

Agronomy Notes

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Cotton Price and Rotation

Cotton price has been low as compared to the price of corn/soybean/ and peanut the last couple of years. This fact will make rotations critical for high yields in the coming years. Typically, only one legume is desired in a row crop rotation. Either peanut or soybean should be rotated with cotton, corn, or other grasses. However, with cotton prices being low, fertilizer prices being high and soybean prices at highs of the last 3 decades, there is sure to be more soybeans grown in 2009. Yields drop very quickly for soybeans when proper rotations are not followed. Soybeans do the best on heavy soils while peanuts do very well on sandy soils. Cotton can do well on sandy soils with adequate water while corn needs both high amounts of water and fertility for high yields. Choose fields and rotations wisely for 2009 while thinking about future cropping options.

Dr. David Wright, Extension Agronomist



Photo: Tyler Jones
UF IFAS Communications

Cover Crop Value to Cotton

Conservation tillage has become an accepted practice for all row crops. Research has confirmed that yields can be increased by an average of 10% from cover crops vs. fallow or bare ground. Much of this has to do with moisture and temperature impacts on cotton during the growing season.

Research confirms: Yields can be increased by an average of 10% from cover crops

Recent research has shown the value of cattle grazing winter annuals prior to planting cotton. Two years of research comparing oat and rye mixtures as winter grazing shows that lint yields for cotton are increased by 175-300 lbs/A when cattle are grazed vs. not grazed and then cotton planted. Even though there is some surface compaction of soil by cattle during the winter in the grazed areas as compared to the ungrazed areas, there is an advantage in more nitrogen being available to the cotton from

manure which shows up in petiole and leaf samples throughout the season. Grazed areas also have higher soil moisture content deep in the soil profile than ungrazed areas leading to less plant stress even though cotton is strip tilled into killed cool season winter forage in both areas.

Utilization of winter annuals by livestock is an example of how land can be utilized year round with benefit both to the following cotton crop and can provide a source of income so that the cover crop pays for itself and perhaps adds profit to the farming operation through cattle sales. This is a decision that has to be made ahead of time if temporary fencing and water are to be made available for livestock in areas that have not had fences for years.

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Soil Testing for Forage Production

Supplying adequate soil fertility and the correct pH to your forages is one of the keys to a successful forage production. If you are a hay producer, plant annual forage crops every year, or overseed in winter time, then you need to soil test every year. If your operation is based on perennial forages, you could do so less frequently. One of the first action to get ready for the upcoming season in terms of fertilizer needs should be to have your soil tested. Now more than ever, a soil test will save you money because it will indicate those nutrients that are in your soil in sufficient amounts. Soil testing followed by the proper fertilization, is one of the practices that will possibly have the most long-term effect on your forage production per acre. There is no other way to find out the status of your soil nutrients but to soil test. Keep in mind that the recommendations coming back from the soil test report are based on efficient fertilizer use and environmentally sound nutrient management without losses of yield or crop quality. Use these months prior to spring time to test your soil and correct soil pH if necessary; acidic soil condition is a tendency for many Florida soils. If lime is needed it will be indicated on your soil report. If needing assistance on how to collect a sample, contact your county agent. You will find a listing of all county extension offices at the following link:

<http://agronomy.ifas.ufl.edu/ForagesofFlorida/counties.php>

Yoana Newman, Extension Forage Specialist

Hay and Haylage Use

With the recent frost experienced in most of Florida and while cool-season forages are still becoming established, there is not much forage available. During this time, hay and haylage can provide forage of the quality required to support many different types of livestock. Both hay and haylage, are means of forage preservation, and these products can be used to supplement livestock when pastures are insufficient or in poor condition. Despite both being forms of conserved forage, they are not technically the same. Hay (squares or round bales) is baled when the forage has less than 18% moisture and this forage conservation method renders a dry product that is biologically stable. In the case of hay production, the hay is left on the field to dry naturally for a couple of days (forage dries under exposure to air or aerobic conditions). When baled at the right maturity and with a moisture content of approximately 18% or less, it is a fine product that can meet the nutritional requirements of many classes of livestock.

Haylage or grass silage, is a conservation method that occurs in anaerobic conditions (absence of air, technically is absence of oxygen), which requires wrapping the bale or chopped material to minimize exposure to oxygen while the moisture content is still high (50-65%). The product is a 'fermented' forage that is preserved by the acid produced by anaerobic microbes and a resultant drop in pH.

Both hay and haylage are safe to feed to livestock; however, either can result in a poor quality product if proper conservation practices are not followed. In the case of hay, if it is baled too wet, it will develop mold and spoil. Cattle, being less sensitive to mold than horses, may consume moldy hay without serious consequences; however, for horses this type of hay should be avoided because the problems can be more severe.

In the case of haylage, if the material put into the bag is of poor quality or too wet then a spoilage phase may follow the normal fermentation. Spoilage-phase products make the haylage unpalatable and they can be dangerous, especially to horses.

Thus, poor techniques of forage conservation will result in a product of low quality or in rare cases ones that can negatively impact animal health. When managed properly, both hay and haylage are excellent sources of feed for your animals during times of shortage of fresh pasture.

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Pre-Harvest Intervals, Tolerances and Residues

The United States has the safest and most abundant food supply in the world. A major reason why it is the safest is that pre-harvest intervals are established and listed directly on pesticide product labels. The pre-harvest

interval refers to the minimum time that must elapse from application to harvest, usually expressed in days (*see chart on the left.*) Whenever pesticides are applied, their residues will remain on treated surfaces for a time. The chemical properties, frequency of application, rate applied, and environmental factors determine how much residue will be present.

| Crop | Minimum Time from Application to Harvest (PHI)(Days) |
|--|--|
| Apples | 25 |
| Apricots ¹ | 300 |
| Cherries ¹ | 300 |
| Citrus | 7 |
| Cranberries ² | 21 |
| Grapes | 7 |
| Nectarines | 7 |
| Peaches | 7 |
| Pears (including oriental) | 7 |
| Pistachio | 7 |
| Plums | 7 |
| Prunes | 7 |
| Tree Nut Group (Almond, Beech, Brazil, Butternut, Cashew, Chestnut, Chinquapin, Filbert, Hickory, Macadamia, Pecan, Black Walnut and English Walnut) | 7 |

Residues are important in certain circumstances and necessary for some types of pest control where their presence provides continuous control.

Herbicides applied where crop rotation is not a factor or in areas where total long-term weed control is desired, such as fence-rows and adjacent to buildings, are examples of this phenomenon. Protecting structural foundations from termites is another desirable feature of pesticide residues. However, residues are undesirable when they expose people, domestic animals, or wildlife to unsafe levels of pesticides. Acceptable levels of

residues for any pesticide are known as its tolerance and set by government agencies. The tolerance is the maximum amount of a pesticide that may remain on or in raw agricultural commodities. Research is conducted using laboratory and animal tests to establish tolerances. From this research, amounts of pesticides which remain are determined to be harmless to consumers. A conservative margin of safety is included in tolerance levels when established by the Environmental Protection Agency (EPA). Each pesticide that is registered for a food use must have an established tolerance, and their levels will vary depending upon the pesticide's mode of action, toxicity and all uses of the pesticide. In establishing the tolerance of a pesticide, researchers consider the total diet of the consumer and their nonfood exposure over a lifetime of 70 years. State and federal agencies monitor produce to ensure that growers do not exceed pesticide residue tolerances. Any produce that is found to exceed a tolerance is seized.

This past month, a strange occurrence that FDACS investigated was brought to our attention. An inspection of a Florida commercial agricultural production facility revealed illegal residues of dieldrin in pumpkins. Dieldrin, an organochlorine insecticide, was first patented in 1948. However, all uses were cancelled in 1986 due to its long-term persistence. A similar regulatory fate occurred with other organochlorines, including DDT, aldrin, chlordane, heptachlor, and endrin.

Although the recent dieldrin incident described is very unusual fortunately, but occasionally, pesticides can be erroneous present due to:

- ◇ The crop absorbing pesticides that were applied to the site previously;
- ◇ A grower applying pesticides to an unregistered crop;
- ◇ A grower applying a rate of pesticide that exceeds the label recommendations;
- ◇ The pesticide is applied too close to the crop's harvest; or
- ◇ Drift of a pesticide from another site.

The pumpkin producer will no doubt face strict legal sanctions for those decisions and actions with dieldrin use. Although that incident is a blatant misuse, simply checking product labels and obeying pre-harvest intervals listed can save expense, both in legal fees and from having a crop embargoed.

Control of Woody Brush



Basal oil mixed with herbicide is being applied directly to the bark of the standing tree.

Photo: J. Ferrell

The coming of winter is often seen as a time to suspend weed control efforts. However, these months are ideal for performing some much needed brush control.

Persimmon, cherry, Chinese tallow and other “weedy” trees can often be found growing along fencerows. A foliar application of glyphosate (5 to 8% solution) made prior to leaf color change can be effective, but total coverage can be difficult and retreatment will often be necessary.

Another procedure that is effective and more consistent than foliar application is basal treatment. Basal application combines the herbicide with basal oil (not water) and applies the mixture directly to the bark of a standing tree (*see photo.*) This procedure results in rapid uptake and loads a great deal of herbicide into the plant. However, it is important to use a basal oil/herbicide mix; a herbicide/water solution will simply not work.

The basal application technique is for trees that are less than 6-inches in diameter and have smooth bark. It is important that the lower 12 to 18 inches of the stem be treated on all sides with the herbicide/oil mixture.

Adequate coverage is essential, since treating only one side of the stem will result in controlling only half of the tree. Basal applications can be

made any time of the year, but are most effective during the dormant season when leaves are not present.

It must be noted that basal applications will not provide rapid control. Herbicide injury is often not observed for several weeks after treatment and total control may require several months. Additionally, basal treatment is not effective on older trees with thick bark. For older trees, other application techniques should be employed.

Herbicides that work best for basal application are triclopyr ester (Remedy, Garlon 4, Tahoe 4) and Stalker. A triclopyr product should be mixed with basal oil to form a 25% solution (1 quart of herbicide in 3 quarts of oil). This product is highly effective on most all woody brush, including Chinese privet. Stalker is a more potent herbicide and only requires the addition of 8 to 12 oz of herbicide per gallon of basal oil.

For more information on brush control, please reference *Herbicide Application Techniques for Woody Plant Control*, <http://edis.ifas.ufl.edu/AG245>.

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Large Differences in Nitrogen Prices

Nitrogen prices vary from about 55 cents/lb of N to as much as 80 depending on the source. Urea prices have dropped from the season high at a faster rate than ammonium nitrate.

Consider using some ammonium sulfate to get about 30 lbs/A of S along with urea to get the required N rate for small grains. Ammonium sulfate is about 21% N and 23% S, therefore, all of the N should not come from this source due to its acidifying effects. Small grain for grain will need N at planting followed by 75-90 lbs/A in late January for top grain yields. Winter grazing planted in October or early November should have split nitrogen applications such as 20-30 lbs/A at plant followed by another 40-50 lbs/A in January to stimulate growth. Applications every 6-8 weeks of 40-50 lbs N/A keeps winter annuals growing well without exposing large amounts of fertilizer to leaching.

Herbicides may be applied with liquid nitrogen (28-0-0-5) to control most broadleaf weeds. Liquid N is typically the cheapest form of N but was higher during 2008. If clovers are present in the winter grazing, broadleaf herbicides should not be used. Check prices for Nitrogen when needed each time since the price has been changing rapidly depending on the source.

Dr. David Wright, Extension Agronomist

Oil Crops

Several growers have been experimenting with growing crops to produce some of their own biodiesel for farm use. There are certain strategies that can work well when double cropping while still maintaining good rotations. If certain acreage is dedicated to oil crops consider canola followed by sunflowers followed by small grain followed by either peanut or soybean. Oil content of these crops varies widely as well as the value of the meal. This rotation works well getting as many as 3 oil crops in 2 years. If the oil crops are used for oil, check to see where they can be crushed and the amount of oil that can be expected along with value of the byproducts and the cost of production. Equipment has to be set up differently for different crops when extracting oil.

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Calendar

Dec. 3-4

National Organic Standards Training

Quincy, FL North Florida REC; contact: (352) 273-3508 jsefton@ufl.edu

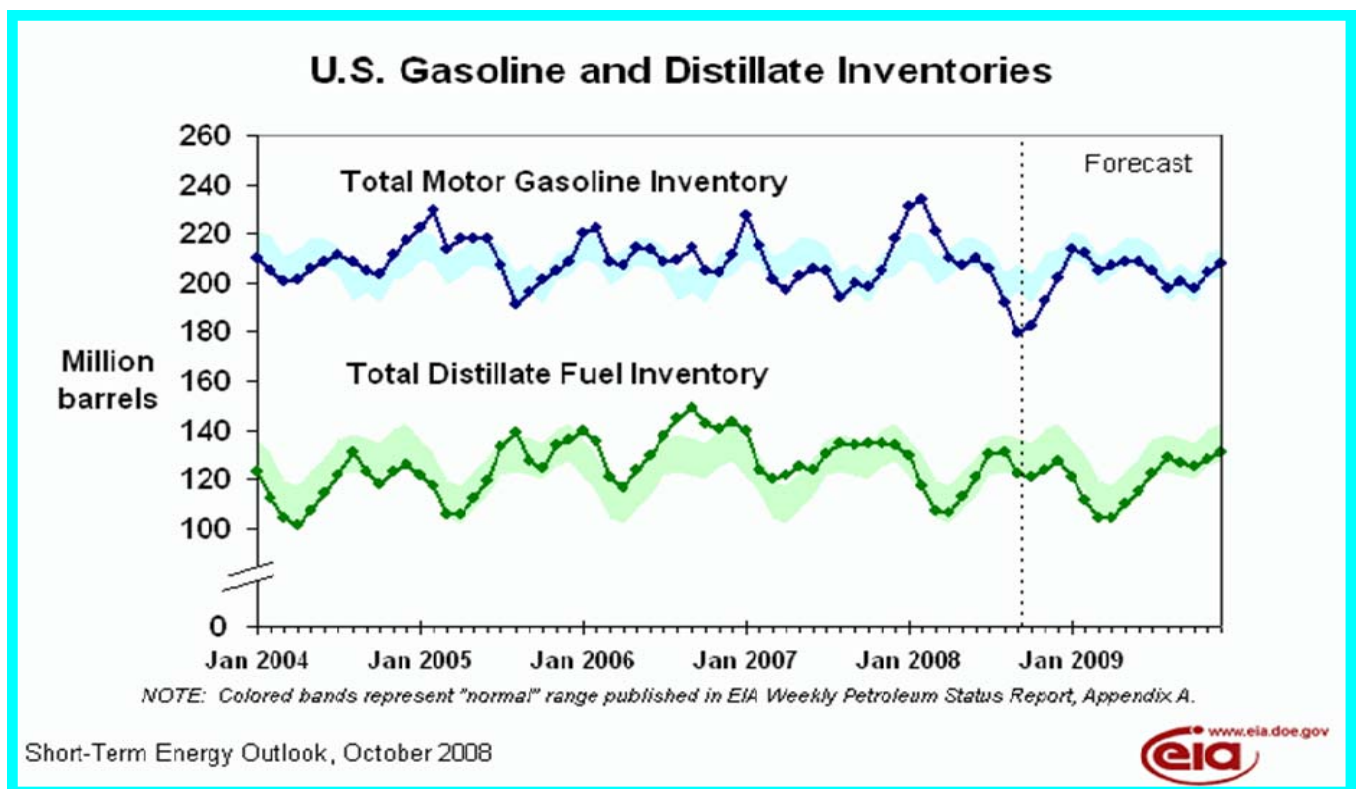
Jan. 15

2009 Florida Cattleman's Institute and Allied Trade Show
Kissimmee, FL

Fuel Prices Projections—Encouraging News

Forage and hay producers, amid all the uncertainty with the economy, here are some cheering news on the fuel prices projections in what remains of 2008 and 2009.

The Energy Information Administration, EIA, anticipates that regular-grade gasoline prices will average \$3.56/gal in both 2008 and 2009. In the October update, EIA projected total U.S. gasoline inventories at 180 million barrels, 23 million barrels below the five-year average and the lowest since August 1967. Next year, EIA expects inventories will recover to 205 million barrels, about four million barrels below the previous five-year average. The change will be due to continued weakness in motor gasoline markets and growth in domestic fuel ethanol production. EIA also projects that on-highway diesel fuel retail prices will average \$3.91/gal in 2009, down from a projected \$4.01/gal this year. Full report on www.eia.doe.gov/emeu/steo/pub/contents.html



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