Weed Control

Establishment and Maintenance

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Weeds in pastures and rangeland cost ranchers in excess of $180 million annually in Florida by reducing forage yield, lowering forage quality, and causing animal injury through toxicity or specialized plant organs (thorns and spines). Effective weed management begins with a healthy pasture. Weeds are seldom a serious problem in a well managed, vigorously growing pasture. Good pasture management involves the proper choice of the forage species and variety, an adequate fertility program, controlled grazing management, and pest management (weeds, insects, and diseases).

Weed Control at Forage Grass Establishment

Weed control operations should begin in any forage system at establishment. This can be achieved by cultural practices that will aid in the establishment of the forage grass. This includes checking soil pH and by applying the correct ratios of nitrogen, phosphorous, and potassium for the forage. This will ensure that the forage can be the most competitive with weeds. It is also important that the forage is planted into a *clean* seedbed. In most cases, all vegetation in the pasture must be controlled followed by repeated tillage to destroy newly germinating seedlings. In some cases, it may be necessary to apply either pre- or post-emergence herbicides.

Bahiagrass

Bahiagrass is perhaps one of the hardest forage grasses in Florida when it comes to early weed control. Furthermore, bahiagrass is very slow to germinate and complete groundcover takes several months, depending on growing conditions. No pre-emergence herbicides are currently available for bahiagrass establishment. Therefore, post-emergence herbicides are the only option. However, no herbicides for pastures should be applied to bahiagrass until at least three tillers are present or plants are at least five inches tall. At that point in time, it can be assumed that all post-emergence herbicides labeled for bahiagrass are safe to apply.

Bermudagrass

Bermudagrass forage grasses in Florida are all sprigged as there are no recommended seeded varieties for the state. There are pre-emergence options: 2,4-D, WeedMaster, and diuron. 2,4-D at 1.0 to 2.0 qt/acre or 2 pt/acre of WeedMaster should be applied after sprigging and before weeds emerge. These herbicides will suppress annual sedges as well as some broadleaf and grass weeds. Diuron at 1.5 to 4.5 pt/acre is used primarily to control crabgrass. The same rates of 2,4-D and WeedMaster can be utilized as post-emergence treatments, but spray approximately seven days after sprigging to ensure that sedges are not too big for suppression/control.

Stargrass

Stargrasses are established by sprigging only. Diuron is not labeled for stargrass. Therefore, 2,4-D and WeedMaster are the only pre- and post-emergence options. Use the same application rates as those described for bermudagrass.

Limpograss (Hemathria)

Like bermudagrass and stargrass, limpograss is planted only by sprigging. Unfortunately, 2,4-D severely injures newly planted limpograss sprigs and diuron is not labeled for this forage grass. Therefore the only option is to apply 1.5 pt/acre of Banvel seven to ten days after sprigging.

Pasture Maintenance

Even with proper planting methods and early weed control, weed infestation often occurs. Therefore, scouting pastures is an important component of any weed control program. Scouting involves routinely walking or driving pastures and identifying weeds. This defines the scope of the problem and allows the best management practices to be implemented in a timely fashion. Number of weeds, the species present, and their locations are important. Note the dominant species as well as uncommon or perennial weeds. The management strategies adopted should focus on controlling the dominant species, while preventing the spread of less common species. If not managed proactively, the less common weeds in a pasture may become future dominant weed problems.

Proper identification of weeds is the first step toward weed control. A good example is knowing the difference between tropical soda apple (TSA) and red soda apple (cockroach berry). Of the two, only TSA is the troublesome invasive weed that must be controlled. However, some have occasionally confused the two species and allowed TSA to go uncontrolled. Unfortunately, this costly mistake results in TSA spreading throughout the ranch and potentially onto neighboring ranches. If there are questions concerning weed identification, contact your local county extension office for assistance.

Some weeds grow best in wet sites (maidencane ponds, depressional areas, ditches, etc.); while others can be found on dry sites (ditch banks, upland areas, and fence rows). Scout pastures for weeds in conjunction with other activities such as checking calves, working cattle, feeding, etc. When a weed is first discovered, remove it or spot treat with an appropriate herbicide. Do not allow that one plant to produce seed and give rise to hundreds of new plants. It is less expensive (both time and money) to control one plant than to wait and have to control hundreds of plants.

Poisonous plants (e.g., *Crotalaria*, black nightshade, spiny pigweed, lantana, etc.) are commonly found throughout Florida. Animals do not usually choose to graze most poisonous plants when forage is abundant; however, when quality forage is limited due to poor growing conditions or overstocking they may graze these plants.

Bahiagrass

Once established, weed control in bahiagrass can be accomplished by using most of the herbicides available in the pasture market. The following herbicides can be safely applied to established bahiagrass:

- 2,4-D (2.0 to 4.0 pt/acre of 4 lb formulation) Annual broadleaf weeds should be treated soon after emergence for best control with lower rates. Perennial weeds should be allowed to obtain a leaf surface large enough to allow sufficient spray coverage (12-18 inches tall). Use amine formulations during warm weather and ester formulations during cool weather.

- Banvel (0.5 to 2.0 qt/acre). Rate depends on weed species and size. More expensive than 2,4-D.

- WeedMaster (2.0 to 4.0 pt/acre). WeedMaster is a mixture of 2,4-D and dicamba and often provides better control as a premix than either product alone.

- Remedy Ultra (2.0 to 4.0 pt/acre). Provides good control of many broadleaf weeds, but is used primarily for brush control in pastures and rangeland. For best results, apply with at least 30 gal/acre of water. The addition of a non-ionic surfactant will increase weed control.

- Milestone (5 to 7 fl oz/acre). Excellent control of TSA, horsenettle, and other members of the nightshade family. Controls pigweeds and other broadleaf weeds, but not blackberry or dogfennel. Can be safely applied under trees. Desirable forage legumes may be severely injured. A 0.11% v/v solution is recommended for spot-spray applications.

- Forefront (2.0 to 2.6 pt/acre). Forefront is a premix of aminopyralid (Milestone) and 2,4-D.

See comments for Milestone. Forefront provides better control of dogfennel than Milestone as long as plants are <18 inches tall at application. For dogfennel plants >18 inches tall, a tank-mix partner will be necessary.

- Pasturegard (2.0 to 4.0 pt/acre). Provides excellent control of dogfennel, blackberry (4.0 pt/acre), teaweed, and other broadleaf weeds. Less effective on TSA than with Remedy alone.

Bermudagrass/Stargrass

The same herbicides used for weed control in bahiagrass may also be used for weed control in bermudagrass and stargrass. There are also some additional herbicides that may be used:

- Cimarron Plus (0.125 to 1.25 oz/acre). Cimarron Plus is a combination of Cimarron and Telar in a 3:1 ratio. Controls several cool-season broadleaf weeds, pigweeds, and suppresses 'Pensacola' bahiagrass. Avoid application during spring greenup.

- Cimarron X-tra (0.50 to 2.0 oz/acre). Cimarron X-tra is a 1:1 of Cimarron and Telar. Weed control is similar to Cimarron Plus.

- Journey (8 to 32 fl oz/acre). Journey is a premix of Plateau and glyphosate for controlling sedges, annual grasses, and vaseygrass. Do not apply during spring transition or severe injury may occur. In summer, expect three to four weeks of stunting after application, followed by quick recovery and rapid growth. A 30 to 50% yield reduction may be observed on the next cutting. If this level of yield reduction is unacceptable, do not use this product.

Limpograss (Hemathria)

Limpograss is perhaps the most sensitive to herbicides. Misapplication or applying herbicides during the dog-days of summer may result in significant injury. Banvel, Cimarron Plus, and Cimarron X-tra may be applied at any time of the year without substantial injury. Pasturegard and Remedy should only be applied during the spring when temperatures are cooler and humidity is low. Spraying these herbicides in late summer and early fall may result in significant injury.

Troublesome Weeds

Although many ranchers do not have the same weed problems within their pastures, several weeds are common among them. This section will focus on control of five of the most common or difficult to control weeds in Florida pastures. These include: smutgrass, blackberry, dogfennel, goatweed, and TSA.

Smutgrass

There are two smutgrass species that are commonly found in Florida pastures: small smutgrass and giant smutgrass (sometimes referred to as West Indian dropseed). Small smutgrass was the predominant smutgrass species in the state, but giant smutgrass appears to be displacing small, and is increasing in number. Small smutgrass appears to be more prevalent in north Florida, while it is not as common in south Florida. Small smutgrass is controlled with 3 pt/acre of Velpar applied during the rainy season. Control of giant smutgrass requires 4 pt/acre of Velpar. Recent research has shown that a surfactant is not necessary when applied during the rainy season. Velpar is lethal to oaks, so be sure to keep spray at least 100 feet away from desirable trees.

Blackberry

Blackberry can be one of the more difficult woody species to control in pastures. In bahiagrass, Remedy and Telar are the two options that are most viable. Remedy should be applied at 2 pt/acre at full bloom and the blackberry canes should not be mowed one year before or after Remedy application. Telar works much more slowly than Remedy and it appears that it is not working at all. If the canes are mowed six to eight weeks after an application of 0.75 oz/acre, it appears to perform much better than Remedy. In bermudagrass, stargrass, and limpograss, Cimarron and Telar are the best options. Cimarron at 0.4 oz/acre and Telar at 0.75 oz/acre have shown to give the most consistent control of blackberry.

Dogfennel

Of the 'troublesome' weeds, dogfennel is perhaps the easiest of the species to control, yet remains the most widely encountered broadleaf weed in pastures. Small dogfennel (<18 inches) can be controlled with as little as 2 pt/acre WeedMaster, 3 pt/acre of 2,4-D or 2 pt/acre Pasturegard. Dogfennel at 18-24 inches tall require 3 pt/acre of WeedMaster, 3 pt/acre of 2,4-D and 2 pt/acre of Pasturegard. For larger dogfennel, 3 pt/acre of Pasturegard provides the best control, while 4 pt/acre of 2,4-D provides good control, but expect some survival with 2,4-D.

Goatweed

Goatweed is a perennial plant that appears to be increasing in number. This plant is a prolific seed producer and takes every opportunity to become established in a pasture. Goatweed is tolerant to many of the herbicides used in pastures including Remedy and Pasturegard. Cimarron at 0.3 oz/acre can be applied to bermudagrass, stargrass, and limpograss, which will provide good control of goatweed. Often times, it is best to mix this rate of Cimarron with 2 pt/acre WeedMaster to enhance goatweed control (remember to do this type of tank-mixture only in the spring on limpograss). In bahiagrass, the only real option we have is 4 pt/acre of 2,4-D. It appears that 2,4-D is providing more control than Banvel. Therefore, it will take higher rates than what is labeled to obtain satisfactory control of goatweed with WeedMaster in bahiagrass.

Tropical soda apple

Tropical soda apple has been in the state since the early 1980's. Prior to 2006, Remedy was the herbicide of choice, but mowing TSA plants eight weeks before application was required and Remedy does not provide residual control. Therefore, controlling TSA appeared to be a daunting task. With the registration of Milestone and Forefront in pastures, TSA control has become much easier. Milestone can be applied to all forage grasses with minimal injury, while controlling existing plants and providing six to 12 months of residual control. However, plants must be actively growing at the time of application and Milestone should not be applied when frost is likely to occur.

Mixed stands of dogfennel and TSA

Milestone is excellent on TSA, but poor on dogfennel. Forefront is excellent on TSA, and good on dogfennel that are less than 18" tall. However, once dogfennel becomes greater than 18 inches tall, Forefront becomes inconsistent and often results in suppression, but not control. Therefore, a tank-mix partner is needed when dogfennel plants are greater than 18 inches tall. Options to add to 2 pt/acre of Forefront to obtain excellent control of both of these species include: 2 pt/acre WeedMaster, 1 pt/acre Pasturegard, 3 pt/acre 2,4-D, or 8 fl oz/acre of Vista. These programs cost approximately $20/acre to apply, regardless of herbicide choice.

Most weed control issues can be resolved using one of the herbicides labeled for pasture weed control. In certain instances, some weeds are more difficult to control than others. Therefore, it is important to note the number and type of weed species present in your pasture. If you are unable to identify a plant in your pasture, contact your county extension office for assistance.

Links of Interest

- University of Florida Weed Science: http://weedext.ifas.ufl.edu/
- UF Range Cattle REC Weed Science: http://rcrec-ona.ifas.ufl.edu/pwsp.html
- Weed Management in Pastures and Rangeland - 2007: http://edis.ifas.ufl.edu/WG006
- Tropical Soda Apple Control: Sorting Through the Options: http://edis.ifas.ufl.edu/AG261
- Thistle Control in Pastures: http://edis.ifas.ufl.edu/AG253
- Blackberry and Dewberry: Biology and Control: http://edis.ifas.ufl.edu/AG238
- Forage Grass Tolerance to Herbicides: http://edis.ifas.ufl.edu/AG267

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