

California Cotton: Split Or Don't Split Nitrogen?

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The first post-planting irrigation water applications have been made in many furrow-irrigated fields the past week or two in some lighter soils, especially with the windy weather that has beat up the plants a bit and helped dry out the surface soils.

First irrigations are underway now or coming soon in heavier soil areas. Many drip and sprinkler-irrigated fields started irrigating earlier in many cases during the month of May. For many fields, this also can be the timing of primary nitrogen fertilizer applications.

For sprinkler, flood and furrow irrigated fields, potential advantages of split nitrogen fertilizer applications should be considered rather than large, single N applications when possible. Split N applications can help by:

- **Improving your ability** to adjust N fertilizer amounts based on fruit loads that are developing over the next 4 to 6 weeks – if fruit loads are modest and plant petiole nitrate levels are good, more N won't improve yields, so don't risk it, but if petiole nitrate levels are borderline and fruit loads show high yield potential, more N is warranted and likely will be very beneficial,
- **Basing your total N** applications not only on residual soil nitrate-N that you measured earlier in the spring, but also on the size and vigor of plants during this rapid growth period occurring through the month of June, when plant growth rates and fruit load are becoming apparent.
- **Causing you to re-assess** at a later time the desirability of “pushing” the plants for more growth. You only want to push the plants along with additional N when plant growth limitations combined with high fruit retention are indicating high yield potentials.
- **Better control over potential loss** of nitrate-N below the active root zone. At this relatively early, pre-layby point in the season, soil water intake rates with irrigations are often still relatively high in many soils and less uniform, and applying your estimate of a full growing season's N requirement at one time increases the risk of leaching losses – consider split applications to better match timing of applications to when the plant uses the most N

No one wants N to be the yield limiting factor in your fields, but if irrigation water limitations are one of your production problems this year, it can be important to try and reduce applied N since you may not have the water to go for a really long fruiting cycle and extending growth way into the fall.

It is not generally a productive practice to use water and fertilizer to “build” a relatively large plant in the hopes of lots of fruiting sites, and then short it for water, stressing it hard during the flowering and boll loading period. Adjust N applications while keeping in mind water availability and what you can afford.