

Intrepid Trio® for Southeast US Row Crops

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Creating a balanced fertility plan involves predicting plant needs and accounting for soil nutrient retention and interactions. The southeastern US is largely characterized by Ultisol soils that are low [cation exchange capacity \(CEC\)](#), acidic, sandy, and well weathered. With lime and fertilizer management, these soils are among the most productive in the US for crops like [corn](#), [cotton](#), [tobacco](#), and several fruits and [vegetables](#).

Potassium Balance is Key for Optimal Soil Nutrition

Potassium is responsible for water regulation in the plant and contributes to strong stalks that support high yielding grain crops. Potassium balance is key in the low CEC soils of southeastern US. An overabundance of potassium may occupy the majority of the limited cation exchange sites in this soil, making other macronutrients like magnesium and calcium more susceptible to leaching. A more balanced fertilizer has the benefit of retaining the availability of nutrients in the soil. Therefore, blending [Intrepid Potash](#) (MOP) with [Intrepid Trio®](#) (also called Potassium Magnesium Sulfate, Sulfate of Potash Magnesia, or Langbeinite) provides the added benefit of sulfur and magnesium for more complete crop nutrition and soil nutrient availability.

Soil Magnesium is Limited

Magnesium loss due to leaching and erosion is especially prominent in humid regions like Southeastern US. Up to 50 pounds per acre are lost in this manner each year, in addition to the magnesium depleted annually by crop removal. **Magnesium loss from these sandy, acidic soils can be accelerated by the application of high rates of potassium fertilizer without magnesium.**

Magnesium is most known for being central to the chlorophyll molecule, and is a key component for crop quality, protein synthesis, and nutritional value. In-season deficiencies are best corrected by applying a water soluble, plant available source of magnesium like [Intrepid Trio®](#).



*Cotton magnesium deficiency from
[Clemson University](#)*

Replenish the Field's Sulfur

Sulfur in surface soil layers tends to be low in warm humid regions like Southeastern US, therefore symptoms of sulfur deficiency develop early in the growing season. Sulfur, like nitrogen, is an important building block for proteins, and sulfur nutrition will increase nitrogen uptake and recovery efficiency of plants. In this region, supplying a dose of sulfur

during plant establishment will get the crop off to a stronger start, until roots reach deeper soil layers.

Many worry that applying sulfur to an already acidic soil can further drive down the pH and drive up the acidity of these already acidic soils. **Fortunately, the form of sulfur supplied in [Intrepid Trio®](#) is fully oxidized sulfate (SO_4^{2-}) and has the double benefit of 1.) not increasing soil acidity and 2.) being the plant available form immediately available for plant uptake.**

Intrepid Trio®

Incorporating [Intrepid Trio®](#) as part of a custom blend for row crops provides complete crop nutrition for potassium, magnesium and sulfur. Intrepid Trio® is 100% natural langbeinite, a unique mineral with three essential nutrients in every granule providing long-lasting, readily available source of low-chloride potassium (22% K_2O), 11% magnesium and 22% sulfur at a ratio ideal for row crops grown in acidic, sandy, low CEC soils. Intrepid Trio® is also available in [OMRI listed grades](#) approved for organic farming.
