

# Queries on Quarantine

An interview with Dr. Stacey Byers,  
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By Deb Blakey

Owners may think this article is over-reactive, extreme, and presents a “sky is falling” perspective, and some may think they will never need these recommendations or their herd is already safe. Due to extensive camelid show and breeding activities in North America, both internal and external biosecurity protocols are particularly important. There are some obvious holes in quarantining and biosecurity methods evidenced by the outbreaks of bovine viral diarrhea virus (BVDV), the recent acute respiratory disease (aka “the snots”), *Eimeria macusaniensis* (aka *E. mac*), and instances of post-show diarrhea. Aspects of the following information may not apply to all farm situations but much should be implemented into day-to-day management strategies. The advice provided is based on veterinarian knowledge and experience gained from other livestock species to reduce similar mistakes from occurring in the alpaca and llama industries.

**Q** What is quarantine and why is it important?

**A** Quarantine is the intentional, purposeful isolation of an individual or group of animals. A common source of a disease in a stable group of animals is the addition of new animals. It is used in most herd situations to protect a herd from infectious agents that new additions may be carrying or separating sick animals to decrease the spread of disease and provide treatment and monitoring. The words “quarantine” and “biosecurity” often imply something sinister or threatening; however, they are actually beneficial, economical, and necessary. Many owners use guard dogs or llamas to protect against visible threats such as roaming dogs or coyotes; quarantine can be thought of as the equivalent protection against the invisible invaders. All the imported alpacas in the United States and Canada went through a quarantine facility prior to admittance to the North American continent so the animals could be screened for known infectious diseases such as tuberculosis. While in quarantine, those animals could also recover from any nonclinical (asymptomatic) conditions that might exist.



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**Q How do we do quarantine?**

**A** Quarantining involves housing new or returning animals in an area separated from the permanent group. The quarantined animals are housed, fed, and watered separately from the main group and are closely monitored for signs of illness, periodically tested for various diseases such as parasites, and treated as needed. After a period of time based on clearance of expected diseases, the animals can be introduced into the herd or kept separate, depending on the farm management policy.

**Q How long do you recommend an animal coming or returning to my farm stay in quarantine? Why that amount of time?**

**A** There is not one correct time period. However, veterinarians and researchers at Washington State University Veterinary Teaching Hospital and Washington Animal Disease Diagnostic Laboratory (WADDL) are recommending a quarantine period of four weeks. This time period is based on current research of several diseases including *E. macusaniensis* and BVDV. Animals to be quarantined

include new arrivals and those returning from breeding facilities, shows, sales, etc. Animals going to various shows in a season should probably be housed separately from the permanent herd until the end of the show season.

**Q Are there any tests we should give an incoming animal while in quarantine? At what time frame during this period should we run these tests?**

**A** Testing depends on how the incoming animals are arriving (private transport, hauler, etc.), pregnancy status, health status, medical history, and source of animals (sale, show, breeding facility, private farm). A management plan should be developed with your veterinarian and followed for every incoming animal. Two commonly recommended tests are a negative PCR BVDV test to verify persistent infection status and fecal examination to detect various parasite levels. Other tests relevant to your specific location should be discussed with your herd veterinarian.

A common misconception with BVDV testing is that a PCR negative test means an animal cannot be infected at a later time. A negative test

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offers no protection except to show that the animal is not persistently infected or transiently infected at that point in time. A four week quarantine period should allow an animal to clear a transient BVDV infection; however, animals can be tested to verify this at the end of their time in quarantine.

Currently *E. macusaniensis* is thought to have the longest “incubation” stage of all the common internal parasites affecting camelids, so we recommend a fecal examination at the end of the quarantine period. Parasites typically increase with stress from transport, shows, and pregnancy so the duration will allow the animal to settle in, adjust to the new food and water, and allow the immune system to bring parasite infections back to normal levels. Treatments for parasites should be performed prior to exiting the quarantine pen and animals rechecked as needed.

**Q We will be tending and handling the animals in quarantine. Do we need to use any special procedures in handling? How does quarantine apply to feeding? Other activities?**

**A** The pen should have dedicated equipment, such as: shovels and rakes; feed and water buckets; coveralls; boots or shoe covers; and halters and leads that are never used elsewhere. Ideally, personnel working with the quarantined animals should not have contact with the non-quarantined animals. If this is not possible, normal hygiene practices should be followed such as washing hands between pens, removing debris from clothing and footwear, and treating sick animals after the healthy animals. The quarantine pen and animals within it should be cared for last to prevent contamination of your other pens and pastures.

Quarantine pens should be located down-wind of the other pens, and the greater the separation distance, the better. Lower risk animals (i.e. not moms & crias) should be housed closest to the quarantined animals.

Owners with sick animals should consider delaying transportation due to disease complications to their own animals or potential transmission to other animals.



Eric Lorraine and Chris Barry

**Q** If I am doing a mobile breeding, where either my female or stud is going to an outside farm, or someone else's female or stud is coming to my farm, how can I apply quarantine procedures during the short duration of the breeding?

**A** Mobile breeding is one method to reduce the need for quarantining animals but does not completely reduce the risk of disease transmission. A "neutral" area such as a pen, stall, or paddock is designated for breedings and is only used for this purpose. The area is cleaned and disinfected after the visit (e.g. remove spit and feces) and left empty between uses. There is still a risk due to nose-to-nose contact, spitting, and fluid transfer. Some owners, therefore, may still choose to quarantine the stud and female, post-breeding.

**Q** Should a female be kept in quarantine for a month before being introduced and bred to my stud? If not, couldn't there be disease transferred nose-to-nose since they often do touch noses during breeding?

**A** If you, the owner, do not wish to leave the animal in quarantine at your farm for a month before being bred, you can treat this as a mobile breeding by using a "neutral area" for breeding

and then return her to the quarantine pen for the duration of her stay. The recommendations only reduce the risk to animals as it is impossible to totally eliminate disease transmission (*see information on mobile breedings*).

**Q** An alpaca is being shipped to my farm. She's had her vet check, health certificate, BVDV negative status, etc. It seems every precaution has been taken. Does she still need to go into quarantine once she arrives at my farm?

**A** Absolutely!

**Q** What if there are several animals coming to my farm, all from different farms. Should they each go into individual quarantine areas? If I put them all together couldn't they infect each other if they had a contagious disease?

This is an interesting predicament that some farms may have to compromise on. Most livestock operations have an "all in – all out" policy where animals enter and exit quarantine at the same time. Therefore farms receiving many animals should have more quarantine pens. For smaller farms with space limitations, all involved owners will need to be in agreement about the situation.

If only one pen is available, animals enter the pen at various times but the group does not exit until the last entering animal has been present for the four weeks. Owners bringing animals would have an inherent risk since animals from various farms would be co-mingled. Therefore owners would be wise to ask the farms where they will be sending their animals what the receiving farm's policy is on quarantine and how they manage it with incoming animals. Owners should determine if the risk is reasonable.

**Q** What would you suggest that transporters require before transporting animals from one farm to another?

**A** An excellent method to transmit disease is to take animals from various locations, stress them by upsetting the herd hierarchy, place them in a confined area, and move them around the country into new environmental conditions. The term "shipping fever" within the bovine industry is an aptly named syndrome and millions of dollars have been spent to try and reduce the damage and death produced by the infectious agents. To minimize disease transmission, we do not recommend co-mingling animals from various farms during transport.

Since it is not possible to totally eliminate the practice, transporters should require a few things from owners to reduce the disease impact. They should request a negative PCR BVDV test showing the animal is not persistently infected and a recent health certificate (even if not transporting out of state) signed by a veterinarian showing the animal did not have a communicable disease at the time it was examined. The animals should appear healthy when picked up.

Owners with sick animals should consider delaying transportation due to disease complications to their own animals under the stress of transport and potential transmission to other animals. A hauler (and receiving farm) should feel free to use their option to deny entry to any animal showing signs of disease such as diarrhea, coughing or sneezing, nasal discharge, etc.

**Q** Ideally, what would you suggest be required to bring an animal to a show?

**A** All animals going to a show should have a health certificate signed by a veterinarian and negative BVDV PCR test. As mentioned above, a negative BVDV PCR test offers no protection except to show that the animal is not persistently infected or transiently infected at the time the blood sample was taken. Animals may be experiencing a transient BVDV or other contagious infection on arrival. A veterinarian should perform admittance examinations on all animals either in the trailer (preferable) or in a pen specifically dedicated to admittance examinations to check for external parasites and signs of disease prior to admittance into the show facility. Any animal not passing the vet check must remain in the trailer and cannot be shown. The examination pen should be disinfected between groups of animals especially if any urination, defecation, or spitting occurs. Shows can apply additional restrictions for things such as body condition if they so desire. Owners typically become upset when the veterinarian refuses admittance to their animals, but the veterinarian's role is to protect the animals.

**Q** Most shows have pens set up side-by-side. Animals from Amazing Alpacas Ranch have direct nose-to-nose contact with the animals in the next pen from Precious Pacas Farm. How can we protect our animals under these circumstances? Are there any other precautions we could take at a show?

**A** It would be best not to have nose-to-nose contact between animals from different farms and participants should work with the show hosts to change the housing policy. If the shows do not wish to change their policies, then consider if it is worth the risk to you to place your animals in that show. To reduce risk somewhat, some owners use skirting material along the sides of stalls that have a common fence with the next pen. Some shows offer stalls that have solid walls between pens. These offer much more protection. Alpacas should



Eric Lorraine and Chris Barry

A “neutral” area, a pen, stall, or paddock can be designated for breedings and is used only for this purpose. The area is cleaned and disinfected after the visit and left empty between uses. This method does not completely reduce the risk of disease transmission.

not be allowed to “visit” with alpacas from other farms when walked down the aisle ways or waiting in line to go into the show ring.

Avoid taking crias or pregnant animals to shows as these are the most susceptible to diseases. The post-show diarrhea cases and respiratory disease outbreaks last autumn are two examples of diseases seen in recent years following shows. Hand sanitizers should be readily available for visitors to disinfect their hands between pens.

**Q** When we return to our farm with our show animals, what should we do with them once home?

**A** Quarantine! If you have a group of animals going to several shows, consider maintaining them as a group in a separate location, pen, or pasture until after the show season is completed.

**Q** How do we clean our quarantine pen or area after the quarantine period, especially if an animal has had something transmissible? What products are best to use to disinfect? What should we be disinfecting and when? How should we disinfect trailers, walls, feed and water buckets, shovels and rakes, boots and clothing, flooring, and the outside paddock and dirt under the poop pile, the fences, etc?

**A** Farms need to remember that attention to appropriate cleaning and disinfection procedures for housing, feeding, and equipment is important for the maintenance of both internal and external biosecurity practices. The quarantine pen should always be considered a contaminated site and never be used to house animals from the main herd, even after cleaning and disinfecting.

Halters, leads, and blankets used in the quarantine pen should be soaked in a disinfectant, and clothing should be washed regularly.

Cleaning should begin with removal of all organic material including feed, bedding, and fecal material. Impervious structures such as trailer walls, buckets, waterers, rakes, boots, etc. can be disinfected with common disinfectants such as household bleach at a dilution of 1:100 and ten minutes of contact time or a 1:10 dilution with one minute of contact time. Halter, leads, and blankets used in the pen should be soaked in a disinfectant and clothing washed regularly. Plywood and wood fencing are difficult to disinfect so organic material should be removed and the wood can be sprayed down with the disinfectant solution. Other commercial viral and bacterial disinfectants such as Virkon-S®, Tek-trol®, etc. can be used as well, follow label instructions. Soil cannot be completely disinfected so the fecal piles, bedding, and feed should be removed and the pen left empty between uses. Sunlight is an effective means of killing off many pathogens.

**Q** How should we set up quarantine pens on a limited-space property? What if each pen is closer than spitting distance?

**A** In some situations, space constraints may limit the number of animals that can be housed on a property. If you do not have the space to quarantine properly, you may not be able to accept outside animals for boarding, and you may need to house your show animals off-site for the show season. Obviously, this is not ideal but farms should try to minimize disease transmission. Quarantine pens should be located down-wind of the other pens and lower risk animals should be housed closest to the quarantined animals (i.e., do not house pregnant animals or crias next to the quarantine pen). Closely monitor the animals for signs of disease as it may just travel down the line of pens. This commonly occurs with respiratory diseases.

**Q** Some diseases or infections are transmitted over long distances by wind, birds, and insects. How would we ever quarantine for something like this?

**A** Owners can only minimize the risk of transmission. The greater the separation distance, the better; however, prevailing winds, insects, people, birds, and wildlife can still inadvertently transmit diseases. The risks can be reduced by implementing biosecurity principles such as limiting visitors, controlling rodent and insects, and fencing to reduce wildlife access. Veterinarians and extension agents can often provide assistance with these aspects.

**Q** Can quarantine always be 100% effective?

No, unfortunately it is not possible to eliminate all potential risk factors. Owners and workers can only be vigilant and reduce the risk and be prepared.

Reference:

Barrington GM, Allen AJ, Parish SM, Tibary A. Biosecurity and biocontainment in alpaca operations. *Small Ruminant Research*, 2006; 61:217-225.

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