

Management Practices to Control Tropical Soda Apple¹

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Tropical soda apple (TSA) is a serious weed problem in many pastures throughout Florida. If not controlled, pasture production (yield) declines, resulting in lower stocking rates, lower forage quality, and ultimately, lower ranch profitability. What is the game plan when it comes to controlling TSA?

The University of Florida, Institute of Food and Agricultural Sciences has developed Best Management Practices (BMPs) for ranchers and landowners to control TSA. These BMPs are an integrated approach involving three components: Prevention, Detection, and Control. Each rancher in Florida needs to be practicing these BMPs for three reasons: profitability, sustainability of the beef cattle industry in Florida, and to stop the spread of TSA into other states.

Prevention

The slogan, "An ounce of prevention is worth a pound of cure" is especially true when it comes to TSA. Prevention means not allowing the movement of TSA onto your ranch. TSA spreads through seed that infest cattle, horses, hay, grass seed, sod, and

contaminated mowing equipment. By not allowing these infected items onto your ranch, you are actively trying to prevent TSA from becoming a costly weed problem. If you buy cattle and don't know where they came from, try to hold them in one pasture for six days before releasing them to other areas. Monitor this pasture for TSA plants and use control practices to remove the plants. If the cattle are infested with TSA seed and you open the gates to other pastures, then you are spreading TSA throughout your ranch. Now you have created a more difficult situation that will require more of your time and money.

Detection

Detection means knowing how to identify TSA and understanding where you are likely to find it on your ranch. If you want a positive ID of a plant you find in a pasture, take it to your local county Extension livestock agent. The agent will ID the plant and then educate you on the unique characteristics of this plant such as the stickers (0.5-1 inch long), fruit color (watermelon to solid yellow at maturity), large (6-8 inches long; 3-6 inches wide)

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lobed leaves, and hairy leaf surface. See EDIS publication SS-AGR-77 *Tropical Soda Apple: a Noxious Weed in Florida* (<http://edis.ifas.ufl.edu/UW097>) for more information.

Control

Control is more complicated and expensive than prevention and detection. If you have a sparse stand of TSA (small patches of plants scattered throughout a pasture or a low number of individual plants scattered about the pasture) then either you physically remove the plants (dig them with a shovel) or you spray them with a chemical. When the plants have mature fruit, try to remove them by digging and discarding them in a safe location. Herbicides that are effective for spot spraying include Remedy or Forefront mixed at a 0.5% solution, or Milestone at 0.5 to 0.8 oz per 2.5 gal (15 to 20 ml per 2.5 gal). You should consider adding 0.25% non-ionic surfactant and a color marker to the herbicide solution so you know which plants have been treated. It is best to spray the entire plant (all foliage) because complete coverage is important to get maximum control. Monitor the treated area for 1-2 years and re-treat when necessary. Don't allow new plants to produce fruit and seed.

Spraying dense stands (over 50% of the ground cover in a pasture is TSA) will require a broadcast application applied to the entire pasture. This can be accomplished by using Milestone (5 - 7 oz/A) or Forefront (2 - 2.6 pt/A). Another option is to use Remedy at 2 pt/A. However, using Remedy requires mowing in the spring (every 60-80 days) with the herbicide applied in late May to early June. Conversely, Milestone and Forefront will control existing plants and germinating seedlings for over 6 months after application and can be applied any time of year. Additionally, mowing is not required prior to the use of these herbicides.

Regardless of which herbicides are used, it is important to monitor the treated site beginning in the fall season and spot treat all TSA plants in the pasture. Continue the monitoring and spot spraying for a period of 2-3 years. With any herbicide used, read and follow the labeled directions before using the herbicide.

Spot spraying will cost \$2-\$5 per acre per application, compared to a cost of \$25-\$30 per acre for spraying dense stands. Compared to the costs associated with prevention, the costs of controlling TSA are very high. Further, with a return on investment of less than 2%, cattle ranchers cannot afford to spend a lot of money spraying TSA. However, Florida ranchers have to control TSA in order to stop the spread of the TSA to other states. Any restrictions on cattle movement imposed by other states will be an additional cost passed onto the producer.

No one knows better than Florida cattlemen that TSA is a serious pasture weed problem that must be addressed. As part of your game plan to control TSA, each rancher should be practicing Prevention, Detection, and Control. Contact your local county Extension agent for further information about controlling TSA. Each Florida rancher must do his/her part to help control this weed and to stop its spread to other states.

Further Information

EDIS publications:

SS-AGR-50 Tropical Soda Apple (*Solanum viarum*, Dunal) in Florida (<http://edis.ifas.ufl.edu/AG201>)

SS-AGR-77 Tropical Soda Apple: A Noxious Weed in Florida (<http://edis.ifas.ufl.edu/UW097>)

SS-AGR-78 Shipping Cattle, Not Tropical Soda Apple Seed (<http://edis.ifas.ufl.edu/UW187>)

SS-AGR-129 Tropical Soda Apple Control--Sorting Through the Options (<http://edis.ifas.ufl.edu/AG261>)

SS-AGR-131 Tropical Soda Apple Making a Comeback (<http://edis.ifas.ufl.edu/UW189>)

ENY-826 Biology of *Gratiana boliviana*, the First Biocontrol Agent Released to Control Tropical Soda Apple in the USA (<http://edis.ifas.ufl.edu/IN487>)

ENY-824 Classical Biological Control of Tropical Soda Apple in the USA (<http://edis.ifas.ufl.edu/IN457>)

West Florida Research and Education Center:

Tropical Soda Apple (<http://tsa.ifas.ufl.edu/>)

Tropical Soda Apple Best Management
Practices--

North Florida

(
[http://tsa.ifas.ufl.edu/00Slides/NorthFlorida/
index.html](http://tsa.ifas.ufl.edu/00Slides/NorthFlorida/index.html))

South Florida

(
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