Tropical Soda Apple 101

What dose Tropical Soda Apple Look Like?

- Tropical Soda Apple *Solanum viarum* or (TSA) is a Perennial Shrub that can grow up 1 – 2 meters tall, with thorns and prickles on all stems and Leaf veins. The leaf itself is soft to touch, and densely covered in short hair like its cousin Tobacco Bush *Solanum Mauritianum*, but beware of the sharp spines that grow from the cream coloured veins on the upper and lower surface of the leaf. The leaves are deeply lobed, around 10–20 cm long and 6–15 cm wide (depending on age/ rainfall and soil fertility). Flowers are **white** (this is a key identifying feature that distinguishes TSA from other native solanum species), 1.5-2 cm wide, with 5 petals and occur in clusters of 3–6 off a short stem. Young fruit are pale green with dark green veins, like immature water melons, mature fruit are yellow and can crow to be golf ball-size (2–3 cm in diameter).

Why is Tropical Soda Apple such a pest and such a high priority for control?

- In environmental areas (bushland and riverbanks) TSA reduces biodiversity because it creates dense thickets or (mono cultures) not dissimilar to lantana thickets where no other plants can emerge, this displaces native plants which is disrupting to ecological processes and also reduces the ability of native animals to move through these areas.
- In the paddock, TSA can reduce carrying capacities as its leaves are unpalatable to livestock and the thorny nature of the plant means they cannot easily pass through thickets of TSA. It also harbours diseases for cultivated solanum species such as tomatoes, potatoes, capsicums, eggplant and more. The fruit and plant material is also poisonous to humans as it contains the poisonous chemical solasodine.
- TSA is primarily spread from animals, floods and contaminated fodder or machinery. When the fruit of TSA is ripe it is sweet and ruminant animals, particularly cattle eat the fruit which spreads the seed in their manure. Each fruit can contain up to 500 seeds which germinate rapidly in cow manure and each plant can produce over 150 fruit in a season. This exponential amount of seed and the ability of cattle to consume and disperse the seed over a property makes TSA a very prolific plant in pasture.

- In comparison to land area of NSW where it could potentially grow and its known occurrences, TSA is still relatively confined to limited areas on the coast. The environmental and agricultural effects from this plant, its ability to spread, germinate and grow in just about any environment and its current limited distribution in NSW are all major factors in why TSA is on the top of the eradicate list.

In this image it can be seen a young TSA plant on the left with developing spikes on the stem, also scattered over the manure are small immature TSA plants with rounded to heart shaped leaves, this is a great example of what TSA seedlings look like when emerging and how cow manure is the perfect germination medium.

What can I do to stop TSA being introduced to my property?

- The first and foremost tool for stopping the introduction of TSA to your property is through being very careful at what you bring to your property. When buying fodder, new livestock and allowing vehicles access to your paddocks and tracks you are potentially introducing this weed and other weed species. This however cannot be avoided so managing these risks is the next step.
- TSA seeds will stay viable in the gut of cattle for up to 7-10 days, so when introducing new stock make it common practice that you hold them in a small paddock or yards for a minimum of a week before letting them roam with the heard, this is not going to stop the seeds coming out of the animal but simply make it easier for you when looking for new weed species and controlling them as they will theoretically be limited to that one small paddock. **This also applies for outgoing**

stock, keep them in a weed free paddock for a week before sale to eliminate the risk of spreading any unwanted weeds from your farm to another!!!

- When buying fodder be sure to get it from somewhere you know is clean or even ask the seller for a hygiene declaration to confirm that there is no unwanted weed seed in the fodder such as TSA. It is a significant offence under the Biosecurity act to bale, sell and spread TSA through fodder. Paddocks with existing TSA occurrences in them can be baled but not before an inspection buy your local biosecurity officer.
- We cannot however stop TSA or other weed seeds from floating down river and settling on your bank. This is why it is important to check areas like river banks thoroughly at least four times a year minimum and after every flood if you think their might be TSA coming down stream. Also roaming stock can be an issue, be sure to upkeep your boundary fences as well as possible to limit this possible pathway.
- When using foreign farm machinery or allowing vehicles on your property be sure that they are relatively clean and not covered with mud and seeds. This is problematic with essential services like power and fire vehicles. If possible designate a wash down area where such vehicles can go before entering the paddocks. Your property rules can be outlined in your farm biosecurity plan, the power is in your hands.

*Two of the key identifying features are **white** flowers with five recurved petals and yellow fruit when mature.*

If I have TSA what can I do to control it?

- First and foremost if you think you have TSA **call your local council and ask for the biosecurity officer to come and identify the plant as TSA**. Many landholders have thought they have it and spent countless hours controlling it before having it identified as a native nightshade species, or another weed with similar leaf shape.
- If you have TSA the best thing to do is search your entire property for the plant. There are potential high risk sites within properties for example, yards, stock camps, river bank areas, feeding sites, tracks and drains. Anywhere that you find TSA should be searched at least every second month to find any seedlings that come up. Controlling TSA before it seeds is the best way to break the cycle and eradicate it from your property.
- **If you find a fruiting plant? Collect all the fruit**, the easiest way to do this is pull the entire plant, or if to big cut the limbs into bits and bag them until you get to the stump, then treat with vigilant gel or other approved herbicides for this technique. The bags of fruit should then be burnt in an incinerator, buried in the ground at least deeper the 0.6m or sent to land fill where it will be buried. **(Do not put in a pile and leave in the paddock or put it in your green bin).**

- When treating non fruiting plants, if possible grub them out, be sure to get all roots, if the ground is to hard treat with one of the approved herbicides such as Grazon extra or Grazon DS and Metsulfuron Methyl mixed together. If unsure of options and treatment rates please contact your local biosecurity officer at council for assistance.

For more detail on history, ecology, and control options visit NSW DPI Weed Wise and read in detail about TSA and other weeds or simply contact your local council and ask for the biosecurity officer who will have free identification, information, control advice and assistance.