AGRONOMY NOTES

UNIVERSITY OF FLORIDA
IFAS EXTENSION

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DATES TO REMEMBER

June 3 - Perennial peanut field day - Milton, FL
June 10 - Perennial peanut producers field day - Moultrie, GA

IN THIS ISSUE

Asian Soybean Rust

Asian soybean rust did not spread rapidly during the months of March and April in Florida due to the dry weather. However, with recent rains in late May, we are beginning to see rust on kudzu with greater frequency. It is expected that rust will be worse in 2006 due to the amount of inoculum that survived on kudzu over the winter. It appears that rust survived the winter in North Florida and has been observed as far north as Montgomery, Alabama (sheltered underneath a highway overpass). Researchers and graduate students from universities throughout the Corn Belt states will be working at the NFREC on this problem.

David Wright

Corn Nutrient Uptake Throughout the Season

Corn grows slowly during the first few weeks of growth. It normally takes 6 weeks for corn to reach the point of rapid nutrient uptake. From planting (March) to 6 weeks old, corn will assimilate approximately a third of a pound of N per day per acre (Table 1). From 6 weeks to 9 weeks of age, demand becomes much greater and corn will use 3 lbs of N per day per acre. This can go as high as 5 lbs per day in ideal growing conditions. Eight to nine weeks is normally the start of tasseling. From tasseling to 12 weeks, corn will continue to use about 3 lbs of N per day. Corn will continue to take up 2-3 lbs of N per acre per day after tasseling with most of this going into grain since vegetative growth is almost complete by this time.

About 45-50% of the weight of a corn crop is grain, so most of the biomass in the corn crop after tasseling is due to the developing ear.

Late N uptake is not critically important for yield, but can make some difference in protein content of the grain. However, a late-season application of N is a fairly expensive way to raise the protein content. The key to good yields is to do a good job of N management during the first 9-10 weeks of growth (from planting to mid May).

Table 1. Macro nutrients removed per acre by 30-ton corn-silage crop are shown in the table below.

Total Nutrient Uptakes of corn plants at Several Stages of growth and age (Quincy).

Stage of Growth	Days After Planting	N	P	K
		lbs uptake/A		
20 inches	41	14	2	27
48 inches	60	72	8	116
tassel	82	122	18	191
maturity	132	280	45	296

David Wright

Corn Planting in June

There are very few corn hybrids that can be planted in June without major damage from insects and disease. Therefore, growing a Bt corn is critical for late planting. Although Bt hybrids will manage many common insects, these hybrids are still sensitive to diseases such as southern corn rust and corn leaf blight. However, we have had good success with tropical Bt hybrids which have both insect and disease tolerance.

If corn is to be planted after corn, a soil insecticide should be used. Coincidentally, anytime that you plant into a green mat of weeds or previous crop roots, a soil insecticide is critical. Considering that it takes about 4 of weed-free conditions or between crops for the insect population to be reduce to non-harmful levels. Unless you intend to wait 4 weeks between harvest and replanting, a soil insecticide is needed to provide protection during this time.

David Wright

Timing Nitrogen on Cotton

Cotton should have a low rate of N as a starter for early growth. Nitrogen should also be applied to cotton at first-square to early bloom for good yields. However, timing is very critical on cotton since it will continue in the vegetative stage of growth if it has ample N and moisture, often at the expense of boll set. Nitrogen studies in Florida have shown that the critical period for N application is usually about 40-60 days after planting. N applied more than 12 weeks after planting generally shows no benefit, or decreases yield. Other problems associated with late applications of N are increased boll rot and hard lock, as well as increased usage of growth regulators to control excessive growth.

David Wright

Kill Date of Bahiagrass and Soil Compaction

Data from recent studies have shown that killing bahiagrass in the fall vs. the spring can have a big impact on root growth of peanut (Image 1). Fall killing of the bahiagrass allows for decomposition and heavy tillage does not have to be performed. Peanuts may then be strip tilled directly into fall killed bahiagrass with excellent results. If bahiagrass is spring killed, some tillage is required to achieve similar yields to fall kill. Fall killing of bahiagrass can result in as many as 4-8 less trips across the field, having a major impact on fuel consumption and cost of production. Fall killing also results in less compact than spring kill at planting (Figure 2).

Figure 2. Soil compaction, measured in kPa resistance, in fall vs spring killed bahiagrass.

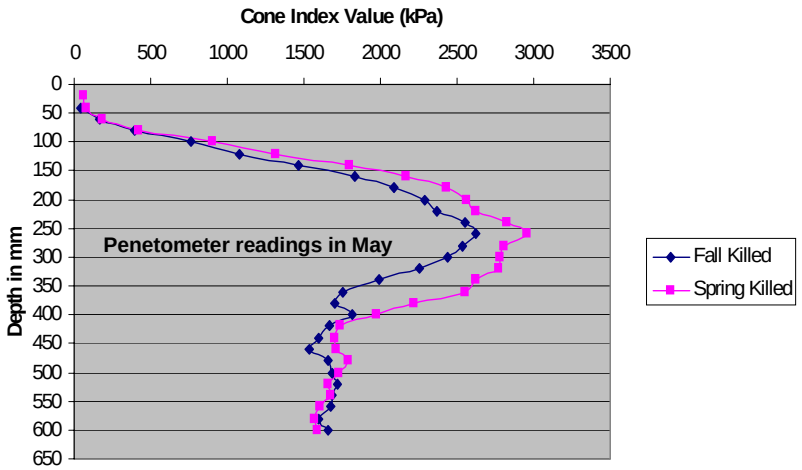


Image 1. Impact of soil compaction on peanut root development.

David Wright

Micronutrients on Peanuts

Peanuts do not require a large amount of fertilizer when compared to many crops. However, peanuts do need some nutrients in higher amounts than other crops.

The addition of boron is essential to prevent hollow heart and is especially critical on sandy soils. Spring of 2005 was wet and several fields were identified with boron deficiencies. Boron can be applied with herbicide and/or fungicide applications at low rates (1/4 lb a.i.) in 2-3 applications. Although total uptake of boron will often not exceed about one tenth pound per acre by maturity, the need for boron is still critical. The most common form of boron is Solubor, (sodium borate). This material has a high pH and may influence the efficacy of pesticides if applied as a tank mix. Be sure to check pesticides labels to see if it has an influence on pesticide efficacy if tank mixed.

One micronutrient that is often found at toxic levels in peanuts is zinc. Peanuts are much more susceptible to zinc than soybeans, corn, or cotton. High zinc levels will result in split stems and increased incidence of disease. The only solution to growing peanuts on high zinc soils is to maintain a high pH to make zinc less available to the plants. Some soils may be high enough in zinc that peanuts can never be grown without some damage. Since crop removal for zinc is about 1 pound per acre per year, it may take many years to reduce the amount in soils by crop removal.

David Wright

Cadre + Select Tank-Mixes

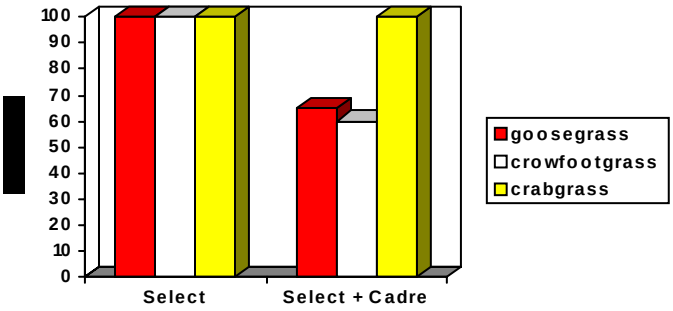
In the next few weeks, Cadre herbicide will be sprayed on several thousand acres of peanuts. Cadre is a highly effective herbicide that controls numerous broadleaf and grass weeds. Although Cadre provides good control of crabgrass, it will not consistently control other grasses such as goosegrass or Texas panicum. If these weeds are present, growers will commonly tank-mix Select or Poast Plus to improve control.

However, Select is easily antagonized by other herbicides. In a study conducted last year, Select was applied alone and with Cadre to control goosegrass, crowfootgrass, and crabgrass. Select applied alone (8 oz/A) provided 100% control of all grass weeds present. However, when Select (8 oz) + Cadre (1.44 oz) were applied together, goosegrass and crowfootgrass control dropped to 60% (Figure 2).

If grass weeds, that Cadre does not easily control, are present in peanuts, it is best to apply Cadre and grass herbicides separately. Although this requires an extra trip across the field, weed control will be greatly

improved. Additionally, retreating with Select because the first application was ineffective is more expensive than initially planning to make two applications.

Figure 2. Antagonism of Cadre + Select on annual grasses.



Jason Ferrell

Limpograss and Herbicides

Can I apply Pasturegard on my limpograss pasture? What about that new Dow product, Milestone - will it hurt my limpograss? These are a sample of the many questions we recieve when a rancher wants to control weeds in limpograss. Dicamba (Banvel) has been the standard recommendation for weed control in limpograss, because 2,4-D has been reported to cause significant limpograss injury. Over the past couple of years, we have had several herbicides labeled in the pasture market. These herbicides include Cimarron, Telar, Pasturegard, Overdrive, and Milestone, and little information regarding the tolerance of limpograss to these herbicides has been recorded.

In a study initiated on 12 April, 2005, 2,4-D amine at 2, 4, and 8 pints/acre, Remedy at 1, 2, and 4 pints/acre, and Milestone at 3, 5, and 7 fluid ounces/acre were applied to mowed (10 inches of regrowth) and non-mowed limpograss. All three herbicides caused some visual injury one month after treatment. By 3 months after treatment, there were no visual injury symptoms present on either mowed or non-mowed limpograss. When not mowed prior to herbicide application, these herbicide treatments did not impact limpograss production 6 months after treatment. However, if mowed prior to herbicide treatment, a 20% yield reduction was observed from 4 and 8 pints of 2,4-D amine as well as 2 and 4 pints of Remedy. Milestone caused a 15%-30% yield reduction when limpograss was mowed prior to application. This indicates that 2,4-D amine is safe on limpograss when no more than 2 pints/acre is applied.

The lack of limpograss injury from applying 2 pints of 2,4-D was surprising. Therefore, a second study was initiated 16 September, 2005. In this study, Cimarron at 0.1-0.4 ounces/acre, Telar at 0.5 and 1.0 ounces/acre, Pasturegard at 2, 3, and 4 pints/acre, Banvel at 0.25, 0.50, and 1 pint/acre, 2,4-D at 0.75, 1.5, and 3 pints/acre, WeedMaster at 1, 2, and 4 pints/acre, and Overdrive at 4 and 8 ounces/acre was applied to 10 inch limpograss. Applications of Cimarron, Telar, Pasturegard at 2 and 3 pints, Banvel, 2,4-D at 0.75 pints, and WeedMaster at 1 and 2 pints caused less than 15% injury (chlorosis and necrosis) 1 month after treatment. By 2 months after treatment, no chlorosis or necrosis was present from any herbicide application. Although chlorosis was not present, limpograss height was reduced by at least 15% from applications of Pasturegard at 4 pints, 2,4-D at 3 pints, WeedMaster at 4 pints, and Overdrive. Biomass was not recorded in this study.

At this point in time, Overdrive should not be applied to limpograss as injury was too severe. However, Cimarron and Telar are additional options that can be considered. Pasturegard (≤3 pints/acre) and Remedy (≤2 pints/acre) may also be applied to limpograss if some initial injury can be tolerated. At this point in time, Milestone can be applied up to 7 fluid ounces/acre when limpograss growth is mature.

Limpograss appears to be more tolerant than previously thought to 2,4-D amine, but the effects of 2,4-D amine appear to vary under different environmental conditions. Therefore, 2,4-D-containing products should not be applied to limpograss until the effects of 2,4-D on limpograss are fully understood. Also, keep in mind that new limpograss growth may be more susceptible to herbicide injury than more mature stands.

Herbicides often cause injury to desirable species. How much injury can be tolerated is usually up to the grower. However, removing weeds in a pasture will often outweigh the effects of an herbicide on desirable species, especially when injury is less than 15%. We will continue investigating the effect of herbicide applications at different times of the year to gain a better understanding how herbicides affect limpograss production.

Brent Sellers

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