

Technical Information- Managing Potential High Prussic Acid Issues

Initial Management Actions

- Send only a few animals into the sorghum for the first hour, and monitor them for any abnormalities. If you see any signs of toxicity, remove all animals promptly and treat the affected animals. If there are no signs of toxicity release the rest of your livestock into the sorghum and monitor them intermittently over the next few days.
- Do not graze plants smaller than 75cm in height.
- Ensure the crop has adequate phosphorus nutrition.
- Consider providing your livestock with Sulphur supplements. A 12% Sulphur block should be used
- Have a laboratory analysis completed on suspect forage sample before feeding.

If your crop is found to be high in cyanogenic glucoside, and is considered unsafe for grazing, **do not** make hay from the effected sorghum. Although some reduction in prussic acid occurs during hay making, it may still be toxic. The alternative is making silage from your crop. The acid fermentation process normally releases any prussic acid present over a 3-month period. If in doubt, have any suspect forage, hay or silage analyzed before feeding.

Diagnosis of Prussic Acid and Nitrate Toxicity

Most cases of prussic acid poisoning are chronic, and will depress weight gains or milk production. These effects are often concealed by poor seasonal conditions, and often go undetected. A Sulphur supplement in these cases may improve livestock productivity. Acute toxicity can take place quite quickly, within 15 to 20 minutes of consuming the effected forage, and death may occur within minutes. The cyanide formed acts by inhibiting the release of oxygen from the blood, and the animal dies of tissue asphyxiation. The blood remains bright red due to the high oxygen content.

Symptoms include:

- rapid heavy breathing
- frothing at the mouth
- muscular twitching/convulsions
- staggering and severe difficulty in breathing
- coma

These symptoms are very similar to nitrate toxicity and can be easily confused. With nitrate toxicity, the blood of the animal will be dark brown. To confirm nitrate poisoning, have your vet take a sample of the aqueous humor (fluid from the animal's eye) during the autopsy for analysis.

To combat nitrate poisoning, introduce your animals gradually to the sorghum over a few days to let the bacteria in the rumen adjust to the higher levels of nitrates and nitrites.

Treating Animals for Prussic Acid Poisoning

Poisoned animals must be treated promptly, and the most effective treatment is an intravenous injection of sodium nitrate or sodium thiosulphate (also known as photographic hypo). An oral drench may also be used by mixing 55 grams of sodium thiosulphate in 500 mls of water for cattle, and 15 grams of sodium thiosulphate in 500 mls of water for sheep. This treatment must be repeated hourly until the animal recovers.

For more information, contact HSR Seeds on (07) 4169-0011.

Information Sources Technical Information Sheet:

1. Border Veterinary Surgery Goondiwindi
2. QDPI Toowoomba
3. QDPI Yeerongpilly
4. Poisonous Plants: a field Guide QDPI, 1993
5. Australian Journal of Experimental Agriculture and Animal Husbandry:
6. K.A. Archer and J.L. Wheeler Volume 18, 1978
7. Summer Forage Crops: Crop Link Chapter 15 Mike Lucy
8. Australian Journal of Experimental Agriculture and Animal Husbandry:
9. J.L. Wheeler, D.A. Archer and B.A. Hamilton Volume 20, 1980
10. Prussic Acid Poisoning R. Sneath QDPI Dalby