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“Agronomy Notes” is prepared by R. Gilbert, Chair. Produced by F. Fishel and L. Kubitz, Pesticide Information Office. Contributors include J. Ferrell, Extension Weed Specialist; F. Fishel, Director, Pesticide Information Office; R. Leon, Extension Weed Specialist; B. Sellers, Extension Weed Specialist; M. Durham, Extension Weed Specialist; H. Smith, Extension Weed Specialist; D. Wright, Extension Crop Specialist; and J. Dubeus, Forage Management Specialist. 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.
Poisonous Plant Watch

There are dozens of poisonous plants that infest pastures. Most of these species are native to Florida and they are present for a majority of the grazing season. However, late summer and early fall is when animal poisoning most often occurs.

The most common poisonous plants in pastures are sicklepod, coffee senna, and showy crotalaria. As stated previously, these species are most problematic in the fall. One reason for this is animals rarely browse these species when grass is abundant and succulent. But in the fall, bahiagrass leaf production has greatly slowed while seedhead production dominates. With the decline in available forage, animals will begin to experiment on the other plants present. Additionally, toxins most commonly accumulate in seeds with a much lower concentration in the leaves and stems. It is possible that some animals browse these poisonous plants all season with minimal ill effect. However, with the days becoming shorter and seed production proliferating, casual browsing of seed pods can quickly impact animal health.

As we draw nearer to frost, the presence of these poisonous plants becomes even more important. The coffee weeds, for example, are much more tolerant to frost than bahiagrass. A light frost can turn bahiagrass totally brown while these plants remain unaffected. This rapid and dramatic reduction in available forage can turn almost any animal onto poisonous plants.

If coffeeweeds, crotalarias, and other known poisonous species are present in your pastures, develop a management plan for them now. This can consist of spraying a herbicide or simply mowing. If you suspect animal poisoning, the most common signs are dark urine, listlessness, and weight loss. If these signs are present, contact a veterinarian.
Control of Common Bermudagrass With Fusilade and Select

Common bermudagrass (Cynodon dactylon) is a mat-forming perennial that can be found just about anywhere in the southeastern US – from roadsides to production fields. This weed is very well adapted to the South and persists in areas with a variety of soil textures, soil pH, and fertility levels. Although common bermudagrass can be beneficial in many environments, it can make peanut harvest difficult, if not impossible. This makes control of common bermudagrass a priority for any peanut producer. Being a perennial, this plant stores a tremendous amount of energy in the stolons (above ground stems) and rhizomes (below ground stems), making it capable of regrowth after most herbicide applications. Previous research has shown that a single application of most herbicides, even high rates of glyphosate, will not sufficiently control this weed. Considering that peanut producers must rely on either fluazifop (Fusilade® DX) or clethodim (Select® 2 EC), in-season control of common bermudagrass can be exceedingly difficult. With this in mind, we conducted a trial examining how these herbicides could be used to maximize control of common bermudagrass. Experiments were conducted in a neglected pasture with a solid stand of common bermudagrass. No peanuts were planted and no tillage was performed. This was done to maximize weed competitiveness. Therefore, the results presented below could be considered a “worst case scenario”. Fusilade® DX at 12 fl.oz./A (fluazifop 2 lb ai/gal) was compared to Select® 2EC at 16 fl.oz./A (clethodim 2 lb ai/gal). Applications began on May 21 and a second application was made either 14 or 28 days later. Crop oil (1 gal per 100 gal) was mixed with all herbicides. The sprayer was calibrated to 20 gallons per acre to ensure adequate spray coverage. Plots were evaluated at 1 week intervals to determine herbicide performance.

For the first 4 weeks after application, the Fusilade and Select applications looked very similar. Neither herbicide provided 100% brown-out of the common bermudagrass, but both provided over 90% control. However, by week 5, control from the single application of either product began to rapidly decline and control was 0% by 10 weeks (Table 1). As expected, one application of either herbicide was not sufficient to provide season-long control and neither herbicide performed differently than the other. However, when repeat applications were made, control was significantly better. At 7 weeks after application, the repeat applications were providing greater than 90% control for both products. By 10 weeks after application, separation between Fusilade and Select became clear. At 10 weeks, two applications of Fusilade was providing 64-74% control, while two applications of Select ranged between 32-35% control. Interestingly, no differences were observed with the repeat applications, regardless if they were applied 14 or 28 days apart. This indicates that the repeat application, not the timing, is the essential part of common bermudagrass control. However, it has been my experience that waiting too late on the followup treatment can reduce control. If the second application is delayed until the bermudagrass is back to 100% green, control will follow the same pattern of a single application.

Though Fusilade provided good control of common bermudagrass, some would say that 64-74% control is marginal at best. In that case, additional applications could be made. The Fusilade® DX label allows up to 48 oz/A/yr to be applied, as long as the last application doesn’t occur within 40 days of harvest. Additionally, other research showed that applying Fusilade with the fungicides Abound®, Headline®, or Bravo Weather Stik®, did not decrease control of common bermudagrass. Therefore, Fusilade could be tank-mixed with fungicides allowing growers the efficiency of combining their fungicide and herbicide sprays. However, a note of precaution is needed. Growers should note that though Fusilade is highly effective on perennial grass weeds (common bermudagrass, johnsongrass, etc), it can struggle with certain annual grasses (crabgrass, goosegrass, etc) if they get too big prior to application. The Fusilade® DX label suggests a 12 oz/A rate for crabgrass that is 1-2” in height while the Select® 2EC label suggest 6-8 oz/A on 2-6” crabgrass. This should be a consideration if you plan to use Fusilade in your peanut weed control programs.

<p>| Table 1. Control of common bermudagrass with Fusilade and Select. |</p>
<table>
<thead>
<tr>
<th>Rate Oz/Acre</th>
<th>treatment interval</th>
<th>Common bermudagrass control %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 weeks</td>
<td>7 weeks</td>
</tr>
<tr>
<td>Fusilade</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>Fusilade fb</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Fusilade</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>Select</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
<td>Select fb Select</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Select fb Select</td>
<td>16</td>
<td>28</td>
</tr>
</tbody>
</table>

*Letters indicate statistical significance. Treatment means followed by the same letter are not statistically different.*
Defending Your Pasture Against Weeds

A pasture is a complex ecosystem with dozens of plant species all vying for survival. But for the producer, we only want one species to win – the desirable grass that will be used for grazing or hay. Fortunately, there are several interventions that can be used to stack the odds in our favor.

Bahiagrass and improved bermudagrasses are extremely competitive and will out-compete most weeds if given proper soil fertility and moisture conditions. However, when fertility or pH begins to slide, the grass becomes weak and weeds become established. So now is the perfect time to check fertility and soil pH.

Currently, cattle prices are good and investment into the pastures will pay dividends for many years. Adding dolomite to improve pH, potassium for improved winter hardiness, and minor elements for long-term persistence can all go a long way to combatting weeds invasions. However, if weeds are currently established, improving soil fertility alone will likely not be sufficient. Selecting a herbicide to control existing weeds, followed by improved soil fertility, can convert a mediocre pasture into one that is highly productive.
Carinata As An Oilseed Biofuel Crop

Carinata is a promising oilseed biofuel crop for the southeast. Recent research in cooperation with Agrisoma BioSciences and other partners has resulted in finding potential for carinata, also known as Ethiopian mustard, as a biofuels crop for the Southeast. We have evaluated cultivars and done management studies that have shown the potential for the winter crop as a previous crop to summer crops typically grown in the Deep South. Our initial goal was to find varieties and management that would produce 200 gallons of oil/A. With best cultivars and management we have been able to produce over 300 gallons of oil per acre making it competitive with $75-80/barrel petroleum oil without subsidies. As of November 2014, about 3500 acres of carinata was contracted in Florida and South Georgia to meet needs of oil for a Department of Navy contract. Best management practices that are known to this point are available on line through a carinata production guide in EDIS.

Products from carinata include seed, oil, and meal that is fed as a high protein supplement to livestock. Current feeding trials are underway at the University of Florida NFREC in Marianna, FL.

Value Of Small Grain In Farming Systems

Small grain (wheat, oats, rye, triticale) all remain an important part of the livestock industry in the deep south. Oats, rye and triticale are used for cover crops and grazing while wheat is grown for the grain market in most areas and some is grazed and then allowed to seed out for grain with reduced yields. Recent research in the “sodbased” system has shown that cotton yields can be increased by 200-400 lbs lint/A following winter grazing with a reduction in N rates of 30-60 lbs/A. Likewise, both cotton and peanut root systems were almost doubled over the non-grazed areas. This led to less irrigation of 50-70%. Cattle and row crop producers can work together to plant small grains after cotton and peanut harvest and graze this mix until mid April when cattle can be removed to kill out the cover crop so that crops can be planted timely. Calf weights have been shown to be increased by 50-100 lbs per calf on row crop as compared to calves on traditional pasture land since this is usually the most fertile part of the farm so that both the row crop farmer and the cattleman can expect more profit.
Cool-season forages are an important option to increase livestock production. In Florida, warm-season perennial grasses are the backbone of the livestock production systems. Bahiagrass and bermudagrass are the predominant warm-season grasses planted in Florida. They provide support for the cattle during the warm-season, but both grasses become dormant during the cool-season. Animal performance often observed on bahiagrass in Florida ranges from 100 to 300 lbs./acre depending on the fertilization level and grazing management. Productivity on bermudagrass can be greater than the ones observed in bahiagrass, as long as fertilizer and grazing management practices are observed. If cool-season forages are overseeded on these dormant pastures, at least additional 300 lbs./acre can be obtained in the same area.

Alternative feed usually utilized by livestock producers for the cool-season include conserved forages of hay or haylage. According to Agricultural Marketing Service from USDA, current prices of bahiagrass hay as Dec. 4, 2014 range from $73 for bahiagrass up to $93 per ton for bermudagrass, for the large round bale (http://www.ams.usda.gov/mnreports/mg_gr310.txt). Researchers estimate that the cost of cool-season forages varies with level of forage production and forage utilization by animals. Assuming productivity of 6,000 lbs./acre of dry matter and 65% of utilization, the average cost of the cool-season forage would be approximately $52 per ton. With a lower cost, it is possible to obtain a greater cattle gain on the cool-season forages compared to the gains obtained on bahiagrass or bermudagrass hays. Average daily gain of 2.1 lbs./day over 112 d grazing season was observed by forage management specialists on steers grazing cool-season pastures of small grains/annual ryegrass pastures, resulting on 300 lbs./acre. Considering the current price of feeder steers (avg. $2.70/lb. for a 500 lb. steer), an additional gross income of $810 per acre could be obtained. This additional income is enough to cover the variable and fixed costs of a cool-season forage, which is approximately $300/acre.

Investment on cool-season forages for grazing will get return as cattle gain. With current livestock prices, it is worth to invest on forage management and improve cattle performance. The profit will pay the investment and increase overall profitability of the cattle enterprise.
**Fenamiphos Update**

The U.S. Environmental Protection Agency (EPA) is registering a new active ingredient, fluensulfone, a non-fumigant nematicide that provides lower-risk chemical control of nematodes than methyl bromide and other restricted-use soil fumigants. Under the Montreal Protocol, the EPA has phased out methyl bromide because its use depletes the ozone layer.

All soil fumigants are Restricted Use Pesticides, which may pose a greater risk to human health than fluensulfone. Restricted Use Pesticides require special applicator training and certification, reporting and record-keeping, and additional restrictive labeling to protect against human exposure. Soil fumigants can be labor intensive, requiring tarping and posting of fields.

With its evaluation, EPA confirms that when used in accordance with the newly approved label, fluensulfone meets the safety requirements in the law.

**EPA Launches New Program to Reduce Pesticide Drift**

EPA is announcing a new voluntary Drift Reduction Technology (DRT) program to encourage the use of verified, safer pesticide spray products to reduce exposure and pesticide movement while saving growers money in pesticide loss.

“Every year state and local agencies receive thousands of complaints about the impacts of pesticide drift on people, wildlife, and plants,” said Jim Jones, assistant administrator for the Office of Chemical Safety and Pollution Prevention. “Our new star-rating system of products and technologies will help farmers reduce drift, protect neighbors, and reduce costs by keeping more of the pesticide on the crop. We hope the new voluntary DRT will encourage the manufacture, marketing, and use of safer spray technology and equipment scientifically proven to reduce pesticide drift.”

Approximately 1 to 10% of agricultural pesticide sprays drift or move from the intended target crop. Every year about 70 million pounds of pesticides valued up to $640 million are lost to pesticide drift. And, FDACS use substantial resources each year investigating drift complaints. Farmers have long been concerned about reducing pesticide product loss during and after application to crops and minimizing drift to neighbors.

DRT is a voluntary program that encourages manufacturers to test their technologies (such as nozzles, spray shields, and drift-reduction chemicals) for drift reduction potential. EPA encourages pesticide manufacturers to label their products for use with DRT technologies. The four DRT ratings represented by one, two, three, or four stars are awarded for technologies that demonstrate at least 25% reduction in potential spray drift compared to the standard.

Spray technology manufacturers interested in participating in EPA’s DRT program may now submit data verifying their technology reduces pesticide movement. EPA will evaluate each data submission and, if appropriate, assign a drift-reduction star rating to the product based on its ability to reduce spray drift. EPA will post these ratings at: [http://www2.epa.gov/reducing-pesticide-drift](http://www2.epa.gov/reducing-pesticide-drift).

A pesticide manufacturer can choose to label a product for use with a DRT of a particular rating after receiving approval from EPA. Over time, the program will move the agricultural sector toward the widespread use of low-drift technologies. Drift-reduction ratings could appear on pesticide labels as early as fall 2015. Additional information on EPA’s DRT program, including how to test technologies, is available at: [http://www2.epa.gov/reducing-pesticide-drift](http://www2.epa.gov/reducing-pesticide-drift).
Calendar of Events

To follow the link, press “Ctrl” and put cursor over link, and “click.”

Feb 1-3, 2015
American Society of Agronomy - Southern Regional Branch
Atlanta, GA
https://www.agronomy.org/membership/branches/southern

Feb 9-12, 2015
Weed Science Society of America Annual Meeting
Lexington, Kentucky
http://www.wssa.net

Feb 25, 2015
CEU Day
Available via Polycom at various locations throughout Florida
http://pested.ifas.ufl.edu/