



Tropical Soda Apple Making a Comeback¹

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The environmental conditions of the last couple of years have provided less forage for our cattle to consume. Unfortunately, it has also enhanced the ability, once again, of tropical soda apple (TSA), *solanum viarum*, to gain a strong foothold. The first sighting of TSA in South Florida was in 1987, but it wasn't until the early 1990s that the population of this invasive weed really exploded following an extended period of drought (1987-1989), much like conditions of the last couple of years.

We are once again seeing a dramatic increase in TSA in pastures, and again in locations where it had not been previously or was thought to be under control. Tropical soda apple is on the invasive species lists of both the state and federal governments; and in Florida it is illegal to knowingly transport the plant or plant parts, including seeds, to other locations where it may become established. This could be a major limitation for selling sod. Some southern states already have or are considering cattle quarantine regulations for cattle coming from TSA-infested areas. Because selling of sod from cattle operations in south Florida is so predominant and the number of

calves being shipped is increasing, it is logical that we review the current control methods for TSA.

Probably the most important statement that could be made in the control of Tropical soda apple is: **Do Not Allow Plants to Produce Fruit**. TSA is one of the most prolific fruit and seed producers that we face, producing fruit year round, but mostly from September through May. Each viable fruit may contain 200 - 400 seeds with a germination of 75% or more. At times a single plant may contain 40,000 to 50,000 viable seed. These are dispersed by cattle, deer, feral hogs, raccoons and birds that consume the fruit on the plant and those fruit that have dropped to the ground. One method to get a stand of TSA under reasonable control is to keep it mowed regularly, not allowing the plants to produce fruit. Mowing periodically to a stubble height of 3" will deplete root reserves and eventually kill part of the stand and render the remaining plants more susceptible to control by herbicides. By not allowing fruit production, you eventually limit seeds in the soil for future germination and new plant development.

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Dense stands (over 50% of the ground cover in a pasture is TSA) will require a broadcast application 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.

If you have sparse infestations where individual plants are scattered in pastures, vegetable fields, sod fields, hammocks, ditch banks and road sides, you can follow one of the below recommendations. Although mowing may help get these sparse stands under control, it generally is not necessary or cost effective for sparse stands. These recommendations are for herbicides that currently prove to give 95% - 100% control in spot application.

Milestone at 0.5 to 0.8 oz per 2.5 gal (15 to 20 ml per 2.5 gal.) + 0.25% nonionic surfactant.

Forefront or Remedy at 0.5% solution (50 ml per 2.5 gal) + 0.25% nonionic surfactant.

(Use a colored marker with the herbicide solution to avoid spraying the same plant twice, or not spraying a plant at all.)

Cover the entire TSA plant with spray to ensure herbicide uptake and maximum control. Allow herbicides to dry on plants 3-4 hours before rainfall. Monitor sprayed areas monthly and treat new TSA seedlings. Remember: Do not allow plants to produce fruit.

To control TSA in pastures other than bahiagrass, where Remedy may not be labeled, consider using dicamba at 2 qt/A + 0.10% - 0.25% nonionic surfactant in 20 - 30 gallons of water. Dicamba (Banvel, Clarity, Vanquish) is effective at controlling TSA, but the 2 qt. rate is more expensive than Remedy.

To effectively control TSA, you must permanently stop seed production by controlling

existing plants in pastures, ditch banks and hammocks. Otherwise, the plant will continue to spread and remain a nuisance. For more information on controlling TSA contact your local county extension agent.

Further Information

EDIS publications:

SS-AGR-50 Tropical Soda Apple (*Solanum viarum*, Dunal) in Florida
(<http://edis.ifas.ufl.edu/WG201>)

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-130 Management Practices to Control Tropical Soda Apple
(<http://edis.ifas.ufl.edu/UW188>)

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>)

South Florida
(
<http://tsa.ifas.ufl.edu/00Slides/SouthFlorida/index.html>)