

Fruiting in Cotton as Affected by Square Set

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Determining your cottons health and current stage is a very important aspect of growing and maintaining a good cotton crop. Square set in early season is a must for many farmers and researchers. Square set retention counts are easy and extremely helpful when trying to monitor tarnished plant bug activity in the field. Managing your early square set can really help you later in the season. The way you calculate square set is by using a clicker and counting the top ten square sites of the plant. Start by counting the top ten square sites on the plant. You count from the terminal down, and you do not count over ten sites per plant before moving to the next plant. The goal is to count a total of 100 squaring sites and keep up with the number of damaged, missing, blasted, or flared squares. For example, if you counted a total of 100 squaring sites and you found eleven missing squares, then you would have a square set of 78% (Catchot,A.). By using a clicker and finding your square set, you can determine where your cotton is and what to expect in the future days to come. By knowing what kind of damage is in your fields, you can better determine what you should treat your cotton with and in a timely manner.



Missing Square on cotton.
Photo © Bugwood

There are many reasons for low square set. These causes range tremendously, from weather to insect pressure. This is why early square set count is a vital tool to track your cottons progress and helps to keep an eye on insect activity. Along with sweeping and other methods, square set is a productive way to maintain your fruiting nodes on your cotton. There are many ways to lose squares, but the most common way is tarnished plant bug feeding. The tarnished plant bug, (*lygus lineolaris*) is a common insect that targets cotton and other flowering crops and weeds. Without treating and targeting the plant bug, it can destroy and flare squares. This is the major way to hurt your square set and slow down your cotton (Catchot, A.). Other significant causes of square set lose is: weather, drought, and planting date. According to Maurney and Henneberry, “All squares showing visual evidence of the onset of abscission but still on the branches and those on the soil below were collected and dissected under a stereoscopic microscope... When excessive square abscission occurs it may be difficult to assign reasons for the abscission and thus develop strategies to correct it.”



Using a handheld counter in the field. Photo © A. Catchot

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The benefit of early square set in cotton is that it produces a timely mature crop. “Removing fruiting form early in the season can result in increased productivity later with a high percentage of fruiting forms developing into mature bolls. Early season defruiting caused cotton plants to set bolls during the normal cut out period in the Imperial Valley of

California.” (Patterson, Buxton, and Briggs) “It was then suspected that the delay in fruit-set caused by square removal produced a larger plant framework consisting of more reproductive branches which were simultaneously at productive stages of development.” (Kennedy, Smith Jr., and Jones) So the results are, by maintaining a healthy square set early in the cottons fruiting cycle, the cotton will have a better boll count, and will set the cotton up for a better chance at a higher yield than otherwise.

You want to maintain a square set of 80% early in the cottons life. This will ensure that your cotton is going to develop the right way and load up the way one would want it to. Plus 80% gives the farmer or researcher room to make economical decisions for insects, watering, fertilizing, among other things. To sum square set up, it is a maintaining tool that helps to keep your cotton loaded and successful. This is a great tactic to keep your cotton on track for early square production.

References:

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