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## **Cogongrass Control in Pastures: Part 2 of a 3 Part Series**

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Cogongrass is a perennial grass that commonly infests disturbed areas in the Southeast. It invades and persists through several survival strategies including an extensive rhizome system (for underground storage of energy and nutrients), adaptation to a variety of soil conditions, drought tolerance, prolific seed production, and adaptation to fire. Additionally, this weed is unpalatable to livestock because it accumulates silicates along the leaf margin, making leaves hard and razor sharp. Cogongrass also forms a dense mat of cover and quickly displaces desirable forage grasses. Due to these properties, cogongrass is one of the most difficult species to effectively remove from pasture and range settings. For detailed information concerning cogongrass biology and awareness see the previous issue's Ona Report for the article "Cogongrass Awareness and Identification: Part 1 of a 3 Part Series."

This article will focus on different strategies for cogongrass control. Based on the properties of cogongrass, we must realize that one herbicide application, or one method of control will not result in eradication. It is going to require much effort to remove cogongrass from infested pastures. In most, if not all, cases it is going to take at least three years for total eradication.

Control of cogongrass has been studied for many years by researchers all over the world. During this time nearly all available herbicides have been tested on cogongrass, but few effective products have been found. For example, all of the commonly used pasture herbicides such as Cimarron, 2,4-D, Remedy, Velpar, and Weedmaster have no activity on cogongrass. Only, glyphosate (Roundup, etc.) and imazapyr (Arsenal, Stalker, etc.) herbicide have been found to be effective, but long-term control is rarely achieved.

Imazapyr is an extremely effective herbicide that controls a variety of weeds, from herbaceous to woody species. One or two applications of imazapyr (0.75 lb/acre) will

often effectively control cogongrass for 18 to 24 months. However, there are several disadvantages to using this herbicide. First, imazapyr will severely injure or kill forage grasses such as bermudagrass and bahiagrass. It also has a long soil half-life and will remain in the soil for several months after application. This often leads to "bare ground" for up to 6 months in the application area due to the non-selective nature of this herbicide. Imazapyr also has the potential to move down slopes during periods of rainfall, killing or injuring other species in the runoff area (oaks and other hardwood trees are especially sensitive). Secondly, imazapyr can only be used as a "spot-treatment" with no more than 10% of the pasture area treated per year.

**Small infestations.** Early detection of cogongrass in any setting is extremely important. This is because a young infestation will be much easier to treat and eradicate than long-established infestations. In this case, we would define a small patch as one that is 20 to 30 feet, or less, in diameter. Even for a small patch, monitoring will be required after the initial application to ensure that any re-sprouting is quickly treated. See Table 1 for specific timelines and suggested herbicide rates.

**Large infestations.** Large infestations are those that are 30 feet, or larger, in diameter. These types of infestations can typically be considered as established and will likely have a large, intact root system. This will require more herbicide treatments to completely eradicate cogongrass. See Table 2 for specific timelines and suggested herbicide rates.

**Integrated management.** Herbicide inputs alone are rarely successful in eradicating perennial species like cogongrass. In these cases, we need to utilize all of the tools we have to remove an unwanted species to reestablish a desirable species. This type of strategy would be best employed in an area where cogongrass has long been established and is the predominant species present. See Table 3 for specific timelines and suggested herbicide rates. In general, the area infested with cogongrass should be burned in August to September. Then treat the burned area one to four months after burning with a mixture of imazapyr and glyphosate. Take soil samples prior to spring tillage the next growing season to ensure that the soil pH is adequate for your desirable forage species. Till the treated area the following spring to a depth of at least 6 inches and prepare a seedbed. Consult with your local county extension agent to consider your options for forage cultivars and fertility recommendations. Getting a good start on the desirable forage will help limit reinfestations of cogongrass in your pasture. Continue to monitor this area in six months intervals until the 4th year. Spot treat with glyphosate when necessary to remove any new cogongrass growth.

Based upon these recommendations, it's easy to see that eradicating cogongrass is not an easy task. Be sure to follow sanitary practices when moving equipment from cogongrass infested areas by cleaning off mowers and tillage equipment before moving into cogongrass-free pastures. It is spreading enough on its own without our help. If you have further questions concerning cogongrass control, please consult your local county extension agent.

**Table 1.** Herbicide suggestions for small infestations of cogongrass in grazing areas. This includes both improved and native rangeland. These concentrations are good for mixing in small (3-30 gallon) sprayers. Please read the entire label of the suggested products prior to treating existing cogongrass stands.

	Timing	Herbicide Rate	Application Notes
1 <sup>st</sup> year	Fall (August-November)	1% Arsenal/Stalker + 0.25% non-ionic surfactant	Treat only 10% of the area to be grazed. No grazing restrictions, but do not cut for hay for 7 days. Read the herbicide label for mixing instructions.
		3% Glyphosate	No grazing or haying restrictions. Read the herbicide label for mixing instructions
		0.5% Arsenal/Stalker + 2% Glyphosate + 0.25% non-ionic surfactant	Treat only 10% of the area to be grazed. No grazing restrictions, but do not cut for hay for 7 days. Read the herbicide label for mixing instructions.
2 <sup>nd</sup> year	Spring (monitor regrowth)	2-3% Glyphosate	See above.
	Fall (monitor regrowth)	2-3% Glyphosate	See above.
3 <sup>rd</sup> year - until eradicated	Spring - Fall (monitor regrowth)	Spot treat at the above rates for the 2 <sup>nd</sup> year.	

Table 2. Herbicide suggestions for large cogongrass infestations in grazing areas, including both improved and native rangeland. These suggestions are intended for large (>100 gallon) sprayers. Please read the entire label of the suggested products prior to treating existing cogongrass

	Timing	Herbicide Rate	Application Notes
1 <sup>st</sup> year	Fall (August-November)	48 oz/acre Arsenal/Stalker + 0.25% non-ionic surfactant	Treat only 10% of the area to be grazed. No grazing restrictions, but do not cut for hay for 7 days. Read the herbicide label for mixing instructions.
		3 to 4 qt/acre Glyphosate	Do not graze for 8 weeks. Read the herbicide label for mixing instructions
		24 oz/acre Arsenal/Stalker + 2 qt/acre Glyphosate + 0.25% non-ionic surfactant	Treat only 10% of the area to be grazed. No grazing restrictions, but do not cut for hay for 7 days. Read the herbicide label for mixing instructions.
2 <sup>nd</sup> year	Spring (monitor regrowth)	2-3% Glyphosate	No grazing or haying restrictions.
	Fall (monitor regrowth)	2-3% Glyphosate	No grazing or haying restrictions.
3 <sup>rd</sup> year - until eradicated	Spring - Fall (monitor regrowth)	Spot treat at the above rates for the 2 <sup>nd</sup> year.	See above.

Table 3. Control of cogongrass using an integrated approach. Adjust your timelines based upon your location within Florida. For example, burning will have be performed earlier in north Florida than in south Florida due to the first onset of a potential killing frost. Please read all herbicide labels prior to treating cogongrass for restrictions and mixing instructions.

	Timing	Herbicide Rate	Application Notes
1 <sup>st</sup> year	Summer - Fall (August-November)	1. Burn	Cogongrass fires burn extremely hot. Be sure to have firebreaks in place before attempting to burn cogongrass.
		2. Apply herbicide: 24 oz/acre Arsenal/Stalker + 2 qt/acre Glyphosate + 0.25% non-ionic surfactant	Treat only 10% of the area to be grazed. No grazing restrictions, but do not cut for hay for 7 days. Read the herbicide label for mixing instructions.
		3. Take soil samples	Have the soil pH tested at a reputable laboratory. Amend the soil as needed to grow a desirable forage.
2 <sup>nd</sup> year	Spring	1. Tillage	Prepare a seedbed for desirable forage species. Repeated tillage will help to dessicate any remaining cogongrass rhizomes.
		2. Plant desirable forage	Please consult your local extension agent for up to date recommendations on forage cultivars and fertility recommendations.
3 <sup>rd</sup> year	Spring (monitor regrowth)	2-3% Glyphosate	No grazing or haying restrictions.
	Fall (monitor regrowth)	2-3% Glyphosate	No grazing or haying restrictions.
4 <sup>th</sup> year - until eradicated	Spring - Fall (monitor regrowth)	Spot treat at the above rates for the 3 <sup>rd</sup> year.	See above.