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Mode of Action: Boron vs. Mepiquat Chloride

DeltAg Product Brief
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Function of Boron: Boron plays a vital role in the movement of sugar in plants. At **DeltAg**, we like to describe the function of Boron as that of “a soap” in the plant. When Boron is deficient, the plant will struggle to translocate much needed sugars throughout the plant, and metabolic processes can get out of balance. The result can be too much growth and reduced retention of fruit. In other words, the plant can go into a vegetative cycle which will reduce fruiting, delay maturity, and reduce final yields.

Bottom Line: The best way to keep a crop from growing too much is to keep fruit on the plant. In cotton, a very good tool for many years has been the application of foliar boron to help feed young bolls that just dropped their blooms. These young bolls are the ones that will get ‘short-changed’ and end up shedding due to a lack of nutrients, particularly N and K. With excessive shedding, there is not enough fruit filling out or sizing to hold the vegetative growth back. Typically, a cotton crop will shed young bolls in the fourth or fifth week of bloom. Three or four weeks later, there will be another major shed. The first shedding can be reduced significantly with applications of foliar boron while the second shedding is very difficult to impact. This is simply because, by this phase of crop development, the plant is loaded up with older fruit and just can not feed all the fruit. The older fruit will get fed first and the little guys suffer or get shed.

Boron Foliar and Irrigation: One really neat tool is to apply foliar Boron in advance of irrigation, especially in-furrow irrigation. This has been proven to reduce shock by driving sugars to the fruit resulting in more bolls being held and less new growth.

Function of Mepiquat Chloride: This chemistry has a direct effect on plant hormones. The actual mode of action is to slow down cell elongation, which will enhance cell division. The result is reduced vegetative growth. With reduced growth, there is more energy for enhanced fruiting. Simply put, mepiquate chloride shortens internode length and makes the cotton crop shorter in stature. The primary benefit is less vegetation, better pesticide penetration of the crop canopy, and the result is more fruit that will be filled out to maturity.

Combination: At **DeltAg**, we utilize our **Boron Plus** in conjunction with the mepiquat chloride to achieve the desired result from two separate directions. This combination has been used for many years across the Mid-South. One great benefit is that the combination has proven over time to reduce the overall amount of mepiquate chloride that is applied over the course of a season.

Result: **Boron Plus** has been University tested over several years and has been proven to be more effective at 4 ounces per acre than conventional sources at standard rates!

For more information or to receive **DeltAg** Product Briefs,
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