

Alpacas and hypothermia (cold stress)

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Introduction

It may seem strange that animals who have originated in one of the coldest locations on earth can succumb to hypothermia or cold stress. The fact that such a thing can happen during the warmer parts of the year here in Australia may seem even stranger at first. However, adult alpacas can suffer from cold stress during freak cold snaps following shearing, when they are without the protection of their exceptionally warm fleece. Older animals, nursing mothers, thin animals and those suffering from nutritional deficiency are particularly susceptible. Very young animals born during autumn and late winter can also be at risk.

Weather conditions to watch for are a sudden and severe drop in temperature, prolonged rain and cold wind. Each can be dangerous on its own but they are especially deadly in combination.

Common sense husbandry practices and property improvements can substantially minimise the risk of hypothermia. As well, having an emergency plan and a supply of treatments on hand in the event of cold stress is a wise move. Animals with hypothermia may live for some hours, which means they have a good chance of recovering if quick action is taken.

Symptoms

Hypothermia occurs when the body temperature of an alpaca falls below the normal range of 37.5 to 38.6 degrees C. Some breeders have observed body temperatures as low as 32 degrees C while others were not even able to get a temperature to register on the rectal thermometer. The drop in body temperature in turn causes poor circulation.

Apart from low body temperature, shivering would seem to be the other obvious symptom but in fact hypothermia is not always easy to recognise.

Shivering is simply a contraction of muscles and is the body's way of generating heat. Once the alpaca has used up its store of energy, shivering stops and the body temperature begins to drop. However, it is easy to miss this initial stage of hypothermia, especially if the onset of bad weather occurs at night.

Other signs of hypothermia include slow and shallow breathing, a slow heart rate (around 16 beats a minute), mental depression and coma.

Shivering also occurs when the animals begin to warm up. At times shivering can be confined to the head but at other times the whole body. One breeder has likened it to the symptoms of staggers.

Adult alpacas

Breeders whose animals were severely affected during the cold snap of February 2005 reported that adults were often found in the paddock in the cush position and would or could not stand. One breeder found a young male lying flat on his side, with the only noticeable

movement being in the eyelids. When lifted for transport, the alpacas could not straighten their legs and they were also reluctant to open their jaws when their owners tried to administer electrolytes and other oral treatments.

Crias

Fowler and Fowler state that picking up a cria suffering from cold stress is like picking up a limp rag. They add that, while low body temperature and other typical symptoms may well indicate hypothermia, a cria in the final stage of blood poisoning can also show the same signs. However, animals suffering from blood poisoning will not become brighter as their body temperature returns to normal.

Treatment

It is important to get the animals under shelter and warm as soon as possible. A barn, shed or stable with a power supply makes an ideal shelter and treatment centre. However, this is not always possible so breeders make do with whatever is to hand and have even taken severely affected alpacas inside the house if no other warm, dry spot is available.

If the alpacas are not too badly affected, stabling them somewhere dry and providing plenty of feed (good quality hay for preference) should be adequate. Unlikely though it may seem, digestion of feed that has a high fibre content generates considerably more body heat than concentrates. Other feeds that are good sources of energy and therefore body heat are crushed lupins and crushed or steamed barley and oats.

Where animals are more severely affected, stronger measures are needed to restore their body temperature.

The ideal is to call on your local veterinarian for help in treating severely cold-stressed animals. Be aware, though, that your vet may not be able to respond immediately to a call for help, as he or she may already be busy treating other livestock. You will therefore have to administer emergency help until your vet arrives.

Be careful when raising the body temperature of a hypothermic alpaca. One's natural instinct is to do it as quickly as possible but that can be extremely harmful. The external body temperature should not be increased in advance of the internal temperature, particularly with animals that are suffering from severe cold stress.

Raising internal body temperature

Warm glucose fluids can be administered intravenously but this should be done by a veterinarian.

Ketol (a product that increases the internal body temperature) can be syringed down the alpaca's throat. Also have on hand injectable Vitamin B1 and give affected alpacas 3 to 5 ml, depending on their size. These two measures are helpful as a preliminary treatment if a severely affected alpaca needs to be taken to the vet for intravenous administration of warm glucose.

Raising external body temperature

Floats or stock crates can provide suitable emergency shelter as well as being useful for moving the alpacas out of the paddock. Breeders have also used vans, and electric fan heaters and 500 watt halogen work lights can be hooked up to power and installed in the van to warm the animals. The van's motor can also be left running to get extra warmth from the vehicle's heater. The work lights should be placed about a foot from each animal and, along with the heater, moved from left to right to prevent burning of the skin.

Hot water bottles and heated wheat bags can be used to warm smaller alpacas but will not be adequate for larger animals. Alpacas can be covered with quilts, blankets or even hessian bags and warmed by using hair dryers on the High setting to blow warm air underneath. However, it is generally not possible to keep this up for long periods such as the two to eight hours needed to restore the alpacas' temperature to normal. An electric blanket can therefore be draped over affected animals so it is not too close to the skin and left on the lowest setting until they have recovered.

A cria with hypothermia can be successfully warmed up by bathing it. Gradually immerse the cria in warm water (40.5 to 45.5 degrees C, or no hotter than is comfortable for your elbow when dipped in the water) in a large kitchen or laundry sink. The water should be deep enough to cover the cria's back. Hold the cria's head up as it may not have enough energy to do this itself.

While the cria is in the bath, gently massage it all over but concentrating on the extremities to increase circulation. Monitor the cria's temperature and take it out of the bath and dry it as soon as its body temperature stabilises at 37.8 degrees C. Cover the cria with a towel while drying it in smaller sections with a hair dryer on low setting. Put a thermally insulated coat on the cria for extra warmth. If no cria coat is available, a child's jumper can be used as an emergency substitute. Put the cria's front legs in the sleeves, then roll the sleeves above the cria's knees.

Rehydration

Strange though it may seem, hypothermic alpacas are generally also dehydrated. It is therefore important to administer electrolytes such as Vytrate or Lectatde as part of their treatment. Make up the electrolyte in warm water according to the instructions on the label and administer it orally using a bottle or 60 ml syringe. Take care that the fluid does not go into the lungs, as older animals may take some time to recover their swallowing reflexes.

After-effects

Unlike heat stress, hypothermia does not generally have a lasting effect on affected animals. However, with female alpacas it can result in still-births, abortions and small cria.

Prevention

It is easier to prevent hypothermia or minimise its impact than to treat a group of affected animals.

Ensure your property has adequate shelter.

The provision of shelter is most important. However, this can often take time to achieve, especially if you have acquired a property that does not have established tree cover. Windbreak plantings need five to ten years to develop to the stage where they give adequate protection.

It is beyond the scope of this information sheet to give details about how to establish shelter belts but you can get this information from your local department of agriculture or primary industries. This is more appropriate as well as the staff can advise which trees do best in your area.

As a general guide, though, belts comprising three or more rows of trees, graduating in size from smallest on the outside of the windbreak to tallest in the middle are most effective in deflecting wind and rain. Also, X-shaped windbreaks with “arms” 3 to 4 m long give excellent protection as they provide shelter from any direction.

Permanent structures such as sheds, stables or barns are valuable, especially if there is a need to treat alpacas with severe hypothermia. However, if it is simply a case of needing to provide shelter, there are some quick and relatively cheap ways of achieving this.

- Protective structures do not necessarily have to be tall as the alpacas will cush behind them so, where fences meet at corners, stretch shade cloth or fix sheeting along the sides to provide “walls”.
- A similar strategy can also be used to extend the shelter provided by existing structures.

Build up an emergency supply of feed.

Have on hand an emergency supply of suitable feed as heating your animals internally is a good way to both prevent and treat cold stress. Feeds with a high calorific value include:

- good quality hay such as lucerne or clover;
- crushed lupins;
- steamed or crushed oats, and
- steamed or crushed barley.

Have a cold stress “first-aid” kit on hand.

Try to collect a store of old towels, blankets or hessian bags for emergencies. Synthetic feed bags are also useful as emergency “stretchers” for moving severely affected animals into transport or shelter.

Another wise investment is a supply of cria coats in a range of sizes to cover young animals up to the age of about three months, by which time they should have grown enough fleece to protect them from all but the very worst weather. Fleecy-lined dog coats with a water-proof outer shell make excellent cria coats and can be obtained fairly easily at reasonable cost from pet shops.

Keep a supply of electrolytes on hand as well as injectable Vitamin B1 and Ketol.

Have a rectal thermometer and know how to use it.

It is also a good idea to have an emergency supply of straw for bedding, extra insulation and to support severely affected animals in the cush position.

Be alert for severe weather warnings.

Most breeders try to organise for shearing or birthings to take place at a time appropriate to the climate of their region. However, freak weather is by its very nature unpredictable so it is still important to be alert for signs of trouble. The Bureau of Meteorology provides farmers and graziers and storm warnings which are often broadcast on the ABC's regional radio stations and on television weather reports.

Be aware, though, that TV weather bulletins can differ widely in their predictions. As well, by the time one gets to see the evening news, it is generally too late to take action before dark. Consequently, it is wise, if you have internet access, to check the Bureau of Meteorology's website regularly throughout the day during high-risk periods. Then alpacas can be moved to shelter well in advance of trouble, without anxiety or stress to them or their handlers. The address is www.bom.gov.au and forecasts are updated throughout the day, starting from about 5:30 am.

References

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