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Nitrogen and sulfur fertilization for corn

Initial uptake of nitrogen by corn is low until it reaches the peak growth stage. Peak growth stage starts about 40 days after planting if planted in March. However, early and adequate nitrogen is very important to achieve adequate final yield. Corn should have starter nitrogen along with sulfur and minor elements as needed so that the plant will grow well until it can be sidedressed.

Sidedressing should take place when corn is 10-15 inches tall and be placed as near the row as possible. The reason for this placement is that the root system of corn at this stage is not wider than 3-4 inches on either side of the stalk and any nitrogen applied on a broadcast basis in sandy soils has a high likelihood of being lost to leaching below the root zone. The application at this stage may add several bushels of grain and several tons of silage.

Other applications of fertilizer when corn is taller may be put through the irrigation system for ease and convenience sake. Many of the new corn hybrids have a high yield capacity due to genetic resistance to rootworms and other pests. Yields of 400 bushels per acre have been made with many yields in the 300-340 bu/A range. Magnesium deficiency may be noted when corn is 24” or taller but usually grows out of it and seldom responds to direct Mg fertilization if soil test levels are adequate.
Soil nitrogen availability in relation to management

Fertilizer costs have escalated over the last few years. This increase has resulted in growers looking for ways to more efficiently utilize fertilizer applications and other management practices. Our data shows that cattle can recycle high amounts of nitrates from winter grazing in manure that will be available to the following cotton crop. There is often 2-4 times as much nitrate in the top foot of soil after grazing than with cover crops alone.

Likewise, splitting the same amount of nitrogen in 3 applications vs. 2 results in less leaching with 50% more available nitrogen in the top 12” of soil after 4 weeks but may not be economically practical on some crops. Split applications of fertilizer and timing of amounts according to plant needs are good ways of having nitrogen and sulfur available to the crop when it needs it. Split application of nitrogen can increase efficiency of utilization by plants and result in higher yields with less loss to leaching and runoff on sandy soils.
Forage Seed Coating

Seed coating is a technology that is increasing in use by the different seed companies. Seed coating provides protection to the forage seed while in the soil and also a healthy environment to the seed at the critical seedling stage.

The coating depending on type may provide one or several of the following benefits:

- proper nutrient microenvironment
- insect protection
- disease protection
- rhizobia inoculation
- seed weight build up
- monitoring of the seed due to coloring
- disguising for protection from birds.

Both forage legume and grass seeds can be coated. In the case of forage legumes, each species regardless of growing season requires a specific type of bacteria (inoculum) for nitrogen fixation. Because the seed is coated prior to being marketed, the coating with Rhizobium bacteria guarantees that the proper inoculum in high number stick to the seed and improves survival and nitrogen fixation. This seed coating is increasing more and more for legume seed, and as long as the seed is kept out of degrading conditions (direct sun) it saves from inoculating the seed manually. Seed coating is also available for grass seed. In many cases the use of coating eases broadcasting or seed flowing when using a drill.

Post-flood grass control in rice

Fall panicum and bearded sprangletop are the most common grass weeds in rice in the Everglades Agricultural Area (EAA). Successful control of these grasses soon after emergence is important to prevent yield losses in rice. Propanil (several trade names) has been the backbone of grass control in rice in the EAA. Thorough spray coverage of emerged weeds is essential when using propanil because it kills susceptible weeds by direct contact action. Propanil will control only weeds that have emerged and exposed at the time of application. Propanil will not control any weeds that emerge after application because it lacks residual activity. In addition, propanil is only applied to fields that are not flooded.

Late emerging grasses particularly beaded sprangletop are the common weed escapes in permanent flooded rice in the EAA. Once these grass escapes have been identified in rice, they must be controlled using salvage herbicides to prevent negative effects on yield. Use of salvage treatments must be based on grass weed pressure in the field. Cyhalofop-butyl (Clincher) is a postemergence herbicide that can be applied aerially post-flood on rice as a salvage treatment. Clincher controls a wide spectrum of annual and seedling perennial grasses in rice including sprangletop and fall panicum. This herbicide has a wide application window (can be applied up to 60 days before harvest), crop safety, and no rotational restrictions. For post-flood application, weed foliage must be at least 50% exposed above water. Water must be reintroduced within 24-48 hours after application to prevent regrowth or germination of new weeds. Clincher can be applied at 13.5 to 15 fluid ounces/acre plus crop oil concentrate or methylated seed oil at 1 quart/acre. More than 15 fluid ounces/acre in a single application or more than 25 fluid ounces/acre/year of clincher should not be applied. It is important to follow the label when using clincher.
Early season weed control: Frequently Asked Questions

Q: Can I apply a yellow herbicide (Prowl, Sonalan) with Valor?

A: Yes, but you need irrigation to make this work at peak performance.

The yellow herbicides are prone to degradation from sunlight if they lay on the soil surface for more than a few days. Both the Prowl H2O (pendimethalin) and Sonalan (ethalfluralin) labels suggest that incorporation should occur within 48 hours of application. We have traditionally used tillage to incorporate these herbicides with excellent results. However, the Valor (flumioxazin) label clearly states that mechanical incorporation will reduce the activity of this herbicide.

Considering these conflicting scenarios, we have two options. 1. Incorporate with irrigation or rainfall. Applying 0.5-1” of water will incorporate all of these herbicides and no further activities will be required for optimum performance. 2. Apply them separately. If irrigation is not available and rainfall is not eminent, I would suggest applying the yellow herbicide to be followed with mechanical incorporation. I would then apply Valor within 3 days after peanut planting. Of course rainfall is needed to activate the Valor, but it does not require immediate incorporation.

Q: Do I lose efficacy if Valor is applied prior to planting?

A: Yes, you might loose residual control during the growing season, and allow weed emergence within the planting row.

Depending on how long before planting you spray Valor, you might be losing late season residual weed control. Besides the good control Valor provides of important weed species such as Palmer amaranth that emerge early during the season, we want to take advantage of the potential this herbicide has for controlling late emerging species such as Florida beggarweed and morningglories.

Valor is an herbicide with very low mobility within the soil, so once you apply it, it is important to avoid soil disturbance. If we spray Valor before planting, and then disturb the soil to plant the seed, the herbicide layer on the ground will not be uniform in this area where we need it the most. This is exactly the situation we want to avoid in the planting row, so weeds do not grow and compete right next to peanut plants.

Therefore, it is better to plant your peanuts first and then spray the herbicide (PRE application). It is important to make sure that Valor is applied no later than 3 days after planting and before cracking, otherwise peanut injury is likely. Remember, if application is done at the right time, you will be taking full advantage of the benefits Valor can give you as a weed control tool.

Continues next page...
Q: How much Basagran should I mix with paraquat for the “at cracking” spray?

A: Basagran may not be required at all.

Basagran has traditionally been used with paraquat to reduce peanut injury. However, numerous experiments have shown that this early season paraquat injury rarely translates into peanut yield loss. Furthermore, the addition of Basagran has not been shown to improve peanut yield and commonly adds minor weed control benefits.

If you do not wish to spray paraquat alone, adding Storm might be a better option. Storm, which contains the active ingredients of both Basagran and Ultra Blazer, can help reduce the paraquat burn while improving both morningglory and pigweed control over paraquat alone.

Q: Is applying Cobra with crop oil concentrate (COC) too injurious?

A: No, Cobra (lactofen) plus COC will cause visible leaf injury (Figure 1), but peanut plants will quickly recover (Figure 2) and no yield reductions should be observed.

Cobra can cause severe peanut injury when applied with COC. The most common symptoms of injury are mainly speckles of dead tissue on the leaf blade. Our studies have shown that applying Cobra with COC at 15, 30, or 45 days after planting (DAP) can cause up to 30% injury 7 days after treatment. However, despite this level of injury, which might make growers nervous, peanut plants will quickly produce new leaves and usually a week later the injury is minimal. Very soon the plants are fully recovered, and by the end of the season, yields are not reduced. An important detail is that the earlier you spray, the higher the injury, but this does not mean that you have to delay your application. Proper application timing in relation to the weed size is critical. You need to spray early enough, so the weeds will have no more than 4 true leaves ensuring proper control.
An electronic Buffer Zone Calculator is available in EPA’s Soil Fumigant Toolbox. The EPA developed this new tool to help soil fumigant applicators, growers, enforcement personnel and others determine the buffer zone distances now required by soil fumigant product labels. Buffer zones provide distance between the edge of fields treated with soil fumigants and bystanders, people who live, work or otherwise spend time nearby.

When the final set of soil fumigant label changes went into effect on December 1, 2012, implementing important new protections for workers and bystanders, buffer zones were among the mitigation measures that began appearing on fumigant labels. As of that date, only soil fumigant products bearing all of the required risk mitigation measures may be sold and distributed by registrants. Growers and applicators can still apply products bearing old labels until supplies are exhausted. However, labels of newly purchased products require applicators to calculate and observe buffer zones when applying soil fumigants.

The EPA-developed Buffer Zone Calculator is specific to each fumigant product and is based on look-up tables on the product labels. In addition to calculating buffer zone distances, the calculator can also be used to quickly calculate buffer zone reductions through the use of credits and modifications to application parameters. Applicators will need to verify that the buffer zone results from the calculator are consistent with the buffer zone requirements on product labels. If there are any discrepancies, applicators should follow the label.

A Guide for Applicators explaining how to calculate buffer zones manually is also available in the Soil Fumigant Toolbox.
Calendar of Events

To follow the link, press “Ctrl” and put cursor over link, and “click.”

May 8-10 62nd Beef Cattle Short Course, Gainesville, FL
http://conference.ifas.ufl.edu/beef/

June 2-5 National Association of Plant Breeders Annual Meeting, Tampa, FL
http://www.plantbreeding.org/napb/Meetings/pbccmeeting2013.html

June 12 – 14 43rd Annual Joint Meeting of the Florida and Louisiana Divisions of the American Society of Sugar Cane Technologists, Wyndham Bay Point Resort, Panama City, FL.
http://www.assct.org/