



DEPARTMENT: AGRICULTURE



Poisonous plants

Why are poisonous plants important?

- Poisonous plants are important because they cause disease and death of livestock. Poisonings have occurred in the past in which up to one million animals have died.
- The losses as a result of plant poisoning can be direct or indirect and include death, loss of condition and ill-thrift, poor production (for example, loss of milk yield) and reproductive failure (abortions, stillbirths, birth defects, and failure to become pregnant).
- Further economic losses include the cost of control and treatment measures (fencing, strategic grazing practices, supplementary feeding, veterinary expenses, medicine), temporary or permanent non-utilisation of toxic pastures and diminished value of infested lands.
- There are serious health risks connected to eating meat from animals that have died from plant poisoning.
- About 600 indigenous poisonous plant species are known to occur in South Africa. Different parts of these plants (for example, leaves, pods, seeds) may be poisonous.
- One of the greatest risks to farmers in South Africa is the loss of livestock as a result of plant poisoning.

When is plant poisoning most likely to occur?

Animals usually avoid poisonous plants.

Generally poisoning occurs when:

- Animals are introduced into a new area (newly purchased animals from other areas)
- There is a shortage of food and animals are forced to eat the available fodder (during drought, after veld fires, overstocking or during spring when poisonous plants are the first to show new growth).

Which factors contribute to plant poisoning?

There are plant/veld factors and animal factors, which contribute to the likelihood of plant poisoning occurring.

Plant factors

- After the dry season or a veld fire, poisonous plants are usually among the first green plants to appear. A number of poisonous plants are also at their most poisonous in the young stage when they are most attractive to stock.
- Poisonous plants, which are not normally eaten, are often eaten during times when grazing may be scarce such as overgrazing and during adverse conditions.
- Some poisonous plants are very resistant to drought and may be the only green plants available and are therefore eaten during times of drought.
- Poisonous plants are often found as weeds in harvested lands and along roadsides (areas that are frequently used for grazing in times of scarcity).
- Certain poisonings occur after a sudden change in the weather, usually after an unseasonable frost or when wet, cool conditions are suddenly followed by a warm, dry spell.
- Wind and/or hail can knock acorns or pods to the ground, making them available to animals.
- The use of fertilisers may increase the toxicity of some plants.
- Animals are sometimes poisoned when feeding on fodder (hay, silage, stover, concentrates) containing poisonous plants, fungi or chemicals.

Animal factors

- When livestock have been kept in an area for some time they are often familiar with the poisonous plants and will not eat these unless forced to do so. Animals that are moved from familiar areas to new pastures tend to graze less selectively and will get poisoned more easily.
- Poisoning often occurs when animals are moved from one area to another / especially when they are allowed to graze along roadsides where poisonous plants occur in great numbers.
- Different species of animals are affected in varying degrees of severity and by different types of poisonous plants.
- Exotic breeds of livestock tend to graze less selectively, are more susceptible and are poisoned more frequently than indigenous breeds.
- Some plants affect males and females in different ways.
- Young and older animals are more susceptible. The livers do not have the capacity to eliminate the toxins and young animals also have not yet learnt to avoid poisonous plants.
- Hungry animals graze more greedily and are less selective and therefore more likely to be poisoned. This can occur in conditions of drought, veld fires or overgrazing.
- Thirsty animals look for plants with a high moisture content, which they would normally avoid. Some of these plants may be poisonous.
- Pregnant animals tend to be less selective and have a higher intake than normal and may therefore be poisoned.
- Animals in poor condition are at a greater risk of poisoning than animals in good condition.

- The skin colour of animals will determine the extent to which certain poisonous plants will affect them, for example in the case of photosensitivity (poisonings that result in damage due to sunburn) unpigmented, white areas on the skin may become red and swollen.

<p>Most important plant poisonings in South Africa</p> <p><i>In cattle</i></p> <ul style="list-style-type: none"> • Cardiac glycosides (for example, tulp and slangkop) • Seneciosis • Gifblaar • Gousiekte • Lantana • Diplodiosis 	
<p><i>In goats and sheep</i></p> <ul style="list-style-type: none"> • Geeldikkop • Vermeersiekte • Cardiac glycosides (for example, tulp and slangkop) • Seneciosis • Gousiekte • Diplodiosis 	

Effects of poisonous plants in animals

- Many different types of toxins occur in the various poisonous plants, which affect the body in different ways. For example, some might affect organs such as the heart while others might affect the liver.
- A single toxin can frequently target more than one organ in the body.
- When an animal eats a poisonous plant, it can either die quickly, or suffer from a prolonged disease state.
- The various poisonous plants eaten can affect the body in many different ways and some of the signs seen in animals (depending on the organ or function of the body involved) include:

Nervous signs

Restlessness, sensitivity to sounds and touch, high- stepping, difficulty in walking, muscle tremors, aimless wandering, staggering, stumbling, pushing against objects, star-gazing, blindness, convulsions, paralysis.

Digestive signs

Animal stops eating, salivation, dehydration, fluid from the mouth and nose, vomiting, stomach pains, stomach stops working, constipation, diarrhoea, swollen belly.

In dead animals large quantities of fluid or gas in the gut may be visible, changes in colour and smell of the gut contents, reddening of areas of the gut, bleeding.

Urinary signs

Little or no urine production, swelling of the belly with fluid, change in colour of the urine and the urine may contain crystals (small stones) and the animal drinks a lot.

In dead animals crystals in the kidney, swollen, wet kidneys filled with fluid, large and pale kidneys, change in shape of the kidneys and bleeding may be observed.

Reproductive signs

Difficulty in giving birth, poorly developed or large udder, enlarged belly, enlarged vulva, suppressed milk production, abortions, deformed young, oversized or weak young, males not interested in mating, repeated breeding.

Heart signs

When the heart is affected, an animal may drop dead suddenly, for example, when it is chased or when drinking water.

The animal tends to stand with its head in a low position and the stomach tucked in. It sometimes grinds its teeth or groans, and the heart rate increases. Bloat, diarrhoea and weakness of the hindlegs can also occur.

In the dead animal you may notice pinpoint or larger areas of bleeding, lungs swollen with fluid, fluid in the chest cavity, around the stomach and in the sac around the heart, froth in the windpipe and a heart that is enlarged, flabby or pale.

Respiratory signs

Increased breathing rate, difficult breathing, animal grunts when breathing, frothing at the mouth.

In dead animals fluid and gas in the lungs, signs of infection in the lungs (pneumonia), and froth in the windpipe may be apparent.

Blood and blood-component signs

Pale, yellow, bluish or brownish colour of membranes, green-tinged faeces, listlessness, animal stops eating, animal will bleed easily, red-wine to coffee-coloured urine.

In dead animals you may notice ulcers in the stomach, bleeding, and pale, yellow, blue or brown colour of the carcass.

Signs of bones and teeth

Itchiness and reddening of skin, scale or crust formation, rough coat, thick fluid on the skin, seeds stuck onto hair, wool or skin, sunburn, especially on white areas and muzzle, hair or wool loss, animals seek shade, feet are warm and painful to the touch, hoof grows outwards and turns up, difficulty in walking.

Some of these skin signs occur because of liver damage.

Signs of bones and teeth

Uneven teeth, mottled or black teeth, animal shifts weight from one leg to the other, stiffness, bones fracture easily.

Liver signs

Vomiting, weight loss, yellow discoloration of membranes, swelling of the belly with fluid, sunburn, swelling of the face, sore feet.

In dead animals you may notice yellow colour of the carcass, bleeding in the body, fluid in the chest and abdomen, hard and small liver, intense reddening of the liver, soft and swollen liver, swollen gall bladder.

How do you know if your animals have been poisoned?

- The signs in sick and dead animals may raise the suspicion of poisoning, and you may be aware of poisonous plants which occur in the area.
- However, many of the signs can also resemble those of other diseases.
- If you are unsure, your animal health technician or state veterinarian can assist you. They may examine dead animals and could send some samples to a laboratory for testing as well as search for poisonous plants where the animal grazed. Once you know what type of poisoning has occurred, you can decide on the best treatment and prevention.

Can plant poisoning be treated?

- In many cases there is no treatment for plant poisoning.
- In specific cases there may be treatment available (such as activated charcoal), but you first need to know which type of poisoning has occurred.
- Although many animals recover, a number of plant toxins affect the animals for the rest of their lives and growth and productivity of stock as well as their resistance to other diseases are reduced.
- Poisoned animals have a better chance of surviving if they are not forced to walk long distances.
- Prevention is therefore better than treatment.

How to prevent plant poisoning

- It is good to know which poisonous plants occur in your area, and to keep your livestock away from the localities where the plants can be found.
- Prevent overgrazing and veld fires.
- Keep animals in good condition with supplementary food and licks during the dry season.
- Always provide water for livestock.
- Take care when introducing animals from other areas (especially exotic breeds).
- It may be necessary to eradicate some of the poisonous plants.
- Do not feed mouldy hay or hay cut from areas with poisonous plants to your animals.

**For further information about recognising poisonous plants in your area,
and about preventing and treating poisonings in your animals, speak to your
animal health technician or state veterinarian**

or contact

***Animal Health for Developing Farmers
ARC-Onderstepoort Veterinary Institute***

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