

CROP EXCELLENCE

Cotton Season Long Fertility – Pay Attention to Detail!

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Cotton always struck me as an oddity as a young agronomist and even now still serves to confuse at times. A desert perennial dating back thousands of years in cultivated agriculture from Asia, Africa and the Americas, not least the Native Peoples of the desert southwest close to where I write this piece. As a perennial, think of tree – obviously modified for present day production practices, harvest and utilization – remember the history...

Like most desert species, cotton needs to seize water at every opportunity – it is a deep tap-rooted plant so this provides good fertility clues – nurture the root development in early stages, build the leaf / light factory and maintain fruit production and quality later in the season. I know it is more complicated given pest control, weed pressure and modern genetics but strip away all of this and get to the physiological basis of high yield cotton. I have had the privilege to work with cotton researchers and producers across the world, not least the US cotton belt – climates vary but physiology and nutrient considerations are remarkably consistent..

A good friend of mine in the Texas panhandle, responsible for taking average production from dryland yields of less than one bale per acre to over 4 bales/acre – “it’s simple, at first square there has to be adequate water, nitrogen, phosphorous and zinc”. This was a revelation to many across the cotton belt, quickly followed by the positive research covering late season potassium for cotton from California to Arkansas. From an agronomy standpoint, this was a fascinating research topic – it still is but here are some pointers for successful cotton production..

As I have emphasized in prior articles – “good start, good finish” is every bit applicable to cotton as corn, wheat etc. Cotton will respond well to starter or early banded NPK plus micronutrient fertilizers – remember sulfur on lighter soils particularly.

All of these nutrients are interactive and basically stimulate root growth (water efficiency) and canopy development (photosynthesis and boll set-up). Go with complete packages in these early stages, just pouring nitrogen for example will be very inefficient. Assuming we pushed the plant to first square and pushing to first bloom, setting up yield will rely upon several nutrient factors.

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- **Manganese**, essential to N utilization and disease / pest resistance such as root rot
- **Zinc**, maximize NPKS efficiency
- **Boron**, push for yield set-up and later season N utilization essential to boll development, retention and fiber growth
- **Molybdenum**, best in combination with B, will again enhance N use and partitioning in maturing cotton
- Consider **calcium** and **magnesium** applications also to maintain cell wall development and photosynthesis

As modern cotton varieties pushed for maximum yield, another nutritional issue came to the fore – late season potassium deficiency. Always marked by the bronzing upper leaves, still a frequent yield and quality robber. Late season potassium sprays are widely utilized to preserve yield by reducing boll lock and moreover improving micronaire and fiber / staple length – use accordingly, particularly on light soils and high yielding varieties.

Like all crops, cotton profitability is a function of season long nutrition – start to finish! Be sure to get the appropriate product at the right time and use the best commercially available delivery system – it pays!

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