



Browser's Bulletin 52:

Sudden Death in the Goats

All too often the poor snake gets the blame for sudden death in livestock. Now snakebite is a possible cause of death, especially in kids that are more inquisitive, but it is rare, just as rare as the lightning strike which is also blamed for sudden death too often. The lightning strike cases usually are found under a tree where the animals have gone for shelter during a storm. Many goat producers have shelters set up for their animals to get away from the extreme weather conditions and are not as commonly found congregating under trees in storms like these poor cattle were.



Causes of sudden death in goats can be divided up into non-infectious and infectious causes

Non-infectious causes of sudden death

- Trauma (kids are known to jump around and injure or get caught in nets or fences leading to strangulation)
- Abdominal catastrophe (mesenteric bloat, rumen bloat, abomasal bloat, acidosis)
- Hypothermia/hypoglycaemia (weather conditions and lack of milk)
- Disbudding meningoencephalitis
- Anaphylactic reaction from repeated injections
- Plant poisoning
- Chemical poisoning (copper toxicity, arsenic, lead)
- Predators
- White muscle disease (Selenium deficiency) or selenium toxicity
- Metabolic conditions in adult goats (hypomagnesaemia, hypocalcaemia, transit tetany)
- Lightning
- Snake

Infectious causes of sudden death

- **Enterotoxaemia (Clostridial perfringens type D) or Pulpy Kidney**
- Coccidiosis
- Listeriosis
- Septicaemia: Salmonellosis, strep, etc.
- Barber's pole (Haemonchosis)
- Gangrenous mastitis (sub-acute mastitis)
- Acute fascioliasis (liver fluke) must be in a liver fluke area
- Anthrax (events usually occur within the Anthrax belt) <https://www.dpi.nsw.gov.au/biosecurity/animal/humans/anthrax>
- Other Clostridial diseases (Black leg, Malignant oedema, Black disease, Botulism)

The main reason for doing the Browser's Bulletin on sudden death this month is to remind everyone about the importance of Enterotoxaemia (Pulpy Kidney) in goats and if you haven't vaccinated last year's drop of kids with a clostridial vaccination then it is time to do so!

Clostridial perfringens type D is present in the intestine of normal sheep and goats. When there is a rapid change in their diet (movement onto lush pasture, overfeeding of grains and change in supplementary feed) then the Clostridial perfringens type D will proliferate and produce a toxin that is absorbed through the intestine into the bloodstream causing massive organ damage and death.

Enterotoxaemia in sheep and cattle usually present as sudden death, where in goats they can be affected in a variety of ways:

Peracute form: Sudden death

Acute form: The goats will have a green-yellow watery diarrhoea for 1-2 days that may also present with mucus, blood and shreds of intestinal lining. These goats become recumbent, severe abdominal pain, paddling on the ground, head thrown back and death.

Chronic form: Adult goats showing periodic bouts of severe diarrhoea, milk reduction and wasting. These cases will respond to Clostridial vaccination.

Goats are highly susceptible to the Clostridial perfringens type D bacteria and the immunity produced from a multivalent clostridial vaccination appears less satisfactory in goats than in sheep and the persistence of the response to vaccinations is shorter in duration in goats than in sheep and for this reason it is necessary to shorten the interval between booster vaccinations to every 6 months. In some herds that have had issues with Enterotoxaemia they will vaccinate every 2-3 months.

I often get asked about the best vaccination to use. The answer is, to get the simplest vaccination that contains the components most relevant to the herd in question. The commonly used vaccination (5-in-1 and 7-in-1) provide protection against Enterotoxaemia, Tetanus, Black Disease, Blackleg and Malignant oedema (plus Leptospirosis with the 7-in-1). A 2-in-1 and a 3-in-1 Vaccination will provide protection against Enterotoxaemia and Tetanus which are the two most significant Clostridial diseases in goats and the 3-in-1 will also provide protection against Cheesy gland. In general, I will recommend a 2-in-1 or a 3-in-1 (Glanvax3) unless you are in a liver fluke area and then I would recommend the 5-in-1 or the 6-in-1. Unfortunately, the 2-in-1 and the 3-in-1 can often be difficult to get from produce stores, but they may order it in for you. The other clostridial diseases are extremely rare and only necessary to vaccinate against when infections have been confirmed in your herd or if you live in a liver fluke area. Field trials have demonstrated the 2-in-1 more efficacious for goats for developing protective immunity against enterotoxaemia than 5 in 1. If you would like more information about Cheesy Gland, check out Browser's Bulletin 15 at <https://www.ils.nsw.gov.au/regions/hunter/newsletters>.

If you are unable to get the 2-in-1 or the 3-in-1 (Glanvax3) then use the Clostridial multivalent vaccination that you can get. The most important thing is ensuring your goats are vaccinated for Enterotoxaemia and Tetanus and any vaccine is better than no vaccine at all!

Vaccination Regime for Clostridial Diseases:

Initial Vaccination: 6-8 weeks of age and a booster 4 weeks later (if the doe was not vaccinated then start initial vaccination at 3-4 weeks of age)

Booster: Every 6 months and 1 month prior to kidding. Vaccinated does will pass their immunity to their kids in the colostrum

Booster: 2 weeks prior to dietary changes

If you have other questions and concerns about sudden death in goats and Enterotoxaemia please send me an email on kylie.greentree@lls.nsw.gov.au

References:

- Green, D. S., et al. (1987). "Injection site reactions and antibody responses in sheep and goats after the use of multivalent clostridial vaccines." Vet Rec 120(18): 435-439.
- Matthews, J; 2016. Diseases of the Goat 4th Edition
- <https://www.dpi.nsw.gov.au/biosecurity/animal/humans/anthrax>
- <https://www.lls.nsw.gov.au/regions/hunter/newsletters>

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