TILLAGE PRACTICES

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Row Subsoiling, Bedding, Land Preparation

In-row subsoiling and bedding (ripping and bedding) are common practices in Virginia. Bedding improves cotton production on wetter soils by allowing more air to the cotton root during wet spells. Under-row ripping allows cotton roots to penetrate compacted soil layers and results in improved early-season root growth. Cotton roots can penetrate the soil to a depth of 6 to 9 inches before the cotyledon leaves emerge from the soil. Ripping the compacted soil zones will help the plant tolerate adverse growing conditions during the growing season.

Strip Tillage

Strip-till cotton production is becoming more common in this region. It allows for fewer trips over the field, resulting in lower fuel costs and less labor. On heavier soils, this can result in less compacted soils over time. It also improves production on sandy soils, which often suffer during windy springs from sand blasting. The surface residue reduces sand blasting, resulting in healthier cotton seedlings following these windstorms. Additionally, surface residues increase organic matter levels. Due to the lack of soil disturbance and increased organic matter, the water-holding capacity of the soil is increased. There are two predominant challenges with strip tilling. In heavier soils, it is difficult to obtain loose soil that is free from clods to make a good seedbed. A good seedbed is important to provide good soil-seed contact. Secondly, strip tillage does not provide a sufficient planting bed in heavy, wet soils in years with frequent rains around planting time. In 2003, frequent rains and poor seedbeds created a problem even on sandy land due to long-term saturated conditions. As a result, stands were reduced and many fields had a slow start. Nevertheless, farmers continue to be pleased with this tillage method, and are coming up with innovative ways to meet the challenges while enjoying the benefits it provides. Hill-drop planting is one idea that is being implemented. Hill drop allows deeper planting to find moisture in a marginal seedbed while allowing more pushing power for stand establishment.