

Double-cropping Cotton & Wheat

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Wheat acreage in Louisiana has increased significantly because of higher wheat prices. With the increase in wheat acreage considerable interest has risen in double-cropping cotton after wheat is harvested. The successes of boll weevil eradication and transgenic Bt cotton for insect pest management have allowed producers to take advantage of Louisiana's long growing season and use of cotton as a double-cropping option. This fact sheet offers specifics for a wheat and cotton double-cropping production system.

Getting a Stand

The first and most important consideration is to achieve an even emergence of cotton seedlings. The goal of planting should be good seed-soil contact with minimal seedbed disruption to preserve soil moisture. This combination can be challenging because of the wheat straw residue. Furthermore, wheat harvest occurs during the end of the recommended cotton planting window, and it is essential to plant as soon as possible.

Several options are available for planting cotton in this environment, including no-till and burning the wheat straw. Although burning removes the residue, it should be remembered that the benefits of this residue, such as increased organic matter, greater rainfall infiltration, moisture conservation and lower soil erosion potential will be lost. Thus, growers are encouraged to plant cotton directly into the stubble without burning.

When planting cotton no-till following wheat harvest, care should be taken to ensure that the straw chopper on the combine effectively distributes the straw as evenly as possible. Residue managers or "trash wipers" on planters can be highly beneficial and improve the consistency of the seeding operation. Experience has shown, however, that trash wipers should be operated as lightly as possible to remove excess straw but not disturb the seedbed. No-till coulters, which are usually fluted, disturb the seedbed more than is needed and interfere with seed placement. Most producers have opted to remove coulters when planting cotton into wheat stubble. Excessive seedbed disruption dries out the seedbed and can make a good, consistent soil-seed contact difficult to obtain. Solid or cast iron press wheels also will help to increase seed-to-soil contact, except in wet soil conditions. Effective planting in this environment requires a minimum of disturbance and slower operating speeds for good seed placement.

Adequate moisture is essential for germination and seedling growth. Be prepared to water early if conditions are dry to get the crop started. Producers do not have the time to wait for a rain.



Managing for Earliness

Double-cropping cotton following wheat is essentially late-planted cotton. Managing for crop earliness in late-planted cotton requires an approach to cotton management that is somewhat different from cotton planted on time. The following key points for managing for earliness should be considered and implemented.

Variety Selection – Growers are encouraged to plant only early or early-mid maturing varieties in a double-crop system. Full-season varieties are generally too late to

mature and become less attractive options when planted after May 15 in Louisiana because of exposure to late-season storms and insect pressure. This strategy eliminates varieties such as Deltapine DP 555 BG/RR and Stoneville ST 5599BR from consideration

Early or early-mid maturing Roundup Ready Flex varieties stacked with Bollgard II or Widestrike insect management traits are highly recommended. Insect pest pressure increases during the season, and the added protection of the stacked Bt traits is necessary to manage this risk. Because of favorable temperatures in June for crop and weed development, the ability to apply glyphosate over-the-top for weed control in a timely manner will be of great value. Additionally, late-season weed pressure, particularly from grasses, has been a growing problem in recent years, and the ability to manage these weeds throughout the season with glyphosate will likely be a great benefit. Two years of testing the early-mid maturing varieties Phytogen PHY 485 WRF, Stoneville ST 4554B2RF and Deltapine DP 117 B2RF in conventional systems has shown these cultivars to have good yield potential in Louisiana. These varieties serve only as examples, since and other B2RF or WRF varieties may work well. The key requirement is that full-season varieties be avoided when planting cotton following wheat.

Seeding Rates – The LSU AgCenter suggests that seeding rates be increased 20 percent over cotton planted normally, to ensure earliness as well as help obtain an adequate stand in wheat stubble. As plant population decreases, maturity is delayed because of the need to produce more third position and vegetative bolls. Therefore, seeding rates for double-crop cotton should be higher than for cotton planted on time.

Insect Pest Management – Thrips injury will delay seedling development. A recommended soil or seed treatment should be used at planting. If adequate temperatures and favorable moisture are available, supplemental oversprays for thrips are not likely to be needed.

Use a pyrethroid within three days of planting to reduce the risk of stand loss from cutworms. Cutworms can reduce cotton stand and are more prevalent in reduced tillage situations.

Insect densities increase later in the season, making late-planted cotton more susceptible to yield loss from insects. Double-cropping cotton will require close scouting to reduce the probability of significant insect-induced losses. Insect control costs, however, will likely be higher in double-cropped cotton. Fruit load is a reliable determinant of earliness, so aggressively protecting fruit on late-planted cotton can translate into crop maturity.

Most caterpillar pests will be managed with stacked Bt technology. Fields still should be scouted, however, and oversprays can be necessary in the presence of persistent, heavy infestations.

PGR Management – Target the early bloom window of application for initial mepiquat treatments to manage plant size and promote earliness. Match-head square applications of mepiquat have become very popular in recent years but may not be the best fit in double-cropped cotton. It is important to remember that the quicker a cotton plant adds nodes and reaches the early bloom stage, the more likely it will be to mature faster. Therefore, pre-bloom applications may not be the best approach in double-cropped cotton because of their tendency to restrict node development and canopy closure. Higher rates may be needed, at bloom, but allow environmental conditions and cotton size to dictate the exact rate.

Other Considerations

Weed Control – Cotton planted in wheat straw is often slower to reach full canopy; thus, residual herbicides and increased weed scouting are of higher value in double-cropped cotton. The overall activity of soil residue herbicides, such as metolachlor, may be reduced because of the presence of wheat straw. It is suggested not to reduce herbicide rates and closely monitor weed populations for the need for additional applications.

Irrigation – Late-season irrigation can delay crop maturity. Recognize when a realistic number of bolls are set and manage irrigation accordingly to provide for a timely harvest.

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