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## Boron for Our Crops ...When & Why?

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Field and lab experience over many years at DeltAg, have taught us that boron applications, while not directly related to soil boron levels, can play a huge role at certain stages and in certain weather conditions in effecting final yield. To understand this, it is important that we first look at the effect Boron can have on crop development.

**Function of Boron:** Many growers and dealers have heard me refer to boron as acting like ‘soap in a plant’. For a plant to function properly, nutrients and sugars must be transferred up and down within the plant. Boron is critical in this translocation. Thus, boron has a direct effect on a plant’s ability to feed the fruit the plant is trying to develop.

**Function of Plants:** A plant really knows only one function. That is to reproduce itself by producing seed. When a plant is stressed, it is going to protect the oldest fruit before it runs completely out of energy. This causes a rush into a reproductive mode. Many times, this is too early and before the plant has developed the root and leaf structure to support a heavy fruit load. This stressed plant is going to abort the younger fruit in an effort to protect the older fruit that is already generating seed. The end result many times is reduced yields.

**Set & Hold More Fruit:** Boron improves translocation, aiding the plant’s ability to ‘feed’ the fruit. The end result is reduced shedding of that youngest fruit that was just pollinated. Thus, proper use of boron improves fruit retention. This use of boron has been tested over some thirty years or more and there is no doubt that foliar applications are very efficient with proper timing. Soil applications, applied close to the root system have also been shown to be effective. **Boron aids the plant’s ability to hold more fruit.**

**Years of Field Verification:** Back in the 80’s, when pulling cotton petioles and running the tissue lab, we saw a huge difference in the amount of shed fruit on the tail-end of furrow irrigated cotton that was treated with boron versus non-treated. Boll counts showed 15% to 30% increases in fruit retention for a given week of blooms. This was most effective after the plant had already set older fruit that was beginning to size in the lower portion of the plant. Today, we recommend foliar **Boron Plus** applied at least twice on 14 day intervals from the 4<sup>th</sup> to 7<sup>th</sup> week of bloom on many crops. DeltAg’s **CropKarb**, formulated for applications during heavy fruiting, also contains **Boron Plus** in addition to **Potassium Plus** and **Percplus**.

**Boron Drives Nitrates Down:** With the function of boron in translocation, we have also found that boron drives nitrate nitrogen levels down in plant petioles.

**Extreme Drought:** Caution should be used in applying foliar boron to seedling crops during dry weather. This could create a temporary shortage of much needed nitrate-nitrogen and possible stunting. However, timely foliar boron can help reduce shock from significant rainfall or irrigation after long dry spells on heavily fruited crops.

**Many Crops:** Today we utilize **Boron Plus** on many crops including cotton, soybeans, melons, commercial tomatoes, peppers, cucumbers and more. Every week during heavy blooming generates a completely new set of blooms that potentially become harvested fruit. In our experience, one foliar application will generally carry the crop for two to three weeks.

**Summary:** On soybeans, cotton and other crops, foliar or side-dressed boron can make a huge difference in final yield.

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