Timing - At planting apply 20 to 25 lb of nitrogen. Increase this rate to 30 or 40 lb on very sandy soils or when low residual levels are expected. Apply 50 to 70 lb of nitrogen either side-dressed or top-dressed in mid to late June. This application should correlate with the time when cotton is at full square but should be about two weeks before blooming begins. Side-dressed applications of nitrogen can be split on sandy land to reduce leaching risk.

Boron

Boron is an essential micronutrient critical for flowering, pollination and boll development. Boron is required in small amounts and can be applied either to the soil or crop foliage. A suggested rate of soil-applied boron at planting is 1 lb per acre of actual boron. Two applications applied to foliage at _ lb each time is the suggested rate. Be sure at least part of the boron is applied by first bloom.

Sulfur

Sulfur is needed on most cotton fields that are not grown in a rotation with peanuts. When grown in rotation with peanuts, residual sulfur from landplaster applications is usually sufficient for cotton. Actual sulfur may be applied at 20 lb per acre either preplant or with sidedressed nitrogen. Sulfur is very mobile in the soil, and is readily leached from sandy soils. On very sandy soils, it is more desirable to make a split application of sulfur with the split nitrogen applications. On loamy soils sulfur may be applied in a single application, usually with the sidedress nitrogen application.

Starter Fertilizer

Starter fertilizer usually consists of nitrogen and phosphorus. The primary benefits are faster, initial growth and usually earlier maturity. Typically there is more benefit to starter fertilizer on medium to heavy soils, soils testing low in Phosphorus, or in cool soils. The ratio of nitrogen and phosphorus vary to some extent since there are many different formulations of starter fertilizers. Use about 12 to 20 lb of nitrogen and follow soil samples for phosphorus. A yield response is not always obtained but is more common in wet, cooler seasons. Little response to starter fertilizer is noted in hot dry years.

Tillage Practices

Row Subsoil, Bedding, Land Preparation

In-row subsoiling and bedding (ripping and bedding) is a common practice 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 result 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 also 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 this 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 seed bed. 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 seed bed while allowing more pushing power for stand establishment.