

NOXIOUS WEED ALERT!

HAVE YOU SEEN THIS PLANT?

Larry A. Redmon, Professor & Extension Forage Specialist
Paul A. Baumann, Professor & Extension Weed Specialist
Mary L. Ketchersid, Assistant Professor and Extension Specialist



Tropical Soda Apple

The Problem:

Tropical soda apple (*Solanum viarum* Dunal) is an invasive weed that has recently been found growing in Jasper County, Texas. Tropical soda apple (TSA) is an aggressive perennial forb from Argentina and central Brazil. It was first noted in this country in Florida (1987), where it has become a serious problem, infecting up to one million acres in a relatively short period of time. Because TSA produces unpalatable foliage that is ungrazed by livestock, the plant can rapidly spread over pastures and in woodlands, thus reducing stocking rate and negatively affecting livestock production systems. The yellow fruit of TSA, however, is relished by livestock, deer, wild hogs, raccoons, and birds; thus, the more than 100 seeds per fruit can quickly be distributed over a wide region.



Tropical Soda Apple has long (up to $\frac{3}{4}$ inch) prickles on stems and both sides of the leaves



Tropical Soda Apple Flower

Plant Description:

Tropical soda apple can be 3 to 6 feet tall at maturity, with a stem that may be up to 1 inch in diameter. The stem will usually be green at the soil level and the leaves have a drooping appearance. Stems, leaves, and flower stalks have white to yellowish prickles up to $\frac{3}{4}$ inch long. The pubescent leaves are 4 to 7 inches long and 2 to 6 inches wide, usually about as long as they are wide, and deeply divided into broad, pointed lobes. The leaf surface feels like velvet and may be sticky if moisture level is high. Flowers are white with recurved petals and creamy yellow stamens and are located beneath the leaf canopies. Immature fruit may be 0.5 to 1.0 inch in diameter and will be dark green/light green striped and resemble a small melon in color. Mature fruit are yellow.



Tropical Soda Apple Fruit



Tropical Soda Apple fruit showing numerous seeds.

Tropical soda apple may be confused with Carolina or Western horsenettle; however, the horsenettles usually do not grow as tall as TSA; and stems rarely exceed $\frac{3}{8}$ inch in diameter and are brown at the soil level; leaves are generally longer than they are wide and are more upright in appearance; prickles are rarely longer than $\frac{1}{4}$ inch and are located usually on the stems and underside of leaf mid-veins. The leaf surface feels like fine sandpaper. The flower is larger and generally purple with bright yellow anthers, and the petals are little, if at all, recurved.



Don't confuse Tropical Soda Apple with this plant (horsenettle)

Precautions:

In many instances, TSA has been brought to farms and ranches as a contaminant of hay. If you purchase hay from out of state, and especially from states with known infestations of TSA (AL, AR, FL, GA, LA, MS, NC, SC, TN), purchase only from reputable hay producers to ensure that your hay is weed-free and of good quality. If you purchase cattle from these states, make sure that the cattle are quarantined at least six days prior to arrival at your property.

Management Practices:

Infestations of TSA can range from light to severe. Regardless of the infestation level, it is imperative that TSA **not** be allowed to make fruit. The following recommendations come from the University of Florida Cooperative Extension Service.

Dense Infestation: Pastures with dense stands of TSA or areas where it is not practical to spray individual plants should be mowed. Mow plants to a 3-inch stubble height as soon as possible to keep plants from producing fruit and seed.

Repeat mowing when plants reach the flowering stage (50 to 60 days) through April. Fifty to 60 days after the April mowing, when plant regrowth is at the first flower stage (late May to June), spray a herbicide by using the following application method:

- Remedy at 1 qt/acre + 0.1% to 0.25% nonionic surfactant in 40 gallons/acre of water.

Follow up the broadcast application with spot treatments (see below) for control of escaped plants and new plants from seed. Check pastures monthly for 12 months and spray all new TSA seedling plants. **Do not allow plants to produce fruit.**

Sparse Infestation: Sparse infestations include pastures, vegetable fields, sod fields, hammocks, ditch banks, and road sides with low infestations where each plant is individually sprayed. Mowing these areas is not necessary; instead, spray TSA in these areas for control and to stop additional development of new fruit and seeds. Recommended herbicides for 95 to 100% control using spot application are as follows:

- Remedy at 0.5% solution + 0.1% to 0.25% nonionic surfactant + color marker.
- Cover the entire TSA plant with spray to ensure herbicide uptake and maximum control. Allow herbicides to dry on plants 3 to 4 hours before rainfall. Use a colored marker with herbicide solution to avoid spraying the same plant twice, or not spraying a plant at all. Monitor sprayed areas monthly and treat new TSA seedlings. **Do not allow plants to produce fruit.**
- To control TSA in pastures other than bahia, where Remedy is not labeled, consider using dicamba at 2 quarts/acre + 0.1% to 0.25% nonionic surfactant in 20 to 30 gallons of water. Dicamba (Banvel, Clarity, or Vanquish) is effective at controlling TSA, but the 2 quart rate is more expensive than Remedy. Always check the label before applying either Remedy or dicamba. Be sure and follow the guidelines for spraying volatile herbicides such as dicamba or Remedy.”

TSA Management in Texas:

Tropical Soda Apple was documented in Texas during the summer of 2004, therefore, limited research has been conducted to date for management of this species. Preliminary findings from demonstrations initiated during the summer of 2004 by Baumann indicate that many herbicides are effective for providing top-kill of TSA. However, root-kill and total plant death may require repeat applications during the same season or the following year, depending upon whether the plant came from seed or perennial rootstock. Effective treatments include broadcast applications of Grazon P+D (1 to 2 quarts/acre) Remedy (1 to 2 pints/acre), Surmount (3 pints/acre) and Tordon 22K (1 pint/acre). Individual plant treatments that have also shown promising results include Roundup Ultra (2% solution); Remedy (½ to 1% solution) and Grazon P+D (1% solution). Broadcast and individual plant treatment applications should always include a recommended surfactant, and grazing or haying restrictions should be followed per product labels. Mechanical measures of control would include those described under management practices recommended earlier by the University of Florida Cooperative Extension Service. If livestock are grazing a TSA infested area, they should be confined to a non-infested area for 6 to 7 days prior to moving to another area or shipping. This will allow the seed to pass and not infest other pastures.

Who to Contact:

If you suspect that you have an infestation of TSA, contact your local county extension agent. Your local county agent, in cooperation with other extension, state, and federal agency personnel, will be happy to assist you in controlling this highly invasive, noxious weed. A rapid response team has been assembled to address TSA infestations and is comprised of representatives from The Texas Department of Agriculture, USDA-APHIS, and Texas Cooperative Extension.

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