

The Replanting Decision – When to Trust a Stand, When to Replant

Early season soil crusting, hailstorms, sandblasting and seedling disease are some of the major factors that force cotton producers to make difficult replanting decisions. The yield potential of the original planting versus the costs associated with replanting must be weighed.

Factors to be considered include date, geography, plant population and skips in stand, and condition of remaining plants.



Neither adverse weather conditions nor disease uniformly impact plant stands. Closely examine the field to determine overall plant population.



Determining the extent of seedling disease, such as rhizoctonia, and future impact of the disease on healthy seedlings is essential to making a replant decision.

Source: Clemson University – USDA Cooperative Extension Slide Series, Bugwood.org

Heat units impact ability to compensate

Cotton has a unique ability to compensate from significant reductions in plant population by producing more nodes on the main stem, bolls on outer positions of fruiting branches, and bolls on vegetative branches. Generally speaking, early planted cotton has more potential for yield compensation than later-planted cotton because it has more available heat units.

In the northern latitudes of the Cotton Belt, long-term research indicates planting after May 15 likely reduces yield by 8 to 15 pounds per acre per day. In the southern portion of the Cotton Belt, the yield potential on later-planted cotton is sustained because more heat units are accrued. Check with your local cotton development specialist (CDS) or university Extension specialist for exact dates for your geography.

In some years, there are little or no yield differences between early and later-planted cotton, and, in other years, the differences are vast, depending on in-season heat unit accumulation, rainfall and late-season harvest conditions.

Can your cotton bridge the gaps?

Even though a fieldwide measurement shows adequate plant population, the stand sometimes contains wide (5- and 6-foot) gaps that are not accounted for in plants-per-foot measurements. In these wide gaps, the potential for compensation will be severely limited.

The number and size of gaps must be considered in addition to measuring overall plant population:

- Take several representative 100-foot samples around the field and get an estimate of the number of gaps per 10 feet.
- If the field has less than one 3-foot gap per 10 row feet (36- to 38-inch spacing), the stand can be kept. If more, then replanting needs to be considered.
- If stand reduction and gaps are isolated to certain areas of the field, producers can replant only into these spots. However, if it has been awhile since the original planting, replanting into the original stand can significantly offset the maturity and management of the crop.

Closely examine plants with hail damage

Plants injured by hail that are not cut off below the cotyledonary node are likely to survive. However, if the apical meristem is destroyed, the plants will grow back without apical dominance, which means they will grow in all directions (called “crazy cotton”). These plants can produce satisfactory yield if there are enough heat units, but maturity will be delayed significantly.

How widespread is the disease?

When assessing plants in stands affected by disease, healthy seedlings must be examined for signs of disease to estimate the fate of the remaining plants. If replanting is not performed or is delayed and the original plant population continues to decline, yield can be severely impacted. An estimate of the number of diseased plants needs to be determined, and the decision to replant needs to be made in a timely manner.

Management considerations for replanted or sparsely populated fields

Here are a few management considerations following a replant decision.

1. Unless cotton is replanted into an existing stand that has very recently emerged, the original seedlings should be destroyed to avoid season-long management challenges.
2. Be timely when scouting fields for stink bugs and plant bugs.
3. In later-planted or sparsely populated cotton, employ management practices to enhance earliness. For example:
 - Do not overfertilize.
 - Spray for worms and plant bugs in a timely manner.
 - Utilize plant growth regulators as recommended.

Learn more

For more information on replanting, contact your state Extension cotton specialist. As always, your PhytoGen cotton development specialist is available to discuss options. Find their contact information at PhytoGen.com.

How many plants is enough?

The remaining plant population is the first piece of information needed to determine whether a stand is viable.

Count the plants on 50 to 100 feet of row in several areas of the field. Use these timing and gap considerations when determining whether to replant in the mid-Atlantic:

- Prior to May 20, if the stand is less than 1.3 (South Carolina) to 1.6 (North Carolina) to 2 (Virginia) plants per row foot and/or contains more than one 3-foot gap per 10 row feet (36- to 38-inch row spacing), replanting may be the best option.
- After May 20, consider the previously mentioned risks of reduced yield where planting is delayed.

