

AGRONOMY

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NOTES

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DATES TO REMEMBER

August 6-9th	- Beef Cattle Reproduction Management School, Deseret Ranch, Deer Park, FL
August 9	- 10 th Regional Hay Field Day, Alachua
September 20th	- 2007 Equine Institute and Allied Trade Show, South Eastern Livestock Pavilion, Ocala, Marion County.
October 19th	- Quail and Dove Management Short Course, Arcadia, FL.

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Quick Field Test for Nitrates in Corn and Summer Forages

Livestock are sensitive to high nitrates in grass crops and care should be taken in grazing summer annual grasses during drought periods. Nitrates are usually highest in the base of the stalk and become less concentrated as you get higher on the plant. Plants that have died from drought may have high nitrates in the lower stems and if cut for hay or silage they may need to be cut high to reduce the likely hood of high nitrates.

After periods of drought, plants should be checked for nitrates before being utilized. Nitrate test can also be used to determine if nitrogen is adequate for corn growth during the vegetative stage of growth. **Making the Solution for Testing:** Dissolve 1 gram of diphenylamine in 100 ml of concentrated sulfuric acid. This solution is very corrosive so be careful when handling it. If the solution becomes discolored, prepare a new one. A small bottle with a dropper will be enough to test many plants. **Testing Methods-** To test for nitrates, cut stalks of corn, millet, etc., and slice the stem in half, length wise. Apply a few drops of the solution of sulfuric acid with the diphenylamine along the split stem, from the base to the top. Where nitrates are present, a blue color is produced immediately on the stem tissue. Dark blue color indicates high amounts of nitrates. If no blue color is produced, no reserve nitrates are present and the yellowish green color indicates that nitrogen is inadequate for normal growth.

David Wright

Control of Nutsedge in Cotton

Nutsedge has been a problem in cotton for many years. Even with all the advantages that Roundup Ready cotton provides, nutsedge is one weed that glyphosate often fails to control. So what are our options?

In small cotton there are still few choices. The best solution is to spray glyphosate while the nutsedge is small. Even if the glyphosate application does not kill the weed, it will often cause severe injury and delay its growth for 2 or more weeks. This period of time is generally sufficient to delay the nutsedge until a more effective follow-up application can be made. We do not commonly recommend using MSMA broadcast since nutsedge control is marginal and cotton injury is often excessive.

For larger cotton, there are more options. Envoke is extremely effective on nutsedge (even large plants) and can be applied over-the-top of cotton after the 5th leaf stage. Envoke can be injurious to small cotton, but tolerance improves dramatically after the 5th leaf stage and the plant continues to become more tolerant with age. Another option for larger cotton is glyphosate+MSMA applied as directed. This combination, when applied below the cotton leaves, provides excellent nutsedge control without excessive cotton injury.

At layby, Suprend herbicide is an excellent choice. Suprend is a combination of Envoke + diuron. Of important note, Suprend is price competitive to Envoke alone; meaning that the added benefit of the diuron is essentially free.

By taking advantage of the herbicides now at our disposal, highly effective nutsedge control can be obtained.

Jason Ferrell

Timing of Nitrogen on Cotton

Normally nitrogen is applied to cotton during late squaring to early bloom. Cotton does not require as much N as many crops. Normally 50-60 lbs/A are required for a bale of cotton. However, there may be 20-50

lbs/A of N available to the plant over the season in the soil and applications of 60-90 lbs/A of N may be adequate for 2-3 bale yields. Sandy soils do require more N than heavier soils since there is usually less residual and lower amounts of organic matter. Nitrogen should be applied to cotton no later than the 3rd week of bloom. Sulfur is especially important on sandy soils with yield responses of a bale per acre (with 30 lbs/A of S). Late foliar applications of N as urea are not recommended unless there is not a good boll set.

David Wright

When is Too Late to Make a Good Cotton Crop?

This is the slowest that I have seen cotton grow off. There are usually rains at some point before this time of year and cotton is often 15-30" tall by now and in a rapid growth stage. Is it too late to try to make a good crop and should inputs be reduced? Normally cotton will begin blooming in the first or second week of July if planted timely. However, cotton will still make a good crop if it starts blooming by the first week of August. Therefore, inputs should be put into the crop to make good yields. Cotton is very drought tolerant due to the long bloom period (usually 8 weeks or more). If cotton can have 4 good weeks of bloom until early September, high yields can still be made. Many fields have very uneven plant heights due to cotton germinating over a period of 4-6 weeks. It will take a few weeks of good rains for the crop to catch up in height. When the crop has even out, then it can be managed better than during the drought that we encountered.

David Wright

Rotating Crops with Bahiagrass

Since the first half of 2007 has started out very dry, this would be a good year to

consider planting bahiagrass for rotation with other crops especially if other crops have failed and the outlook for other cash crops is not bright. Our research results have shown that bahiagrass in rotation with other crops can enhance soil properties including organic matter as well as reduce pest pressure for subsequent crops. We have seen as much as 2-7 fold increase in returns to the farm if bahiagrass is included in a farming system and cattle can add significantly to the profit potential. Perennial grasses weather the storms and droughts better than annual crops; perennial crops can still produce well after weather extremes while annual crops normally have a period of several weeks when adequate moisture is very critical to achieve high production. If the plant does not receive adequate moisture in the critical period, it cannot recover. Fields that are in bahiagrass or other perennial grasses for 2 years can be utilized for grazing, seed production, hay, or biomass for bioenergy. Most of the perennial grasses will produce high amounts of forage if irrigated and fertilized well.

David Wright

Nitrate and Prussic Acid in Forages – Beware this Year

Nitrate and prussic acid in forages are not the same but both may have fatal consequences to livestock and they occur under similar conditions. I will go over each of the toxicities and their differences. First, nitrate poisoning: To some extent nitrate is present in all forages. Technically, the problem with nitrates occurs when nitrate concentrations in the plant are unusually high, usually when the plants undergo drought conditions like the ones we have had this year. Drought conditions impede the plant from growing at the normal rate and the nitrogen absorbed by the plant, instead of being converted into new growth, accumulates in the plant at toxic levels for livestock. Plants that accumulate nitrates

are those in the sorghum family (forage sorghum and sorghum hybrids, Johnson grass), corn, bermudagrasses, leafy vegetables, pigweed or carelessnessweed (Amaranthus). Special care must be taken when holding animals in pens where pigweeds are present because animals will consume these weeds and sudden poisoning can result (in many cases within 4 hours of consumption).

How to prevent losses? Do not graze during stress periods and monitor nitrate levels to determine if the levels in the forage are safe. Do not graze forages of the sorghum family too short; nitrates accumulate in the older lower leaves. If you test the forage and nitrate concentrations are high, keep in mind that once the concentration is high they remain high; curing the forage does not minimize the concentration as is the case when prussic acid is present. One alternative to using forage with high nitrates is to dilute the nitrate concentration by feeding hay that does not have any nitrate problem. The toxicities guidelines show that ruminants in general can safely eat forages that have up to 1% of nitrates on a dry weight basis. Horses are thought to have a higher tolerance to nitrates but keeping the cattle guidelines for horses is a safe measure.

Prussic acid, this is another problem that is present with droughty conditions. It also occurs in plants of the sorghum family, commonly less than 1 ½ foot, and occasionally on white clover but prussic acid does not occur in pearl millet or corn. Different from nitrate poisoning, prussic acid accumulates in the new growth and not in the older lower leaves. Prussic acid poisoning occurs within minutes of consumption and is one of the most toxic conditions. Livestock may show symptoms of intoxication within minutes after consumption of feed. Different from nitrate poisoning, prussic acid dissipates or goes away when the hay is properly cured because the toxic compound volatilizes over

time. However, you still need to monitor the hay and have it tested for prussic acid to confirm 'safety' in using the feed. After a rain or irrigation on drought stressed fields wait at least 2 (two) weeks after plants begin to grow before grazing.

Yoana Newman

Keeping the Forage Calendar

Keep in mind that to obtain that high quality bermudagrass hay or forage for grazing you need to keep up with the "forage calendar". Observing the forage calendar is not difficult or complicated and just implies to cut or graze your perennial warm-season grasses (bahia grass, bermudagrass, hemarthria or limpograss, stargrass) when they are 4 to 5 weeks old. Grass cut at 4 to 5 wk old maturity will have high digestibility and crude protein for beef cows and horses. Cutting or using the forage at a later time means you will be harvesting or providing your livestock mainly with fiber and with little nutritive value. Warm-season perennial grasses beyond 35 days sharply drop in nutritive value. Cutting or using your grass earlier than 35 days will increase not only the quality but the productivity of your grass.

Yoana Newman

Peanut Problems

Peanuts may have a yellow cast to them during the growing season at times. There could be several causes for this yellowing. Some of the causes include poor nodulation, micronutrient deficiencies, or herbicide damage. Other fields have been planted after other crops have been grown and the newly planted fields have encountered seedling diseases which results in plants dying and not much discoloration. Manganese deficiencies may occur on soils that have been limed for years and have a pH above 6.3. Manganese applications will

be needed for the crop to overcome this deficiency. It is possible to lower the pH through acid forming fertilizers, however, applications of a few pounds of Manganese sulfate micronutrient may be more cost effective for that crop and the response will probably be quicker than trying to change the pH rapidly.

David Wright

Increase of Soybean Acreage

Due to the failure of corn, cotton, and peanuts in many areas across Florida, there has been a big surge in interest in soybeans which may be planted as late as mid to late August. However, with late planting the possibilities increase for a problem with Asian soybean rust (ASR). Research at NFREC in Quincy over the past 3 years has shown that the disease is much more intense late in the season and therefore we plant many of our studies in July and August. The disease can be controlled fairly easily with timely fungicide applications and good management. Many scientists from the eastern half of the US are working on soybean rust in Quincy. There is a web site <http://www.usda.gov/soybeanrust/> devoted to the disease and its spread. The website also features a weekly commentary obtained from sentinel plots that have been planted all over the US in soybean producing states. The disease has not spread as rapidly as in the past 2 years due to the very dry conditions. However, with late planted soybeans it is still early in the season. If ASR spreads and the disease incidence is severe, fungicides will be recommended for control. At the current time the disease has only been found in sites in central Florida and in Jacksonville and in sites in Louisiana and Texas. This can change very rapidly with rainfall and movement of spores on storm systems. Counties will be notified as the disease appears and information will be passed on to growers. Fungicides are not being recommended at the current time until

we know that the disease will be a problem. Fungicide applications are not normally made until bloom period which usually occurs in July and August depending on planting date and maturity group. We have been very successful with MG V soybeans planted in August for crop maturity times and yield.

David Wright and Jim Marois

Maximizing Smutgrass Control

Smutgrass is an all too common pest that infests 1,000's of acres in Florida and across the Southeast. Although tropical soda apple and Brazilian pepper often get more attention, smutgrass is more common and costly than any other pasture weed in Florida.

The reason smutgrass is so common is that control can be costly and tricky. However, there are certain strategies that can dramatically improve smutgrass control.

Herbicide Selection. Currently, Velpar is the only herbicide that will consistently control smutgrass. Much work has been done to determine the optimum application rate to minimize cost while maximizing control. Research has shown that Velpar at 2 pt/A can control smutgrass, but control failures are common unless environmental conditions are just right. Therefore, the IFAS recommendations are to use a minimum of 3 pt/A. Our research, over many locations and many years, have found 3 pt/A to be lowest application rate that will consistently control smutgrass.

Roundup (or other glyphosate containing products) will control smutgrass, but it will also completely kill the desirable forage. Unless total pasture renovation is desirable, glyphosate should not be used.

Application Timing. The most critical component to effective smutgrass control is proper application timing. Velpar is a soil

active herbicide that is primarily taken up by plant roots. Therefore, Velpar should be applied when root uptake will be maximized. This means that Velpar is most effective when applied once rainfall is common.

Applications of Velpar during the dry period of spring will often fail to control smutgrass. This failure occurs because rainfall is not available to move the herbicide into the soil for uptake by roots. The herbicide then begins to degrade in the soil and is not present when the summer rains begin. Our experience with Velpar is that optimum smutgrass control occurs when the application is made in the June to August timeframe. During these months afternoon rain is common and smutgrass is actively growing. Under these conditions, >90% smutgrass control is commonly achieved.

Other Factors. Other recommendations for smutgrass often include mowing prior to the herbicide application. Although this practice is common, our research has not shown a benefit to mowing prior to Velpar application. Considering the current price of diesel and the time required, mowing is an unnecessary expense.

It is also common for landowners to include various adjuvants (surfactants, stickers, etc.) when spraying Velpar. However, our research has shown that these adjuvants are not necessary. The purpose of an adjuvant is to improve herbicide uptake into plant leaves. However, most Velpar activity is through root uptake, with only minimal amounts entering the leaves. Granted, leaf uptake of Velpar does occur and in some conditions an adjuvant may improve control. But, if Velpar is applied in the summer months, when rainfall is common, smutgrass control will be maximized and the use of an adjuvant is not necessary.

Smutgrass is a difficult weed, but it can be managed. Applying the correct herbicide,

using the proper rate, and applying at the right time will kill smutgrass and give you more bahiagrass to graze.

Jason Ferrell and Brent Sellers

Late Planting Dates for Peanut, Soybean, Cotton, Corn, and Sorghum

Soybeans may still be planted in July and August if drilled and irrigated. Yields can be very satisfactory with MG V-VII. This may seem like a big turn around from 15 years ago when we would recommend late MG soybeans for late planting. However, since we have been working on Asian soybean rust, we have found the MG V soybeans can yield 35-50 bushels when planted late and managed properly. They will normally mature before a frost and set seed and fill pods during longer daylength periods with less irrigation. Peanuts will not yield enough to be profitable from plantings made in July. Also, peanuts are often damaged from late frosts when dug in November. If planted in July, cotton will not make developing bolls because of potential freeze. Corn may be planted as a second crop for grain or silage if a Bt hybrid with good disease resistance or a good tropical hybrid with Bt are used. The latest planting date for corn should be July 15-20 to make satisfactory yields. Grain sorghum can be planted as late as corn with good silage yields.

David Wright

Planting Another Crop After a Drought Stressed Crop

It is tempting to turn around and plant another crop immediately after other crops have failed. However, be very cautious since residual herbicides can result in poor plant growth or death of the following crop if the plant back restriction is not followed. Also, when planting a crop into the green residue of the previous crops, plant diseases

can be a problem on seedlings of the newly planted crop. Seedling disease is always a problem with cotton, peanut and soybean if the cover crop or previous crop is not killed far enough in advance or if heavy residue is incorporated into the soil. It would be best to wait for 3-4 weeks or more before the

next crop is planted into a crop that had green residue or use strip tillage with in furrow fungicides to help combat seedling diseases.

David Wright

The use of trade names does not constitute a guarantee or warrant of products named and does not signify approval to the exclusion of similar products.

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