

Vaccinations for Australian Goats

By Dr Sandra Baxendell, PSM, BVSc (Hons), PhD, MACVS, GCertAppSC(RurExt), GCertPSectMgt, PGDAppSc, MRurSysMan - Veterinarian, Goat Veterinary Consultancies- goatvetoz

All goats anywhere in the world need to be vaccinated for:

- Enterotoxaemia (pulpy kidney)
- Tetanus
- Caseous Lymphadenitis (CL, CLA cheesy gland) – if that country is lucky enough to have a vaccine like Glanvac.

These diseases are very difficult to treat successfully and hence need to be prevented. Enterotoxaemia causes sudden death in goats, often with bloody diarrhoea. Death rates can be high as was the case in a herd of 117 Angora goats where 44 died.ⁱ In another report 30 out of 150 goats died 3 months after getting their first and only vaccination.ⁱⁱ However in most cases just one goat in a small herd dies. In a study in Canada of the causes of death of 152 dairy and meat goats, found that enterotoxaemia was the most important cause being responsible for 17% of deaths.ⁱⁱⁱ

Protection for enterotoxaemia from vaccines that have many actives is very poor^{iv} so it is best to use a vaccine that has the minimal diseases needed e.g. Glanvac 3. Also as a minimum vaccinations for enterotoxaemia need to be given at least every 6 months and if feeding a lot of grain, then every 4 months is best. Also we know from this and other research found that the antibody levels against enterotoxaemia is much shorter in goats than sheep.^{v vi}

Tetanus is caused by the spore-forming bacteria, *Clostridium tetani*, which can grow in any deep wound and is especially likely after castration by banding as the tetanus bacteria like dead tissue with no blood supply. These spores are found in both animal faeces and the soils everywhere in the world. Even with treatment, mortality is very high once clinical signs occur. One Boer goat herd near Ballina, NSW lost 8 goats out of a herd of 53 during the month of September and a veterinary investigation the following month found 8 week old kids clinically affected by tetanus i.e. down in a sawhorse position, prolapsed third eyelid, drooling and unable to open their mouths.^{vii} Tetanus antitoxin is not the same as vaccination but does provide immediate protection as it is antibodies collected from the serum of horses that had received multiple tetanus vaccines. The protection only last a couple of weeks, similar to the protection given by colostrum.

Caseous lymphadenitis (CLA) is a common disease even in feral/rangeland goats. It is caused by the bacterium *Corynebacterium pseudotuberculosis*. These settle in lymph node and then cause abscesses. The external abscesses are mainly under the ear or in front of the front shoulder or back knee. These can be lanced and treated and the goat should be isolated until healed as the pus is very infectious. However abscesses can also form inside the chest^{viii} but these can't be treated as antibiotics as the abscess wall is too thick to allow antibiotics to have any effect. Once abscesses are in a herd they can spread rapidly and in 1 report, 16 out of 57 stud goats had external abscesses.^{ix} Vaccination in sheep, which became available in 1983, with 2 initial doses and annual boosters have reduced incidence from around 30% to 3%^x and abattoir surveillance in sheep found that CLA prevalence has been declining, from estimates of 26% in 1995–5.2% in 2009.^{xi} I have found similar

results in goats e.g. in a herd of 1000 feral based cashmere goats. Norway has eradicated CLA, along with Caprine Arthritis Encephalitis and Johne's disease, by snatch birthing kids and rearing in isolation until the old herds were culled.^{xii} This system can be used to control CLA but the CLA bacteria can survive for long periods in the environment, so vaccination is still needed.

All goats should be vaccinated with Glanvac 3 at a minimum of every 6 months after their initial 2 doses 3-4 weeks apart. Glanvac 3 is registered for goats while other vaccine brands are not and hence need a veterinarian's prescription. If feeding a lot of grain then vaccinations every 4 months may be needed. Ideally pregnant does should be vaccinated a month before kidding. Kids whose mothers were vaccinated should receive their first vaccine at 4 weeks and again at 7-8 weeks. If the mothers were not vaccinated in late pregnancy then vaccination should be given starting at 3 weeks. Male kids that are banded must have received 2 vaccines to protect against tetanus. In Queensland castration of kids by any means is an act of veterinary science after 8 weeks of age so if the owner wants to castrate by banding, then the second vaccine can be given when the band is applied – see <https://www.vsb.qld.gov.au/for-vets/guidelines-and-policies/policy-general>. The label instructions state the earliest a vaccine can be given is 3 weeks.

The label instructions also state that once a pack is broached or opened it can only be stored for 4 weeks. All vaccines must be stored between 2 and 8 degrees C and kept in the box, out of the light and if vaccinating large numbers in yards, then it should be replaced in an esky with wrapped cold freezer bricks when there is a break in operations. The vaccine container must also be shaken before use and then regularly. Veterinarians can supply small amounts of vaccines to their clients. Another alternative is to join a buying group with nearby goat or sheep owners but they must all agree to the same biosecurity precautions – see <https://goatvetoz.com.au/>. In areas of Australia that are deficient in cobalt and hence goats will not be able to make Vitamin B12, there is a Glanvac 3 vaccine with added Vitamin B12 that is registered for goats. This is safe to use as any excess Vitamin B12 is excreted in the urine. There are Glanvac vaccines with added selenium but their use should be discussed with your vet before deciding to use.

The other clostridial disease

Glanvac 6 and 5 in 1 vaccines protect goats from the following other clostridial diseases:

- *Clostridium novyi* or Black disease which is caused when these bacteria grow in the liver damaged by liver fluke
- *Clostridium septicum* or gas gangrene
- *Clostridium chauvoei* or black leg

If you do not have liver fluke on your farm then there is no need to vaccinate your goats for black disease. There are maps available showing where liver fluke are likely to occur.^{xiii} Your local veterinarian will know if other farms in your district have liver fluke. However not all labs will pick up liver fluke eggs as they are heavier than normal worm eggs so it is necessary to ask the lab if they do test for them. Unfortunately liver fluke eggs are only shed intermittently so multiple faecal samples will be needed. Some labs can also use an ELISA test. You can also search for the snail intermediate host in wet areas of your farm. The NSW DPI have an excellent fact-sheet to help identify these small snails – https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0010/153100/Identifying-liver-fluke-snails.pdf. If you have these snails, then get your goats tested for liver fluke. If you have liver fluke then you must use Glanvac 6 to protect against black disease, a clostridial disease that occurs when the bacteria grow in the damaged liver. However if using Glanvac 6, then you will get larger lumps after vaccination and will need to vaccinate more often for enterotoxaemia as the protection is

shortened if using a vaccine that has many diseases that it protects against. Read more about liver fluke and black leg here <https://www.dpi.nsw.gov.au/animals-and-livestock/sheep/health/internal-parasites/liverfluke-disease-sheep-cattle> . Goats may be less susceptible as they are reluctant to graze wet areas. In a literature search in June 2025, I could find no reports of these 3 diseases in Australian goats. If using Glanvac 6 or 5 in 1 or 7 in 1, then enterotoxaemia protection will be reduced, so vaccinations should be every 4 months.

Leptospirosis

Leptospirosis is caused by the bacteria, *Leptospira interrogans*, and is zoonotic (can be transferred to humans). But there are a large number of serovars (subtypes) including Hardjo, Pomona, Grippotyphosa, Canicola, Ballum, Icterhemorrhagiae, Tarasovi, and Australis.^{xiv} Goats have been found with antibodies to leptospirosis across the world but reports of disease are few. In Mexico it was found that 14% of 389 goats had antibodies and *Leptospira sejroe* was the most predominant serogroup.^{xv} In contrast, serovar hardjo was more common in Brazil.^{xvi} Overseas, leptospirosis has caused severe disease in kids or infertility, abortion, and occurrence of stillbirths in adult goats.^{xvii xviii} ^{xix}. A vaccine is registered for cattle in Australia but its use in goats (if leptospirosis was found in a goat herd) would need a vet's prescription.

Vaccine Reactions

The best chance of reducing lumps and swelling is to use sterile techniques and the fewest number of vaccines needed. Sterile technique means wiping the skin with metho first before injection and ideally a new ¼ inch needle for each goat or if using a gun, frequent changes of needles. Don't vaccinate goats if coats are wet with rain. The use of multiple agent vaccines is associated with larger reactions and more importantly shorter protection against enterotoxaemia.^{xx} Vaccines have an adjuvant added so the animal's body so they take notice of the killed bacteria in the bacteria and make antibodies against them. Different adjuvants can be used in vaccines and some can cause larger lumps and/or better antibody response than others.^{xxi} There is a video on my goatvetoz showing how I give subcutaneous injections – see <https://www.youtube.com/watch?v=MYUqqRSGpug> .

Gudair

Gudair is registered as “....for the control of Johne's disease in sheep, and as an aid in the control of Johne's disease in goats.” It is given once to kids around 1-4 months of age and gives lifetime protection. The pros and cons of vaccination with Gudair are summarized in the following table:

Advantages of Johne's Disease Vaccination	Disadvantages of Johne's Disease Vaccination
Economic benefit – longer survival, better milk production, less animal welfare issues	Cost (at least \$490 each year plus cost of the special vaccinating gun)
Shedding of JD bacteria is reduced	Infected vaccinated goats will shed bacteria from gut eventually
Clinical JD is delayed	Infected vaccinated goats will still die eventually
Vaccination allows time while eradication or control program reduces levels within the herd and on the pasture, which takes years	Can no longer use blood tests, only faecal culture tests, which can take 12 to 14 weeks and are more expensive. However the new faecal PCR test (not yet approved in goats) could overcome this disadvantage. A PCR test of faeces is only available in some states

Killed vaccine so no risk of mutations as could happen with a live vaccine	Vaccine reactions in kids
The MAP accepts vaccination with special rules re vaccination e. g. MN1 V.	Danger of severe reaction if accidentally vaccinate a person. However new shielded vaccine guns have reduced this risk.
	If vaccinate adults and they already have JD, vaccine reaction in goats can be severe and possibly the goat can quickly develop clinical JD.
	May not be able to export depending on the importing country's requirement
	Special ear tags are needed in some states

BarbervaX®

BarbervaX®, which is the vaccine against barbers pole worms (*Haemonchus contortus*) has given mixed results in goats^{xxii} and hence registration was not progressed in Australia for goats, only sheep. Research in Brazil found it reduced worm egg counts in both breeds it only improved Packed Cell Volumes and total proteins in Anglo-Nubian but not Saanens.^{xxiii} It can however be prescribed by veterinarians for goats. Goats will be “off colour” a day or two post vaccinations which must be given every 6 weeks, (after an initial 2 priming doses) during the barbers pole worm season. It does not have a with-holding period and can be used in milking goats. For more information see <https://barbervax.com/>.

Automatic vaccination guns

The Glanvac SafeShot vaccinator is recommended for all Glanvac vaccines See <https://www2.zoetis.com.au/livestock-solutions/sheep/ram-health/best-practice-vaccination-for-rams> for their set-up, use maintenance and clean up. The Sekurus vaccinator is recommended for Gudair vaccines (see the link above) as it provides better protection from accidentally injecting yourself, which can have serious consequences for people.

LPA Audit

Most vaccines must be stored in a refrigerator that can keep it between 2-8 degrees C and kept in the box (out of light). If you have a Property Identification Code (PIC) then you could be one of the 2,500 PICs chosen at random each year to be audited. As part of this audit you will need to show your records of when and with what you vaccinated your goats including the Vaccine Expiry Date and if that vaccine is not registered for goats then you must also show your vet's prescription – see <https://www.integritysystems.com.au/animaltreatments>. This website shows a livestock treatments form recommended by LPA and it requires the batch number and expiry date for all vaccines (which is printed or embossed on the cardboard box). <https://www.integritysystems.com.au/globalassets/isc/pdf-files/lpa-documents/lpa-records-templates/lpa-02-livestock-treatment-record-form.pdf>

VACCINATION IS LIKE INSURANCE- IF YOU WAIT UNTIL YOU NEED IT, IT IS TOO LATE

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