

CSU Beef Day 19.08.2010

Cattle Poisonings
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Cattle Poisonings

- Nitrate/nitrite poisoning
- PA poisonings; **heliotrope**, bushy groundsel, Patterson's curse

Nitrate/nitrite poisonings

- High mortality rates make this a devastating loss.
- May 07: 30 heifers, 5 dead, saved 11.
- May 07: 40 purchased weaners ,10 dead
- May 09 : 70 heifers, 7 dead

Capweed and marshmallow

Broadleaf weeds plus high
nitrogen make a deadly
combination



High risk plants

- Broadleaf weeds especially capweed in yards and holding paddocks.
- Heavily fertilised cereal crop for grazing
- High nitrogen hays e.g. canola, some forage sorghums.
- Sprayed broadleaf weeds e.g. variegated thistles
- Grass and B/L weeds growing where timber has been burnt

Why don't we get nitrate
poisoning more frequently ?

You need hungry cattle

- In drought lot fed very second day (canola hay)
- Purchased from saleyards and put hungry off the trucks into high risk paddock
- Yarded off bloating lucerne and then put onto abundant capeweed
- Drought affected cattle and thistles sprayed

The usual history

- Autumn/Winter, overcast, showery weather.
- Hungry cattle
- Tired/busy farmer
- Cattle moved late in the afternoon onto risky paddock, yard etc.
- Next morning dead cattle every where
- Devastated farmer

Symptoms

- Dead cattle everywhere is the most common symptom!
- Weak, stagger, rapid light breathing
- Chocolate coloured blood pre death, gradually returns to normal colour post death.

Prevention

- Fill them up before exposure to risky feed
- Some average - poor quality hay, good straw first thing in the morning.
- When they are full and camped chewing their cud later in the morning move them.
- If they are still alive at 5.00 pm you can go home, enjoy your dinner and sleep soundly.
- I may be proved wrong but so far in 35 years I have never seen nitrate deaths in sheep or cattle if this advice is followed.
- In drought lot feed low N hay/straw/grain before high N hay.

Treatment

- Methylene blue intravenously is very effective.
- The cattle often drop dead with the extra stress as you try to give it!
- Lots of cattle die before the vet arrives
- They do not show any gratitude if they recover after treatment! Often very aggressive.
- **NOT REGISTERED. Can legally only treat one animal and suggested WHP is 180 days re meat.**

Is it always nitrate poisoning?

- One of the most common second hand **misdiagnoses** I hear is nitrate poisoning.
- Just because something died in a high nitrate situation does not mean it was nitrate poisoning. (bloat, milk fever, grass tetany, pulpy kidney)
- Get multiple deaths properly investigated by a DV or other veterinarian.
- The correct diagnosis can actually make you or save you money.

Pyrollizidine alkaloid poisonings in Hume LHPA

- Heliotrope: huge losses over the past 10 years especially on the Murrumbidgee River flats.
- Bushy groundsel: a few big losses in purchased lines from Riverina
- Patterson's curse: usually low grade liver damage, occasionally ill thrift and deaths in young cattle.

Heliotrope infested paddock



Heliotrope
Also naked lady containing plant



Heliotrope poisonings

- Often slow and subtle.
- Chronic liver damage >>> cirrhosis
- Ill thrift >>>> death
- Rectal prolapses in young cattle
- Brain damage from failing liver unable to process nitrogen from protein > high blood ammonia > terminal brain damage (depression, wandering, reduced awareness, occasional outbursts of irritability).
- Some individual local losses of up to 30 head per annum

Heliotrope affected steer
Ill thrift
Brain damage



Heliotrope - -what happens?

- Heliotrope; more than one species
- Liver toxins – pyrollizidine alkaloids (PA'S)
- PA's cause chronic liver damage
- Heliotrope consumed while green is most toxic.
- Eaten in summer and autumn, may see problems in young animals in autumn/winter.
- Most clinical cases especially cows seen as feed comes away in late winter/early spring

Another heliotrope poisoning



Mild to moderate enlargement of the liver, with the right middle and lateral liver lobes showing rounded borders. The liver also appeared paler in colour than normal. Early liver damage with swelling, paler than normal



If the animal survives the early damage the liver becomes fibrosed, shrunken and cirrhosis occurs (like chronic alcoholics). Lab tests confirm typical heliotrope damage.

Case 1

- 50 mixed store steers purchased in winter 2009
- Ill thrift, depression and death's noted within a month or two of going onto good green feed.
- All deaths from one line of cattle.
- NLIS shows that line of 10 cattle came from a property on the Murrumbidgee River flats
- By October 5 ex 10 dead, another 2 fading and almost certain to die.

Case 2

- 100 Angus cows grazing heavily infested paddocks in summer/autumn
- Hand fed through late autumn and winter, mob generally in light condition
- Feed improves
- In spring when most of the mob starts to recover condition the owner becomes concerned about ill thrift and depression, initial deaths.
- Post mortem reveals typical heliotrope liver and brain damage.
- A total of 20 cattle die in this outbreak.

Conclusion

- Heliotrope poisonings are a time bomb for cattle owners and store cattle buyers.
- Most cattle cases I see are not in the summer and autumn when the plant is eaten but in early spring as pasture availability increases.
- Molybdenum is of NO USE for CATTLE with this poisoning
- Nathan Ferguson DA Tumut has some 2008 handouts re heliotrope control trials in pasture and fallows (Nigel Phillips DA Wagga has copies)
- Agronomists recommend competitive pasture as the best long term strategy