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Row Spacing and Plant Populations for Corn

Corn is more susceptible to stress than many crops since it has such a short pollination period and that period should be as free of water stress as possible. Many growers are interested in looking at different row spacing and plant population, but should consider what other factors are limiting if irrigated corn is producing only 140-160 bu/A. When yields get into the 190-220 bu/A range on a consistent basis fine tuning the plant population and row spacing can help boost yield. The higher the plant population and the more narrow the row, the more stress that will be encountered for water and nutrients and standability.

DLW

Cotton Variety Selection

A high percentage of the Florida cotton crop will be planted to a single variety in 2005. This variety, DP&L 555 is susceptible to root knot nematode and caution should be taken if cotton is to be grown in fields where serious nematode levels are known to exist. Rotation, recommended nematicides, proper fertilization and water, and more resistant varieties are a way to overcome the effects of high nematode levels in these fields.

DLW

Bermudagrass Establishment -Time of Planting

The improved hybrid bermudagrasses do not produce sufficient seed and must be established from vegetative plant parts. Dug sprigs, consisting of underground rhizomes, plant crowns and stolons can be planted from mid-February through July. Sprigging bermudagrass in mid to late winter before it starts growing (before breaking dormancy) is encouraged. Sprigs dug in early spring after the plants have broken dormancy have lower levels of energy reserves. Energy reserves are needed to initiate and develop new shoots (sprouts). Also, soil moisture is usually more favorable in late winter as compared to spring (April-May). In the spring, when top growth reaches four to six inches, digging and planting of sprigs should be delayed until after the first hay harvest or harvest of tops for planting. Tops (green stems) can be planted in June and July. The grass should be overly mature with six weeks or more of growth when the tops are harvested for planting. (-source Florida Forage Handbook)

CGC

Best Management Practices for Pastures

"On bahiagrass pastures nitrogen is applied in relation to intensity of use, but generally 50 to 60 pounds of nitrogen/acre should be applied in late winter. This time correlates with a period of low to moderate rainfall and nitrogen fertilizer is least likely to be washed into surface waters. It is also the time ranches are most in need of forage. Other perennial grasses may need nitrogen in late winter and at other times through the year based on IFAS recommendations."

"Timing of Nutrient Application: To avoid nutrient losses through runoff, apply fertilizers during times with the least potential for leaching or surface runoff. Refer to the water budget (provided by NRCS) for your county to determine the times when the lowest potential for nutrient losses from rainfall occur. Time nutrient

applications so that they coincide as closely as possible with periods of plant growth and nutrient uptake."

"Optimize Nutrient Uptake: Maintain proper soil pH for optimum utilization of applied nutrients, while preventing toxic effects from other accumulated elements, such as copper. The pH recommendations are published in Univ. of Florida, IFAS Fact Sheet # SL-129."

"Prevent Nutrient movement off-site: Include erosion control practices to minimize soil loss and runoff that can carry dissolved and soil-borne nutrients to surface waters. Filter strips along streams are very effective in reducing the levels of suspended solids and nutrients.

Try to prevent spreading fertilizers in ditches as this is a means of movement off-site. Also, plan fertilizer loading sites away from ditches and canals where spills can contaminate the water."
[Source: Water Quality Best Management Practices for Cow/Calf Operations in Florida; June 1999.]

CGC

Cover Crops for Strip Tillage

Early February is a good time to apply nitrogen fertilizer to cover crops along with 2,4-D to kill winter broadleaf weeds and stimulate small grain or ryegrass cover crops. About 30-40 lbs/A of nitrogen will stimulate grass growth and shade further development of weeds. Grasses without weeds are easier to kill with materials like Roundup 3-4 weeks ahead of planting and result in covers that are 2-3 feet tall to strip till into.

DLW

Dairy Producers - When to Harvest Small Grains for Forage

Forage quality of small grains (oats, wheat, rye, triticale) generally decreases as they mature from the boot to the dough stage. Lignification of the stem tissue (the stem becomes more woody) appears to be the main reason for reduced digestibility of the forage. If the forage is to be fed to high-producing dairy cows, it is suggested that the small grain crop be harvested at the boot-stage when it will have a feed value close to that of top quality alfalfa. Since small grain crops harvested at the dough stage produce the most digestible nutrients and protein per acre, it is recommended that the crop be harvested at the dough stage if the forage is intended for animals that do not require top quality forage.

CGC

Feeding Hay to Horses

Before feeding, inspect hay for dust, mold, or other contaminants. Moldy hay should never be fed to horses as they may develop a respiratory allergy to the hay. The most severe form of this problem is referred to as chronic obstructive pulmonary disease, or heaves. Horses with heaves suffer permanent lung damage. These horses are usually unable to be exercised and thus are not useful for many physical activities.

Symptoms of heaves (coughing, difficulty breathing) may be minimized by controlling dust and mold in a horse's environment. Three common management techniques include good ventilation, soaking hay in water to prevent dust, and using hay cubes instead of long hay as a forage source.

Hay may be fed in racks or tubs, or it may be placed on the ground. Putting hay in a rack or a tub usually reduces waste, especially when groups of horses are fed together. When hay is fed on the ground to a group of horses, 20-40% of the hay may be wasted. Waste will be greater with late-maturity grass hay that is low in palatability. When alfalfa is fed on the ground, leaf loss may be high. This is significant because the leaves contain the most nutrients. When using hayracks or mangers, be sure they allow enough space for all horses in an enclosure to eat comfortably at the same time. If there is inadequate space, some horses will be excluded or injuries may occur as they compete for space. The rack or manger should be placed in a location that allows safe and easy access for horses and humans. Hay racks that tip over easily are unsafe, as are feeding devices that horses can jump into (such as some cattle feeders). Hay feeders must be cleaned regularly to prevent the buildup of material that can mold when wet.

Large round bales may be used for horses under some circumstances. Unless they are placed in a feeder, the amount of waste from a round bale may be relatively high (up to 40%). Large round bales that have been stored under cover are safe to feed if they are mold free. Bales that have been stored outside may be used if the outer, weather damaged layer is first removed. Twine or netting must also be removed. Round bales are most effective for feeding large groups of horses where the hay is consumed rapidly. Round bales that stay in the paddock for several days are likely to become wet and moldy.

When hay is fed in pasture or paddock to several horses at the same time, it is helpful to group horses by physiological state. This will allow the appropriate matching of the nutrient needs of the horses to the amount and quality of forage offered. For example, if a 600-lb idle pony and a 1200-lb pregnant mare are allowed access to the same hay, it is likely that either the pony will be overfed or the pregnant mare will be underfed. In most situations, very high quality alfalfa hay should not be fed free choice. Because it is highly palatable and nutrient dense, free access often results in obesity in horses with moderate to low nutrient requirements (most horses kept for recreational purposes). A better hay choice for these horses would be full bloom alfalfa hay or an alfalfa-grass mix.

Source: "Alfalfa, The high-quality hay for horses". By, Glenn E. Shewmaker, Dan Undersander, Laurie M. Lawrence, Garry D. Lacefield. (Sponsored by) National Alfalfa Alliance. www.alfalfa.org

CGC

Forage Quality Terms and Definitions

Laboratories analyze forages by chemical analyses or near infrared reflectance (NIRS) methods. A forage test typically includes measurements of moisture, crude protein, acid detergent fiber, and total digestible nutrients. Each term is defined below:

Moisture - Hay moisture content is important because the higher the moisture

content, the lower the dry matter and nutrient contents per pound of feed. A high moisture content (above 15%) increases the likelihood of mold damage during storage.

Crude Protein (cp) – Determined by measuring the nitrogen content of the sample and multiplying by 6.25, since protein in forages contains about 16% nitrogen. The general quality of hay is closely associated with crude protein, and both are related to stage of maturity and leafiness.

Acid Detergent Fiber (ADF) – ADF is the percentage of highly indigestible plant material present in the forage. It contains cellulose, lignin, and silica. ADF is a useful predictor of energy and digestibility of forages. Low ADF values mean higher energy value and digestibility, therefore low ADF values are desirable.

Neutral Detergent Fiber (NDF) – NDF represents all of the structural or cell wall material in the forage. NDF is partially available to animals. NDF is closely related to animal intake of the forage: as NDF increases, intake decreases. Like ADF, low NDF values are desirable.

Total Digestible Nutrients (TDN) – TDN represents the total of all digestible nutrients in the forage. It may be the sum of measured quantities or less accurately estimated from ADF.

Source: "Alfalfa, The high-quality hay for horses". By, Glenn E. Shewmaker, Dan Undersander, Laurie M. Lawrence, Garry D. Lacefield. (Sponsored by) National Alfalfa Alliance. www.alfalfa.org

CGC

Grazing Management of Perennial Grasses in Late Winter

Most of our improved perennial pasture grasses need extra attention in late winter and early spring. When warm weather arrives, these grasses need time to grow new roots and rebuild energy reserves in the crown and roots. Allowing the plants to rebuild and attain a healthy condition permits them to better withstand any stress that might come along during the remainder of the growing season.

In some pastures, the grass will have been grazed down to the ground by mid February or earlier. Although bahiagrass can withstand a certain amount of overgrazing, other grasses cannot. When warm weather arrives and the grass starts to regrow, cattle should be removed from these pastures and kept off until the grass has fully recovered.

Floralta and Bigalta Limpograss (hemarthria) are susceptible to overgrazing, especially the Bigalta cultivar. Therefore, cattle should be removed from these pastures once they are grazed down during the winter. Cattle should not be put back in until the regrowth is 14 to 16" tall. Then rotational grazing can be started with cattle being removed when the grass has been grazed to an 8" stubble height.

If grazed close during the winter, Pangola and the other digitgrasses should also be allowed to regrow to a height of 10 to 12". Rotational grazing can then be started with cattle being removed from a pasture (rotated) when the grass has been grazed down to a height of 4 to 6". In mid-summer, these pastures need a minimum of one week and preferably three weeks rest between grazing periods. Three to four weeks of rest

between grazing periods is needed before and after mid-summer.

Allow stargrass to regrow to a height of 10 to 14" and then graze back to a 5" stubble before rotating cattle. If grazing is needed before the desired height is reached, follow the old rule of thumb "take half, leave half."

In general, it is always desirable to have pasture size and cattle numbers adjusted so that a pasture can be grazed off in one week or less.

CGC

Hay Producers - Prepare for the Coming Season

Burn frosted bermudagrass stubble to reduce spittlebug infestation, certain fungal diseases, remove trash and kill early germinating winter weeds. Burning also seems to allow the sun to warm the ground and stimulate growth. Do not burn to soon. Wait until a few green shoots are present, indicating that the bermudagrass is breaking "dormancy". If a hard freeze follows shortly after growth is stimulated, the stand could be damaged. This is especially true for a non-cold tolerant bermuda such as Coastcross - 1. Coastal and other bermudagrasses that have rhizomes have greater cold tolerance and will likely survive a hard freeze.

Study soil tests and consider last years growth. Are there areas in the field where growth appeared to be reduced or where the stand is thinning? Bermudagrass uses a lot of potassium and over time there may be excessive "drawdown" of the potassium in the soil profile if only minimal amounts have been applied. Thinning of the stand is a common symptom of insufficient potassium.

Fertilize the new growth with 80 pounds of N per acre and the soil test recommended amounts of potassium and phosphorus.

Be prepared to control winter weeds in the first growth period if needed. Burning will kill many of the weed seedlings, but a herbicide may be needed to kill weeds that escape the fire or that germinate later. Try to kill these weeds early so that they will have enough time to dry and disintegrate before the first harvest is taken.
CGC

Incorporating Yellow Herbicides: Mechanical vs. Irrigation?

Prowl and Sonalan have been successfully applied preplant incorporated (PPI) for weed control in peanuts for many years. Recently, the labels of these products were changed to allow preemergence (PRE) applications as long as rainfall or irrigation occurred in a timely manner for incorporation. It has been well documented that PPI applications are more effective than PRE applications under dry conditions. However, I have no doubt that PRE applications can be equally as effective as PPI when they are activated by rain or irrigation within a short time period.

The biggest problem with traditional PPI applications is the lack of consistency with the various tillage implements that are used. Some have used incorporation with great success, but others have not. It is very easy to incorporate too deeply. This dilutes the herbicide in the soil and sufficient concentrations will not be present for season long weed control. Using water instead of steel will consistently result in a more uniform incorporation.

Research has shown that there are no differences in weed control or peanut yield in response to incorporation method of

Prowl or Sonalan. An additional benefit of using water instead of tillage to incorporate herbicides is the fact that water is cheaper. The estimated cost of using mechanical incorporation methods ranges between $8.50 and $12.96/A while the estimated cost of applying a herbicide and incorporating with 0.75" of water, using a center-pivot irrigation system, is $6.48/A.

The bottom line, we expect no difference in performance between traditional PPI herbicide applications and PRE applications followed by a timely irrigation (0.5-1.0" of water within 48 hours after application). However, this does not mean that I am against the use of mechanical incorporation. Herbicide incorporation with tillage has served agriculture well over many, many years. The use of water as an incorporation tool simply gives producers more flexibility in their application of these herbicides.

JAF

Peanut Inoculants

Being a legume, peanuts that are well-nodulated generally have adequate nitrogen available for vine growth and pod production and thus no fertilizer nitrogen is needed. The nitrogen is supplied by the symbiotic relationship between the plant and the bacteria in the nodules that can convert atmospheric nitrogen into a form usable by the plant. These bacteria normally survive in the soil over a number of years after well-nodulated plants have grown in the field. The strain of bacteria that can nodulate peanuts, is also effective in nodulating a number of other legume plants, such as cowpeas, Florida beggarweed, alyce-clover, hairy indigo, and others. Consequently there may be an adequate population of bacteria in the soil to cause nodulation and nitrogen fixation by the peanuts and there would be no response to artificial inoculation. On the other hand if peanuts or other appropriate legumes have not grown on the field in recent years, it would be well to consider the use of added inoculants at planting. Cleared timber land areas or grass pastures that have a dense sod and are to be planted to peanuts would be likely candidates for use of artificial inoculants. A native legume, partridge pea, may be present in wooded areas, but plants are usually scattered, which would result in a similar pattern of nodulated peanuts if only natural inoculation is available.

There are three methods of artificially inoculating peanuts with the nitrogen-fixing bacteria, with the cost of the inoculant being about $10 or less per acre for any of the them. The most simple method is sprinkling a peat-based powder inoculant on the seed at or just before planting. While this method is most common with soybeans and forage legumes where the seed and inoculant can be vigorously mixed, peanut seed are somewhat fragile requiring very gentle, if any, mixing. Also peanut seed usually have a fungicide applied to them by the seed company and mixing the treated seed with an inoculant could result in decreased protection from diseases. The powder inoculant is usually sprinkled over the peanut seed in several layers when it is being placed in the seed hoppers on the planter. Bulk seed handlers may have mechanical inoculators that would reduce the time required to inoculate seed. Getting uniform application of the inoculant on the seed is imperative.

The second method of applying inoculants would be to use a granular formulation that is placed in the seed furrow with a granule applicator at planting. Since it is likely that a set of granule applicators would be used to apply the insecticide Thimet, a second set of

granule applicators would have to be installed on the planting equipment. Granular inoculants should not be mixed with other granules because they contain moisture and probably would not be of comparable size to other granules, which would make it impossible to calibrate for uniform application of either granule.

Liquid inoculants are the third formulation that could be used. To apply the liquid material, an adapted sprayer, anhydrous ammonia applicator, or other suitable equipment to apply a liquid directly into the seed furrow would be needed. After the application equipment has been installed and calibrated, the liquid would probably require less labor during application than the other formulations. It is difficult and usually futile to apply the inoculant after planting.

If for some reason the peanuts are not nodulated, the foliage will be yellow and vine growth retarded, which are simply symptoms of nitrogen deficiency. To relieve these symptoms, a broadcast application of a nitrogen fertilizer, such as ammonium nitrate would be effective. Observations indicate that about 50 pounds of nitrogen per acre would restore the green color and stimulate vine growth.

EBW

Tobacco Contracts

The Flue-Cured Tobacco Stabilization Coop is offering exclusive as well as non-exclusive agreements to growers. The exclusive contract requires that the grower sell all of his tobacco through a marketing center operated by the cooperative. The non-exclusive contract would permit the grower to sell tobacco that may be refused or production that is in excess of the primary contract with the companies. By participating in the cooperative's programs, the grower is assured of continued membership in the organization. Further information on the Stabilization plans can be found at their web site.

EBW

Lime Applications to Row Crop Land

If lime has not been applied to row crop land prior to this time of the year, apply in needed amounts to allow it to start reacting with the soil for crops to be planted later in the spring. Many other nutrients have better uptake by the crop when the pH is in the 5.8 to 6.2 range.

DLW

Nitrogen Supplies

From all indications, nitrogen may be in short supply and cost more than in previous seasons. High natural gas prices and competition have resulted in higher nitrogen prices and hauling costs are higher too. Many fertilizer suppliers have waited for nitrogen prices to come down before filling tanks and warehouses. It would be a good idea to ensure that you have adequate nitrogen supplies for your crops early this year.

DLW

Report of 2004 Agronomic Crop Production

The USDA's National Agricultural Statistics Service released the following estimates of crop production in 2004:

	Harvested Acres (X1000)		Yield per Acre	
Crop	Florida	United States	Florida	United States
Corn for grain	32	73,632	90 bu	160.4 bu
Corn for silage	33	6,103	17 ton	17.6 ton
Cotton, all	87	13,057	524 lb	846 lb
Hay, all	260	61,916	2.5 ton	2.55 ton
Peanuts	130	1,394	2800 lb	3057 lb
Soybeans	17	73,958	34 bu	42.5 bu
Sugarcane for sugar and seed	420	952.1	33.9 ton	30.8 ton
Tobacco, flue-cured	4	233.4	2450 lb	2261 lb
Wheat, all	15	49,999	45 bu	43.2 bu

The national corn, rice, soybean, and cotton estimates indicate that production and yield records were established. Corn production was 17 percent above the previous record established in 2003, while yields were 18.2 bushels higher than the 2003 record. Rice production was 15 percent above last year and new yield records have been set in each of the last five years. Soybean production was 28 percent above 2003 and yields were 8.6 bushels greater. Cotton production was 26 percent above 2003, and yields were 116 pounds greater.

EBW

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