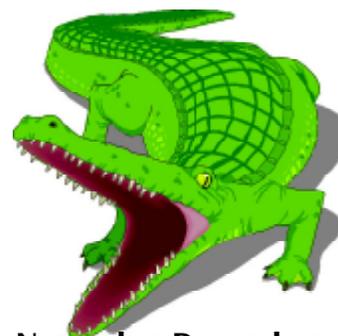


AGRONOMY



NOTES



November-December 2000

DATES TO REMEMBER

- January 23-24 Agronomic Crop In-Service Training - NFREC-Quincy
Southern Agricultural Workers Meeting
- January 28-30 Southern Branch Meeting - American Society of Agronomy
Ft. Worth, TX

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Messenger Reduces Hard Lock Cotton

A new plant health material from Eden Biosciences has been shown to reduce hard lock in cotton by as much as 50% when applied in 4 applications about 2 weeks apart starting at first square. This is some of the first data on control of hard lock in cotton with Messenger. Yield responses with the material have averaged about 15% over studies conducted during the last 4 years. Subsequent data from this year should help determine the best time of application for the material.

DLW

Peanut Quotas

The peanut quota for 2001 will be the same as in 2000, according to the USDA. The quota is determined by estimates of the need for domestic edible and related uses in the next marketing year. The average quota support price is set by law at \$610. The price support for additional peanuts will be announced by February 15, 2001.

EBW

Farm-Stored Peanuts

Farmers who store peanuts on the farm for seed use or other purposes should protect and maintain their quality. Moisture content should be checked periodically and kept below 10 percent. If the peanuts are stored in wagons, heat can be added as needed, or it may be possible to just run the fans during low-humidity days to reduce the moisture. Be sure to turn the fans off at night unless heat is added. If the peanuts are stored in a building, ventilation should be used to keep moisture at safe levels. Protect the peanuts from rodents, squirrels, birds, and other animal pests.

EBW

Castor Bean

Last year, I had a question about castor bean in a pasture. Is castor bean poisonous? Yes, castor bean is poisonous. Castor bean is a perennial in the tropics and subtropics, but acts as an annual in much of the South where frost occurs. "Found throughout the Southeast; cultivated and occasionally escaping and persisting in pinelands, waste places, and roadsides." I have seen it growing in South Florida along roadsides and on mounds of topsoil stockpiled by the highway department.

Toxicity - "The poisonous principle is a phytotoxin called ricin. In the Southeast the plant is commonly planted not only as an ornamental but also in vegetable gardens to repel

moles. Horses are most susceptible to poisoning, but all livestock and humans can be affected. All parts of the plant are toxic, especially the seeds. Toxicity is seen most often in spring and summer."

Control - Mowing of very large plants may provide all of the control that is needed especially in the fall. If only a few plants are present and if they are carrying seed, removal by hand will prevent the spreading of seed. In the spring, as seed germinates and new plants develop, commonly used pasture herbicides will likely control small plants.

CGC

Coffee Weed

A publication SP 57, "Poisonous Plants of the Southeastern United States" is available from the University of Florida Institute of Food and Agricultural Sciences for the cost of \$4.00.

Recently, there have been reports of animal deaths from eating coffee weed. There are two plants commonly called coffee weed that can cause a problem; these are sicklepod (*Senna obtusifolia*) and coffee senna (*Cassia occidentalis*).

The following comes from the older book entitled "Poisonous Plants of the Southern United States":

Both plants are summer annuals. Coffee senna is very similar to sicklepod but has mostly 8 or more leaflets rather than 4 to 6. The pods on coffee senna are flattened while those of sickle pod are nearly four-sided. Also, coffee senna pods tend to be straighter and shorter than those of sicklepod. The end of leaflets of coffee senna are pointed whereas those of sicklepod tend to be rounded. These plants are found throughout the South but are more abundant on sandy soils of the coastal plain, and are most abundant in cultivated fields, roadsides, waste places and open pinelands."

Toxicity - The toxic principles have not been clearly established. The seeds appear to exert their toxicity upon the skeletal muscles, kidney, and liver. The leaves and stem also contain toxin, whether green or dry. Sicklepod is much more prevalent but somewhat less toxic than coffee senna. Animals can be poisoned by consuming the plant in the field, in green chop, in hay or if the seed is mixed in grain. Toxicity has been observed in cattle. It should be assumed that other animals are susceptible to the effects of these plants.

Symptoms - Diarrhea is usually the first symptom observed. Later, the animals go off feed, appear lethargic, and tremors appear in the hind legs, indicating muscle degeneration. As the muscle degeneration progresses, the urine becomes dark and coffee-colored and the animal becomes recumbent and

is unable to rise. Death often occurs within 12 hours after the animal goes down. There is no fever.

Treatment - Once animals become recumbent, treatment is usually ineffective. Selenium and Vitamin E injections have been used with variable results.

CGC

Frosted Sorghums

Sorghums, sudangrass, and johnsongrass will produce prussic acid after a frost or freeze. The frosted forage will produce large quantities of prussic acid when the plant cells break down in the cow's rumen. This may cause prussic acid (HCN) poisoning.

If the forage is allowed to dry for 3 to 6 days it should be safe to consume. As the plants dry, the toxic compound will be released to the atmosphere as a gas. In the fall remove animals from these pastures when frost is eminent. [Pearl millet does not produce prussic acid.]

Also do not allow animals to graze young regrowth (south Florida) that may appear after the tops have been killed by a frost. At any time during the growing season, always allow these plants to reach a height of 18 to 24 inches before grazing since the young plants have a higher concentration of prussic acid, frost or no frost, and can be dangerous.

Frosted sorghums can be harvested for silage. The danger of prussic acid poisoning is minimized since the forage is chopped coming out of the field and then handled again when taken out of the silo. This provides ample opportunity for the toxin to escape to the atmosphere. A light frost may even be helpful if sorghum is harvested for silage since it will allow the plant to dry down. The forage sorghums often contain too high a level of moisture when harvested direct (without wilting) for silage.

Sorghums and other warm season annual grasses that have received moderate to high rates of nitrogen fertilizer and have been under drought stress may contain toxic levels of nitrates. If levels are high enough, nitrate poisoning can occur. Drying or harvesting the plants for silage does get rid of the nitrate. In some situations, the potential for nitrate poisoning may be greater than for prussic acid poisoning.

CGC

Grass Tetany in Cattle

Grass tetany, sometimes called grass staggers or hypomagnesemia, can be a serious problem in Florida with cattle

grazing small grain or ryegrass pastures. The problem is usually confined to lactating cows. The exact cause of the disease is unknown, although it is always associated with an imbalance in the mineral components of blood serum, especially reduced magnesium levels. In Florida, the disease is more severe when cattle are grazing young forage, particularly the first flush of growth during December and January. Once the forage becomes more mature, the likelihood of problems occurring is reduced. The disease is apt to appear under conditions of nutritional stress. Placing cattle on winter pasture directly after being on frosted or other low quality pasture may cause such a nutritional stress.

The symptoms of hypomagnesemia closely resemble those of milk fever or ketosis. These include nervousness, lack of coordination, muscular spasms, staggering, and death. When the disease is suspected, a veterinarian should be called immediately to diagnose and to initiate treatment. However, in beef herds, the herdsman does not always have the opportunity to observe the signs of the disease and affected cattle may be found dead in the pasture.

Factors which have been associated with this disease include low levels of magnesium (Mg) and high protein and potassium levels in the forage. Use dolomitic limestone, which contains magnesium, to increase forage magnesium levels if the level of soil magnesium is low. On soils with a high pH level, magnesium can be included with fertilizer materials. Excess nitrogen in conjunction with high levels of potassium fertilization tends to reduce the magnesium level in most forage plants. Consequently, these fertilizer elements should not be applied in excess on temporary winter pastures. Follow recommendations based on soil test results.

Grass tetany can be prevented by feeding mineral supplements that contain magnesium. Commercial mineral mixtures containing 10-15% magnesium are available for feeding during periods of increased grass tetany probability. Cattle need to consume 6-12 ounces/head/day of this mineral. (For additional information on this problem, see the publication Agronomy Facts SS-AGR-64 "Grass Tetany in Cattle").

CGC

Selecting a Tobacco Variety for 2001

Generally Florida tobacco farmers prefer varieties that, in addition to producing good yields and quality, have resistance to root-knot nematodes and "hold well" in the field. Most often a variety that "holds well" has nematode resistance and is tolerant of the brown spot disease. The K 326 variety has been the most popular variety in Florida for these reasons, and will probably remain the leading variety in 2001. However, K 326 does not have much resistance to black shank,

so farmers with severe infestations of this disease may have to make other variety selections. NC 71, NC 72, K 346, Speight 168, Speight 172, and other varieties have high black shank resistance as well as nematode resistance and otherwise produce well in Florida. For those farmers who consistently have losses to potato virus-Y and tobacco etch virus, but no black shank, NC 55 would be a good selection. It is the only variety with such resistance. There was considerable tobacco mosaic virus (TMV) in other states in 2000, which may create interest in a TMV-resistant variety. NC 297 has resistance to TMV and also has high black shank resistance. Quality of NC 297 may not be outstanding, based on limited testing in Florida, but it is probably better than other TMV-resistant varieties. Some growers may wish to grow a non-flowering variety because of the ease of sucker control. Speight NF3 and OX 414NF have performed well in Florida. If a grower does not retrofit enough barns to easily cure his entire crop, he may want to select an early-maturing variety, such as Coker 371-Gold or K 394 for part of his acreage, thereby enabling him to extend his harvest season.

EBW

Tobacco Curing Barn Retrofitting

One of the first questions a grower may have about retrofitting is how many barns to retrofit. Naturally the answer is to retrofit as many barns as needed to cure the 2001 crop. The quota will be announced on December 15, so the grower then only needs to divide his quota by the number of pounds he can cure in one barn in one season and he will have the answer. It is important not to assume that because Stabilization provides a total of 13 cents per pound of 2000 quota and \$2600 per barn that this all he should retrofit. This rate of 13 cents per pound and \$2600 per barn calculates out to 20,000 pounds of tobacco cured in one barn for the season. Few farmers can cure 20,000 pounds per barn per season, and therefore may have to retrofit more barns than the payments would cover at the above rates. If the 2001 quota is the same as in 2000, enough barns should be retrofitted so that the grower will not be tempted to use non-retrofitted barns if he is unable to cure tobacco as fast as it matures.

EBW

Tobacco Farmer Partnering Program by Philip Morris

Philip Morris has announced that they plan to expand their Tobacco Farmer Partnering Program into the flue-cured states in 2001. This program was started in the burley area in 2000 and involves the contracting of tobacco. Details will be provided in January 2001. In the burley areas, farmers who contracted with Philip Morris delivered their tobacco to desig-

nated locations. It is expected that the Philip Morris contracts will be similar to contracts offered by other companies, in that they will be primarily marketing contracts rather than production contracts. Production contracts usually include specifications on how the commodity is produced, as is the case in many of the poultry contracts. Marketing contracts may involve quality requirements that are affected by production practices, but decisions on variety, fertilization, pest control, and management are usually left to the grower. Grading standards, pricing, and other details such as the method of selecting participating growers should be announced in January.

EBW

Tobacco Quota for 2001

The USDA has announced that the 2001 flue-cured tobacco basic quota will be 548.9 million pounds, an increase of about one percent from the 2000 quota. The quota is determined by a formula that included 297 million pounds of purchase intentions by the domestic cigarette manufacturers, a 3-year average export level of 297.7 million pounds, a reserve stock adjustment of minus 61.8 million pounds, and the USDA secretary's discretionary adjustment of plus 16 million pounds. The effective quota for 2001 will be about 543 million pounds, which reflects over-marketings of the 2000 crop. The average support price will be \$1.66 per pound, which is up 2 cents from 2000. The no-net-cost assessment will be 5 cents per pound, with half paid by the producer and the other half paid by the purchaser.

EBW

Tobacco Plant Bed Fumigation

Prior to fumigation, plant bed soils should be well-prepared so that the fumigant penetrates the top few inches. Break up clods and trash that could protect weed seed and disease organisms from the fumigant. If the soil is dry, irrigate a few days before fumigation to help soften the seed coats of weed seed to increase the probability of their control. Fumigate when the air temperatures are above 55 degrees. Fumigants for tobacco plant beds will likely contain 20-33 percent chloropicrin this year. It should be remembered that chloropicrin does not dissipate from the soil as quickly as methyl bromide. To avoid the possibility of damage to tobacco seed, the aeration period, or the interval between removing the plastic film and seeding of the tobacco, should be extended up to two weeks to insure that chloropicrin is no longer at toxic levels in the soil. Poor stands of tobacco could result from the residual chloropicrin.

EBW

Fertilization of Tobacco Plant Beds

Avoid excessive fertilization of tobacco plant beds prior to seeding. If fertilizer salts are excessive, germination and stands can be reduced, especially when rainfall is low. Remember that a rate of 50 pounds of fertilizer per 100 square yards of bed area is equivalent to over a ton per acre. Use a fertilizer that has most, if not all, of the nitrogen in the nitrate form. Irrigate well after seeding, and then as needed to keep the bed surface moist. Adequate moisture helps reduce fertilizer injury, but do not water excessively as diseases such as blue mold and damping-off can become more severe. If additional nutrients are needed they can be top-dressed over the beds.

EBW

Avoid Tobacco Mosaic Virus

Tobacco mosaic virus (TMV) became a problem in many areas in 2000. The probability of TMV becoming a problem can be reduced by following good sanitation practices. Do not use tobacco products when handling tobacco plants because the virus can survive in some tobacco products. Clean the mower before clipping plants, and disinfect the mower with a bleach solution after each mowing. If TMV was present in a field in 2000, do not plant that field in tobacco in 2001 because undecomposed plant residue could result in infection of the new crop. Remember that TMV is spread by mechanical means, so touching a diseased plant before handling healthy plants could result in new infections. The NC 297 variety has resistance to TMV and would be a good variety choice if the disease was present in 2000.

EBW

New Touchdown Formulation

Syngenta is the newly formed company combining the crop protection and seeds businesses of Novartis and Zeneca. Syngenta has received registration of the new and Touchdown non-selective herbicide which is crop-safe on all Roundup Ready (RR™) crops.

The new Touchdown has IQ Technology™ and is labeled for over-the-top use in RR cotton, soybeans, and corn in addition to burndown applications. Touchdown 5, its predecessor, was never registered in RR cotton or corn.

The new formulation combines a more efficient glyphosate herbicide molecule with a balanced adjuvant delivery system. The active ingredient in new Touchdown is diammonium glyphosate (DA). Touchdown 5 contains glyphosate trimedium (TMS or sulfosate), while Roundup and generic glyphosates contain glyphosate isopropylamine (IPA).

The Syngenta News Release states that the IQ Technology adjuvant delivery system overcomes four potential barriers to consistent glyphosate weed control. First, it wets the leaf surface and helps retain spray droplets on the leaf. Second, it combats natural antagonism by neutralizing calcium and/or magnesium ions in the spray water or from dust or on the leaf surface. Third, it promotes increased penetration into the leaf without damaging epidermal cells-allowing these cells to actively transport the glyphosate herbicide throughout the weed. Fourth, it enhances translocation through vascular tissue to the weed's shoots, roots, rhizomes, and stolons.

Syngenta advertises that no other adjuvants are needed with the new Touchdown, and the rates of ammonium sulfate (AMS), when used can be reduced by up to 25 percent compared to other glyphosate herbicides. The common use rate for controlling annual weeds is 1 quart per acre. It will be 110-gallon, 30-gallon, and 2.5-gallon containers. Pricing will be comparable to Roundup Ultra Max.

(This information was taken directly from a Registration News Release.)

JAT

Cover Crops for Strip Till Planting

Cover crops take time and are expensive to plant. However, recent research has shown that they can add as much as 30% to the yield of various crops. This can be economical for the next crop, such as with cotton or peanut and is sustainable long term by reducing erosion, adding organic matter, increasing water infiltration, reducing sand blasting problems on new seedlings, and preserving soil tilth. There are many more benefits from cover crops. These covers need to be managed properly. This may mean that a wheat cover has to have a small amount of nitrogen applied in January or early February along with a broadleaf herbicide to kill winter weeds and allow the wheat to head out prior to killing to plant into. This size cover crop will moderate soil temperatures and keep soil moisture higher throughout the growing season of the summer crop. Cover crops should be killed 3-4 weeks ahead of planting to reduce cutworm, rootworm, and other soil insects as well as to conserve soil moisture and allow the cover crop to become brittle for ease of planting.

DLW

Crop Rotations

Bahiagrass in rotation with row crops increases crop yields and profits. Economic models of cropping systems show that it is much more profitable to include bahiagrass in rotation with row crops than conventional cropping systems. Research is underway to verify this under both irrigated and non-irri-

gated conditions. An interactive economics model is being worked on along side this to allow growers to put in their costs and returns for their situation.

DLW

PUBLICATIONS

The following publications have been recently **UPDATED** and are available through EDIS. A PDF file for each publication is also available.

- SSAGR01 Weed Management in Tobacco - 2001
- SSAGR02 Weed Management in Corn - 2001
- SSAGR03 Weed Management in Peanuts - 2001
- SSAGR04 Weed Management in Cotton - 2001
- SSAGR05 Weed Management in Soybeans - 2001
- SSAGR06 Weed Management in Sorghum - 2001
- SSAGR07 Weed Management in Small Grain - 2001
- SSAGR08 Weed Management in Pastures and Rangeland-2001
- SSAGR11 Weed Management in Transgenic, Herbicide-Resistant Soybeans - 2001

- SSAGR12 Florida’s Organo-Auxin Herbicide Rule - 2001
- SSAGR14 Herbicide Prepackage Mixtures - 2001
- SSAGR15 Diagnosing Herbicide Injury - 2001
- SSAGR16 Approximate Herbicide Pricing - 2001
- SSAGR29 Tobacco Varieties for 2001
- SSAGR100 Principles of Weed Management
- SSAGR101 Application Equipment
- SSAGR102 Calibration of herbicide Applicators
- SSAGR103 Trade Name, Active Ingredient and Manufacturer of Some Herbicides
- SSAGR104 Trade Names of Herbicides Containing a Given Active Ingredient
- SSAGR108 Using Herbicides Safely and Herbicide Toxicity
- SSAGR109 Adjuvants
- SSAGR111 Weed Management in Fence Rows and Non-Cropped Areas
- SSAGR112 Poison Control Centers

The following **NEW** publications are available through EDIS. A PDF file for each publication is also available.

- SSAGR88 Annual Ryegrasses

NOVEMBER CROP ESTIMATES

The National Agricultural Statistics Service made the following crop acreage and yield estimates as of November 1:				
Crop	Florida		United States	
	Acreage for Harvest (x1000)	Yield Per Acre	Acreage for Harvest (x1000)	Yield Per Acre
Cotton	92	420 lb	13,519	622 lb
Peanuts	80	2,450 lb	1,395.5	2,667 lb
Sugarcane	454	35 ton	1,026	34.7 ton
Tobacco	4.9	2,450 lb	492.3	2,289 lb
Corn, hay, soybeans, and wheat are no longer estimated for Florida. Cotton is carried over from a previous forecast.				

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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