

In 7 Minutes or Less!

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In 7 minutes or less and just 7 steps, you can determine the size and structure of *Bemisia tabaci* populations in a cotton field. With this information, more precise and appropriate control decisions can be made. The sampling system requires the examination of 30 leaves and 30 leaf disks for the presence of adults and live, large nymphs.

Whitefly populations are best estimated from the fifth main stem leaf below the terminal (A). Main stem leaves are attached directly to the main stem by their petioles. The first main stem leaf is defined as the first unfolded leaf in the terminal and is at least 1 inch in diameter or larger. Adults are counted from the 5th leaf position (A, B); large nymphs are counted on a disk-sized area in a specific location on the underside of this leaf (C, D).

Steps to Efficient Sampling of Whiteflies

1. Familiarize yourself with the variety, crop growth stage & general location of the fifth main stem leaf in your field (A).
2. Enter a field at least 25 paces & select plants at random and 5–10 steps apart, being careful to keep your shadow from passing over plants you wish to sample.
3. Turn the fifth leaf over slowly by its tip or petiole & count the leaf as **infested with adults if it has 3 or more adults** on it (B). Include in your counts any whiteflies that fly up from the leaf as you turn it over.
4. Detach the leaf by the petiole from the main stem. If it fails to yield easily and snap off, then you have selected a leaf that is too high on the plant. Re-check your leaf position to make sure you are sampling from the fifth leaf. It is o.k. to count adults from main stem leaves #4–6. However, your nymph counts must come from the fifth leaf (C).
5. Using a specially designed 8x loupe (D), locate your disk-sized area between the central main and left lateral veins of the leaf. Examine this area for the presence of live, large nymphs (instars 3 or 4, E–F). **Count the leaf disk as infested if it has at least one live large nymph.**
6. Adult and nymph sampling should be conducted in at least 2 different areas of a field, 15 leaves and 15 leaf disks from each area (for a total of 30 per field or management unit).
7. Decisions are then based on the percentage of leaves that are infested with adults as well as the percentage of leaf disks infested with live, large nymphs.

Also see:

<http://ag.arizona.edu/crops/cotton/files/SelectiveChemicalControlsvE.pdf>

<http://cals.arizona.edu/pubs/insects/ar-1404.pdf>

<http://ag.arizona.edu/crops/cotton/insects/wf/wfly8.pdf>

