Alpaca Health

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Health and Illness.

With appropriate care, alpacas maintain very good health. As with all livestock, occasional health issues are found and this page may help the reader to recognise these.

Please note: this information is provided only as a guide to the commoner illnesses in alpacas. If an owner cannot quickly determine the cause of any abnormal symptoms or behaviour by an animal, veterinary assistance must be sought.

It is very important that alpaca owners know the normal behaviours of each of their animals. Alpacas are stoic, meaning that they will try to hide the symptoms of any injury or illness. Knowing what is normal makes diagnosis of illness or injury far easier. Sudden and rapid weight loss is often indicative of health issues so condition scoring or weighing your alpacas on a regular basis is valuable. Moreover, visual clues such as lack energy, spending more time recumbent and reluctance to stand can indicate illness.

Notable in the treatment of alpacas is that very few (if any) drugs are approved for use in camelids by any national medicines regulatory body. Although a range of safe and effective drugs has now been established for use in alpacas, they are used "off label", that is, not specifically tested on them. Vets tend to approximate alpaca dosage rates based on those for sheep.

Following are some of the commoner and relevant conditions affecting alpacas in New Zealand.

- Poisonous Plants

  Alpacas will graze a wide variety of plants but a surprising number found growing in New Zealand paddocks and gardens are poisonous to most livestock and must be removed if within reach. There is a simple saying of 'if in doubt, pull it out" for good reason. Crias are most at risk as they will try plants that the adults avoid.

  The list of toxic plants is extensive but perhaps the most likely encountered in New Zealand would be Oleander , Foxglove , Hemlock , Woody Nightshade , Laburnum , Iris , Jerusalem cherry , Rhododendron and Azalea , Ragwort and Box hedging . Of these, hemlock and rhododendron/azalea are the most dangerous as they are relatively common and ingestion of even small quantities of any parts of the plant can be fatal. Should an owner believe that an animal has eaten any of these, veterinary help must be obtained immediately.

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- Dermatophilus

  This skin condition is familiar to many livestock owners and is known by many names: 'cutaneous streptothrichosis' (cattle, goats, and horses), 'rain-scald', ‘mud rash’ or 'mud fever' (horses), 'lumpy wool' (sheep), 'strawberry foot rot' (sheep and cattle) and is a causative factor in 'pastern dermatitis' (horses). It is caused by the bacterium *Dermatophilus congolensis* and can result in severe skin infections indicated by the formation of crusty scabs containing the microorganism. In alpacas, these lesions are most common on the back and wet, clumped wool may be found that is removable in clumps. The underlying skin is often reddened and weeping.

  The bacterium exists in two forms: filamentous and motile zoospores. The zoospore is resistant to heat and being dried out and as it is the dormant phase, it can survive in infected scabs for months. Transmission between animals is known to occur by direct contact but contaminated environments may also be an indirect means.

  Veterinary consultation is essential as the treatment will include antibiotics - fortunately the bacterium is sensitive a wide range. Povidone iodine shampoos or chlorhexidine solutions are also useful in clearing up the disease.

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- Ryegrass staggers.

  This is a condition caused by the endophyte fungus *Epichloë festucae* (var. *lolii*) which is found in the leaf sheath of perennial ryegrass pastures. The endophyte is a deliberate addition to the ryegrass seeds to deter insects, particularly the Argentine Stem Weevil, and increase grass growth rates. The condition is particularly common in New Zealand, possibly to the combination of endophyte-infected ryegrass and the practice of monoculture. This fungus produces several mycotoxins including lolitrem-B, peramine and ergovaline, which when ingested cause neurological symptoms [5] . The disease usually occurs in mid/late summer and autumn or after a drought when new grass is growing quickly. This condition mainly affects animals under 2 years of age but only some are affected and may be permanently so.

  In its mildest form, there are slight head tremors or head wobbling but the animal will often appear normal until it becomes excited or agitated. If left untreated, the condition progresses to head shaking, showing a high-stepping gait and a stiffness that can lead to poorly coordinated walking (ataxia). Later there may be complete loss of limb control and the animal will be prone to falling over. Once removed from the pasture, most animals will recover with no apparent residual effects. To achieve this, the patient should be stabled with another alpaca and provided with alternative feedstuffs such as hay, chaff and kibble. The recovery time is between one and three weeks. Veterinary treatment may include an injection with vitamin B_1 to eliminate the possibility of polioencephalomacia (thiamine deficiency), which exhibits similar symptoms.

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- Barber’s pole worm (BPW)

The parasitic nematode worm (*Haemonchus contortus*) infects the C3/abomasum stomach compartment where it attaches and sucks blood from the lining. The female BPW produces thousands of eggs every day which are expelled in the alpaca's faeces onto the paddock where they hatch, develop into larvae and are ingested during grazing. They then pass into the stomach of the new animal and attach to the stomach wall, thus the life cycle is complete. Infections are serious as large numbers of worms may be present in the abomasum ingesting the blood of the host animal and causing severe anaemia, weakness and ultimately, death.

Symptoms include very pale pink or white mucous membranes of the eye and mouth (gums) - these should be a strong pink colour. Animals are likely to have diarrhoea, show a loss of condition and be lethargic or collapsed due to the anaemia. Treatment involves immediate oral drenching of the animal or an injectable wormer.

It should be noted that *Haemonchus* eggs can survive for long periods on the pasture during dry weather. If the alpaca dung is not removed, large numbers of eggs can build up. Warm wet weather (especially in March and April) will cause the eggs to hatch and allow infection or reinfection of an alpaca.

Although conventional treatment is by routine drenching, there is now evidence of resistance to the drugs commonly used [25], a problem being seen worldwide. One approach now used is to drench only when an alpaca is shown to have *Haemonchus* eggs (or a burden of other worm eggs) is its faeces. Dectomax (Doramectin) given subcutaneously (SQ) is the usual choice although there is some discussion over the appropriate dosage for alpacas. Other drenches such as Matrix, a combination of abamectin, levamisole and oxfendazole can alternatively be used should resistance be encountered. More recently, two new approaches have been described in the literature.

- A vaccine has been developed [26] prepared from purified *Haemonchus* intestinal proteins. On injection, the animal's immune system generates antibodies that circulate in the blood. When the parasite feeds, these antibodies bind to the worm's intestinal lining and block digestion. The parasite starves so produces far fewer eggs to pass into the faeces and ultimately it dies.
- *Bacillus thuringiensis* crystal protein 5B (Cry5B). A form of this protein is currently widely used as a insecticide. However, it has now been shown as effective against *Haemonchus* (as well as other intestinal round/hookworms) in cattle, pigs, horses and sheep [47]. Predictably, there has not been any published testing of Cry5B in alpacas or llamas but efficacy is to be expected as the Cry5B protein is toxic only to the worms within the alpaca gut.

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- Fly strike (Myiasis).

  In New Zealand, fly strike is well-known as a serious condition in sheep, more commonly seen in regions with summer rainfall. Occasionally it can afflict alpacas when the fleece is short, if there is a skin lesion or the animal has rolled in faeces. An inspection of the animal for cuts is recommended after shearing although skin cuts and abrasions do occur due to vigorous rolling.

  Several species of blowfly may lay eggs around the wound or faeces and on hatching (12-24 hours), the maggots start to degrade and liquefy the underlying tissues. Toxins released by the decomposing tissues and ammonia secreted by the maggots are absorbed into the animal's bloodstream causing systemic illness, possibly leading to death. Once flystrike has started, the smell of decomposition attracts further flies to the infection site.

  Regular inspection of the herd will identify abnormal numbers of flies around any animal.

  Immediate veterinary treatment is essential as appropriate insecticides and antibiotics will be required.

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- Mites.

  Alpacas can be infected by mites with three species causing specific skin conditions, *Sarcoptes*, *Chorioptes* and *Psoroptes*. The mange mite (*Sarcoptes scabiei*) is likely the most serious of these parasites and causes sarcoptic mange, otherwise known as scabies. The mite burrows into the skin of the less hair covered areas such as the legs, ears and belly and these develop bald spots, show flaking and crusting. The skin may become thickened as the disease develops and the alpaca shows intense itching (pruritus). Scabies may be a significant zoonotic risk [20], i.e. it can spread to other animal species including humans.

  Chorioptes mites live their entire three week life cycle on the surface of the skin where they feed on dead cells. When caused by *C. bovis*, they are found particularly on the legs, feet and tail with symptoms of mild pruritus, alopecia and scaling of the feet and tail base resulting. Species identification is based on morphology (shape). Insecticidal sprays (eg. fipronil) are used in alpacas for eliminating Chorioptic mites as on contact it kills them within two hours and the treatment lasts up to one month.

  Psoroptes mites can infect alpacas causing crusting weeping lesions but these are more confined to the ears. The animal exhibits head shaking and scratching. The *Psoroptes* mite affecting alpacas may be the same species that causes sheep scab.

  In all cases, skin scrapings are taken from the affected areas and examined under the microscope. The morphology of any mites seen is used to diagnose the condition. Treatment of these mite conditions is by veterinary prescribed insecticides and it should be noted that all animals in the herd may need examination and treatment to prevent reinfection.

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- Tuberculosis (Tb).

  Tuberculosis is an infectious disease caused by the bacterium *Mycobacterium bovis*. It can affect a wide range of animals in New Zealand but cattle and deer are most at risk of contracting the disease. The common brushtail possum (*Trichosurus vulpecula*) is the main wildlife vector (carrier) of bovine Tb in New Zealand. This animal was introduced from Australia for the production of its fine fur. However, it is now endemic and estimates of numbers are certainly greater than 50 million. This possum is also responsible for significant damage to forests and the killing of native wildlife. The usual route of Tb infection is through the inhalation of droplets expelled from the lungs of an infected vector.

  The TBfree programme (through OSPRI) aims to eradicate bovine Tb from New Zealand through targeted control. As part of the process, the country is divided into Tb control areas with each having a specific testing frequency and movement control measures, depending on the risk of Tb transmission from an infected vector.

  As it is now established that camelids are susceptible (if resistant) to this disease, the AANZ) has set up a procedure for testing and reporting of camelid herd Tb status. The scheme is voluntary but all owners are strongly recommended to take part. Moreover, it is a condition of attendance at A&P shows that alpacas are tested and have valid certificates. All herd members over 6 months old must be tested to gain a "Whole Herd" status.

The single tuberculin test (STT) is approved for use as a primary Tb test for alpacas. An accredited vet will need to apply the test to an area of skin either at the neck site (about level with the animal's back) or behind the foreleg. The neck site is the AANZ preferred and recommended site. Examination of the test site is made two or three days later for any skin reaction.
A detailed Tb reference card from the AANZ archive can be downloaded.

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- Ulcerative Pododermatitis.
  Alpacas kept in damp or even wet paddocks may develop pododermatitis. This can be seen as blisters and sloughing from the footpads and often there are infections caused by anaerobic bacteria, frequently *Fusobacterium necrophorum* [34] . Veterinary treatment involves the removal of damaged tissue, antiseptics and possible use of foot protection to allow healing. The growth of new tissue on the footpad may take many weeks and is helped by a dry environment. Antibiotics are often given.

References.

Most of the literature below can be accessed by clicking on the highlighted link. Some links will access the appropriate web page from which the article can be downloaded but others will immediately start downloading the full reference.

4. Boyd, E. (2016). Management of Facial Eczema. M.Vet. Stud., Massey University.

5. Philippe, G. (2016). Lolitrem B and Indole Diterpene Alkaloids Produced by Endophytic Fungi of the Genus Epichloë and Their Toxic Effects in Livestock. Toxins (Basel), 8(2): 47. DOI: https://doi.org/10.1038/ncomms2516

20. Foster, A. (2008). Skin diseases of South American camelids. Br. Vet. Zool. Soc. Proc., May: 30-32 .

21. Sinclair, D.P. and Howe, M.W. (1967). Effect of thiabendazole on *Pithomyces chartarum* (Berk. & Curt.) M. B. Ellis. N.Z. J. Ag. Res., 11(1): 59-62 . DOI: https://doi.org/10.1080/00288233.1968.10431634

22. Mitchell, K. J., Thomas, R. G. and Clarke, R. T. J. (1961). Factors influencing the growth of *Pithomyces chartarum* in pasture. N.Z. J. Ag. Res., 4(5-6): 566-577 . DOI: 10.1080/00288233.1961.10431614

25. Waghorn, T.S., Leathwick, D.M., Rhodes, A.P., Lawrence, K.E., Jackson, R., Pomroy, W.E., West, D.M. and Moffat, J.R. (2006). Prevalence of anthelmintic resistance on sheep farms in New Zealand. N.Z. Vet. J. 54(6), 271-277.

26. Nisbet, A.J., Meeusen, E.N., González, J.F. and Piedrafita, D.M. (2016). Immunity to *Haemonchus contortus* and Vaccine Development. Adv. Parasitol. 93: 353-396.

34. Kumar, A., Anderson, D., Amachawadi, R.G., Nagaraja, T.G. and Narayanan, S.K. (2013). Characterization of *Fusobacterium necrophorum* isolated from llama and alpaca. J. Vet. Diag. Invest., 25(4): 502–507.

47. Sanders, J., Xie, Y., Gazzola, D., Li, H., Abraham, A., Flanagan, K. Rus, F., Miller, M., Hu, Y., Guynn, S., Draper, A., Vakalapudi, S., Petersson, K.H., Zarlenga, D., Li, R.W., Urban, J.F., Ostroff, G.R., Zajac, A. and Aroian, R.V. (2020). A new paraprobiotic-based treatment for control of *Haemonchus contortus* in sheep. Int. J. Parasitol.: Drugs and Drug Resistance, 14: 230-236 . Back to the top

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