

# Living with *Poisonous* PLANTS



» DR. JUSTIN DU TOIT  
Grootfontein Agricultural Development Institute  
justindutoit@gmail.com

The interplay between livestock, poisonous plants, and humans has a long history. Over 2000 years ago a Greek with the name of Pedanius Dioscorides, in *De Materia Medica*, for example, wrote that both the flowers and leaves of Nerion (we know it as Oleander) are able to kill dogs, asses, mules, sheep, and “most four-footed living creatures”. Robert Wallace, in 1896 in South Africa, speaks of the “wild delirium” experienced by animals should they eat of “dronk-gras” (*Melica decumbens*). Disliked though they might be, poisonous plants are a natural component of grazing landscapes across the world.

However, with the advent of inter-continental transport, particularly ships, plant species found themselves carried to new lands where, in the absence of any natural enemies, and with conditions well suited to their growth, they flourished. Often these dispersions were unintentional – hay contaminated with satansbos seed, for example – but often they were intentional: lantana was introduced as an ornamental, as were many cactus species; wattles were introduced for their bark, and beefwood to stabilise dunes.

Moving to the present day, we find ourselves in a country with a host of plants that can be damaging or deadly to livestock, to the extent that Kellerman and others, in 1996, estimated the annual cost of livestock losses to poisonous plants to be just over a hundred million rand which, when corrected for inflation, translates to just under R 450 million today.

In cattle, the type of toxins that causes the most damage are the cardiac glycosides, poisons that causes the heart to develop an arrhythmia that

can be fatal. These toxins are found in various plants across the country, causing variations of the same disease – tulip poisoning, slangkop poisoning, krimpsiekte, and tylecodon poisoning. It’s not only animals that suffer – *Urginea* (slangkop) species cause human fatalities every year, typically from the practitioners of traditional medicine, where it is consumed by patients in the misplaced hope that it might address any of a range of maladies.

Eradication of the plants responsible for poisoning is sometimes suggested as a possible management intervention. This approach is best suited to large invasive aliens such as lantana, which can be chopped or burnt, and then treated with a herbicide. For most other plants, however, they are just too numerous and wide-spread for one to even consider trying to eradicate them. Furthermore, it is almost certainly not a good idea to target indigenous plants at scale – who knows what their function in the environment is, or what we might trigger should they be removed.

Additionally, some plants aren’t even visible much of the time. Geeltulp, for example, is a geophyte (a plant with an underground food-storage organ) that exists for most of its life in the form of a hibernating corm (like a bulb), and only occasionally pushes a leaf above the ground. Sometimes, populations of the species emerge in spectacular fashion, rendering the whole landscape a shimmering yellow. And there are numerous other poisonous geophytes, too.

When poisonous plants flourish in a landscape in this way, one may expect livestock losses *en masse*. However, this usually does not happen. For starters, many poisonous plants are relatively



» **Figure 1.** In some years geeltulp will cover the veld, only to fade away into dormancy. If other feed is available, and animals are familiar with the plant, losses should be minimal.

unpalatable. It is only under conditions of forage shortages, such as drought, that livestock will readily consume them, so judicious veld and animal management can prevent mass mortality. Additionally, animals that have been exposed to poisonous plants often do nibble on them, feel much the worse for it, and after that leave them alone. This is why animals imported from an area of the country where a particular species is absent face a higher risk of poisoning – they don't know what to avoid. Again, though, management interventions are possible: put new animals in camps with low densities of known poisonous plants so they can learn which species to avoid.

And knowing the poisonous plants that occur in an area forewarns a farmer of the potential threat they pose. And the knowledge is out there – local farmers are sure to know the local poisonous plants, and will know of ways to avoid them or if necessary treat affected animals, especially in

collaboration with local vets. There are also other sources that provide a wealth of information on the biology of the plants, the poisons they contain, the conditions under which they are a threat, the symptoms they cause in afflicted animals, and the medical interventions one can take to minimise losses. I would strongly suggest that the excellent book “Poisonous Plants of South Africa”, by van Wyk, van Heerden, and van Oudtshoorn, should be on every livestock owner's bookshelf.

Poisonous plants are here to stay, though it is wise to wage war against aliens to the extent that we can. Aside from that, understanding what is out there, understanding the conditions under which they become dangerous, where on the farm they are, and what to do if poisoning occurs, allows us to minimise their damage, and thus the economic hardships they might otherwise have precipitated.



» **Figure 2.** Poisonous alien invasive plants should be destroyed to the extent your means allow. Here, lantana is first burnt, then later the regrowth can be treated with appropriate herbicides.