several insect pests are of importance to watch for near or after first bloom.
- Late-season insects can be difficult to control due to dense crop canopies, and poor insect control can reduce yield potential, even late in the season.
- There are different control measures available and depending on the insect complex, a tank mix of insecticides may be necessary.

Spider Mites
Infestations may increase under hot and dry conditions and first appear in field borders. Spider mites infest the underside of leaves to feed on plant sap, causing leaf surfaces to discolor (Figure 1). As feeding continues, the upper leaf surface may redden in color. Severe infestations can defoliate cotton plants and cause small bolls to shed. Spider mites may become an issue if beneficial insects that control spider mites are killed by an insecticide. An insecticide treatment can help control the spread of spider mites and should be used when spider mites begin to cause noticeable leaf damage, or when 40-50% of plants are affected.

Figure 1. Spider mite discoloration on leaf.

Plant Bugs
Plant bugs, including tarnished plant bugs (Figure 2) and cotton leafhoppers, cause puncture wounds on both cotton squares and small developing cotton bolls. Multiple generations may overlap in one growing season. Watch for nymphs after first bloom as their presence indicates reproduction is occurring. Dirty blooms and darkened anthers are signs of plant bug feeding. Contact your state Extension office for local economic threshold levels and recommendations.

Figure 2. Tarnished plant bug adult.

Stink Bugs
There are several species of stink bugs that can negatively impact cotton yield potential. Stink bugs pierce small bolls and suck the sap from seeds. Internal boll damage includes stained lint or callous growths inside the boll. Feeding can also allow entry of boll rots. Damaged bolls may either open early or become hardlocked and not open. Different insecticides are recommended for control of different stink bug species. If stink bug populations reach local economic thresholds, organophosphate insecticides can help provide control of southern green and brown stink bugs (Figure 3). Pyrethroid insecticides may help control southern green stink bugs.

Figure 3. Brown stink bug adult.

Bollworms and Tobacco Budworms
Bollworms and tobacco budworms are often found together in a field. Both worms feed on the same plant structures and are similar in morphology. Tobacco budworms are known to be resistant to multiple insecticides (Figure 4). In corn growing regions, bollworms will typically deposit eggs in cotton fields after moths emerge in nearby corn fields. Eggs are deposited on upper leaves and usually hatch after 3 days. As the season progresses, eggs and larvae may be found anywhere on the plant, especially on blooms or young bolls. Frequent scouting is recommended. Treatment may be necessary in high-pressure situations. Please refer to local extension recommendations.

Figure 4. Tobacco budworm on cotton bloom.
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Aphids and Whiteflies
These insects suck sap from plants causing stunting and leaf curling (Figure 5). Honeydew will be deposited on leaves and may be found in cotton fiber, reducing quality. Most economically damaging infestations develop during bloom. Treatment should be considered when areas of high aphid populations cause heavy honeydew accumulation without signs of diseased aphids. If dead aphids are present, an insecticide should not be applied as natural control agents (fungi, bacteria, or beneficial insects) are killing or feeding on the aphids.

Figure 5. Aphid infestation present on the underside of a cotton leaf.

Fall Armyworm
An inverted “Y” mark on the larvae head can be used to identify this pest (Figure 6). Fall armyworm moths lay eggs on the underside of leaves and larvae may be found feeding on younger growth, bloom tissue, or pollen. The larvae will eventually feed on cotton bolls. According to Clemson University, the economic threshold for fall armyworms is met when 10 larvae are found per 100 plants. It is best to time insecticide application to coincide with egg hatch or larvae emergence.

Figure 6. Three life stages of fall armyworm from first instar (bottom) to pupa (top left).

Summary
When late-season insect economic threshold levels are met, first consider what cotton technology is in the plants. Even when fields are planted with technology that manages certain insect pests, under high populations an insecticide application may be needed for additional control. Be sure insect pests are at threshold prior to treatment. Insect control should be terminated at 350-400 DD60s after “cutout” or 5 nodes above white flower (NAWF). Cotton fields do not need treatment after this stage as the plants are less attractive to insect pests and the boll can tolerate more damage without reducing cotton yield potential.

Sources

For additional agronomic information, please contact your local seed representative. Individual results may vary, and performance may vary from location to location and from year to year. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. All other trademarks are the property of their respective owners. ©2016 Monsanto Company. 140718104830 070215MEC