Summer 2025

The Journal of RMLA

Welcome to RMLA!

– – – Mission Statement – – –

The mission of the Association shall be to educate the members and the public as to the breeding, raising, care and use of llamas and alpacas.

RMLA Board of Directors

President
Judy Glaser
Kiowa CO
303-646-6311
judy.glaser@yahoo.com

Vice President
Nancy Wilson
Camp Verde AZ
928-220-5553
spinllama@msn.com

Secretary
Courtney Chalmers
Anthem AZ
928-821-0461
chalmerscourtney3@gmail.com

Treasurer
Jessie Kaehn
Elizabeth CO
303-910-9303
kaehn.jessie@gmail.com

At-Large
Julie Hall
Elizabeth CO
303-910-2134
jmhbluehorse@yahoo.com

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Chairpersons, Active Committees

Bookstore
Distribution: **Karen Miller**
Accounting: **Marilyn Arnold**
303-807-2051
rmlaaccounting@yahoo.com
Liaison Jessie Kaehn

Facebook
Sandy Schilling
RMLAmembershipchair@gmail.com
Liaison Julie Hall

E-Blasts
Nancy Wilson
928-567-6684
RMLAeblast@gmail.com
Liaison Julie Hall

Finance
Lougene Baird
808-747-5023
lougenebaird@outlook.com
Liaison Judy Glaser

Library
Sandy Lockwood
303-838-9554
Rmlalibrary3@gmail.com
Liaison Jessie Kaehn

Education/Events/Marketing
Mary Wickman
719-651-8871
Mwickman1@gmail.com
Liaison Judy Glaser

Membership
Sandy Schilling
602-403-8166
RMLAmembershipchair@gmail.com
Liaison Julie Hall

Youth, 4-H, FFA
Heather Rohlwing
Heather@99pineranch.com
Liaison Jessie Kaehn

History
Lougene Baird
808-747-5023
lougenebaird@outlook.com
Liaison Judy Glaser

Website
Content: **Kathy Stanko**
970-256-7716
Rmlawebsite@gmail.com
Liaison Julie Hall

Membership Database:
Sandy Schilling
602-403-8166
RMLAmembershipchair@gmail.com
Liaison Julie Hall

The Journal
Kathy Stanko, Editor
970-256-7716
Rmlaeditor@gmail.com
Liaison Courtney Chalmers

Journal Committee Members:
Fiber, Nancy Wilson
Graphics, Ron Hinds
Research, Ron Baird & Keith Payne
Proofreader, Marilyn Arnold
Pack, open

About the Journal

The Journal of RMLA© is a quarterly publication of the Rocky Mountain Llama and Alpaca Association (RMLA). The RMLA Journal Committee and the Board of Directors reserve the right to select and edit all articles and advertisements submitted.

The information in The Journal is not intended to be a substitute for qualified professional advice. Readers are encouraged to consult with their own veterinarian, accountant or attorney regarding any questions concerning their animals or business operations.

RMLA is not responsible for any losses resulting from readers' failure to heed this caution. The views expressed by the authors of articles are not necessarily those of the Rocky Mountain Llama and Alpaca Association, Inc., its officers, directors or members.

To request permission to reprint content from the Journal, you must obtain permission from the author. Send your request to Kathy Stanko, RMLAeditor@RMLA.com who will obtain the permission to reprint, then respond to you. Note "reprint request" in the subject line.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Table of Contents

Advertisers in This Issue

Cover Photo Courtesy of Susi Hülsmeyer-Sinay

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

From The Editor

Kathy Stanko, Editor, rmlaeditor@gmail.com

Welcome to summer and a time for exploring! I hope you are taking advantage of the long days and that your weather allows you to have fun with your llamas and alpacas. One of our llamas is named Boreas in honor of this pass shown in the photo.

In this issue, you might find some new avenues to explore. Our newest contributor, Rebecca Kern-Lunbery is a nutritionist extraordinaire. To date most of her experience has been with beef cattle, sheep and other farm animals. With this knowledge as a basis, she has eagerly taken on the challenge of learning everything she can about camelid nutrition. She has two articles in this issue, *Meeting Macros for Llamas* and *Forage for Camelids: Minerals*. Both articles will test your knowledge. And if you have a nutrition topic you would like her to explore, please send it to me and I will pass it on to her.

Summer is tick season. The article from the CSU Vets *Ticks, Camelids and the Rocky Mountain West* is a great review of the four types of ticks in the Rocky Mountain West. Who knew we had so many.

As promised, Part 2 of Al and Sondra Ellis' adventures over a lifetime can be found on page 26. Al continues to share the wealth of knowledge he has acquired about llamas, the Ccara llama in particular.

The RMLA Journal would not be complete without training articles, fiber articles, and events. They are all included. Enjoy exploring this issue and have a terrific and safe summer.

Journal Submission Dates, Ad Rates & Specifications

All of this information may be found at RMLA.com

Ad rates are quoted per issue. Lock in the current rate by purchasing an ad for four consecutive issues and receive a **5th ad for free**. You may change your ad once during the year.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

RMLA News From Your Board

It's RMLA Board election time again! RMLA is looking to fill a board position, for a three-year term. Your bio is due to Sandy Schilling by July 12th. Serving on the board is a great way to keep this great organization moving forward. I encourage everyone with a love of llamas and alpacas to volunteer. RMLA needs volunteers – could that be you?

The current board, which is comprised of four new board members and one previous board member, has been at hard work getting up to speed on all things concerning the RMLA. A new youth committee and chair have been formed, and new youth programs are being developed, as well as youth grants for well-deserving RMLA youth.

This is a great time to be a part of the RMLA. In addition to the quarterly journals, RMLA has many resources available to members, including blogs, previous journals, the *Caring for Llamas and Alpacas* book, and event insurance for qualified members and events! Check out all the perks on the RMLA website!

Have a wonderful summer and enjoy your animals.

Respectfully,
Julie Hall,
Board Member At-Large

New Members

RMLA continues to grow. We welcome our new members!

Kimberly & Jeff Surry, Larkspur, CO
Rachel Morrison & Vince Fucarino, El Rito, NM
Deborah Heidtbrink, Malcolm, NE
Angela & Chris Baltz, Estes Park, CO
Youth, Fishers, IN

Upcoming Events

August 11th – 13th, The Rocky Mountain Pasture Show, 2Bit2 Ranch, 5415 CR 59 Guffey, CO A double halter ALSA show. A single performance ALSA show. Rustic camping: no hook ups, no internet, but a porta-potty. Unplug for the weekend and enjoy the beautiful scenery, cooler temps, and all your llama friends! For more information, contact Jennifer Starr, rowan.starr@gmail.com.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

HEALTH/DISEASE

Ticks, Camelids, and the Rocky Mountain West: What Owners Need to Know

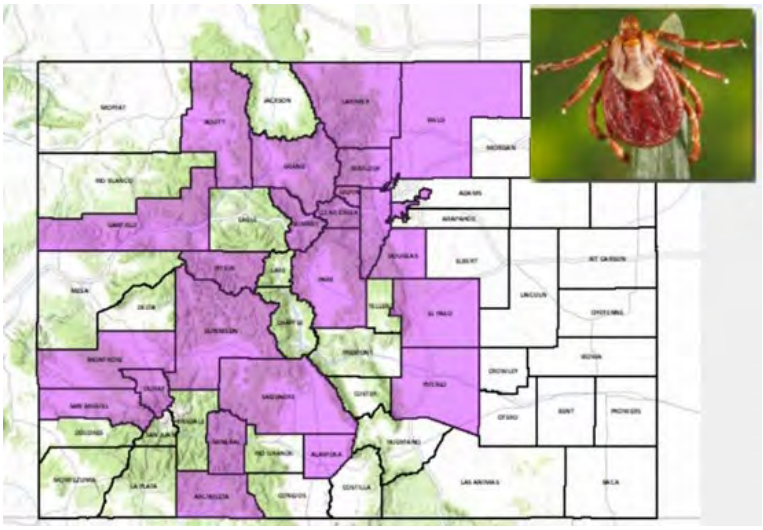
Dr. Kelly StillBrooks, DVM MPH DACVPM DABVP-Food Animal
Associate Professor, Dairy and Livestock Production Medicine
Colorado State University College of Veterinary Medicine & Biomedical Sciences

Introduction

The Rocky Mountain West provides an impressive diversity of terrain, climate, and ecosystems for camelid owners to enjoy with their herd. However, this same diversity — from arid plains to forested mountain zones — supports different species of ticks and risk for tick-borne disease. Key environmental factors influencing tick activity include temperature, humidity, elevation, and the presence of wildlife hosts such as deer, elk, rodents, and birds. Often underappreciated in camelid health management, ticks pose real and growing risks. This article aims to help owners understand the tick species that affect alpacas and llamas in the Rocky Mountain West, recognize clinical signs of tick-borne disease, and implement practical strategies for prevention and control.

Tick Ecology in the Rocky Mountain West

Ticks are most active from spring through fall, particularly during warmer months (April through September). However, some species may be active in milder winters, especially at lower elevations. Several tick species in the Rocky Mountain West are known to parasitize domestic animals, including alpacas and llamas. While camelids are less frequently affected by ticks compared to other livestock, they are still susceptible to infestations and the diseases ticks can transmit.



Occurrence of the Rocky Mountain Wood Tick from the CO Department of Public Health and Environment (2014-2019)

Four species of ticks are especially prevalent. Photos may be found at https://coloradoticks.org/the-ticks-introduction/.

- The **Rocky Mountain Wood Tick (*Dermacentor andersoni*)** prefers grassy meadows, shrublands, and forested areas between 4,000 and 10,500 feet. They parasitize large mammals, including deer, cattle, dogs, and occasionally camelids, and are most active from March to July.
- A related species, the **American Dog Tick (*Dermacentor variabilis*)** similarly lives in grasslands, especially at lower elevations, and is most active in the spring through summer. This tick can often be found on large wildlife such as moose and deer, dogs, livestock, and sometimes people. Both these species of tick can transmit several diseases to humans, of which Rocky Mountain Spotted Fever (RMSF) and tularemia are potential risks for camelids.
- A third cousin, the **Winter Tick (*Dermacentor albipictus*)** similarly parasitizes moose, deer, livestock, and camelids. This tick is unique in that the adults are most active feeding during the winter season. Although the Winter Tick has not been implicated in transmitting diseases to camelids, as with other ticks, heavy infestations can cause anemia and hair loss. All three of these Dermacentor spp. of ticks can cause tick paralysis in camelids.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

- Soft ticks, such as ***Ornithodoros spp.*** of ticks, are found associated with rodent burrows and rustic structures (e.g. barns and sheds). They primarily parasitize rodents but will feed on camelids and can transmit the *Borrellia* bacteria that cause Tick-Borne Relapsing Fever in humans, camelids, and other domestic animals.

The ticks that transmit Lyme Disease [Black-Legged Ticks (Ixodes scapularis and I. pacificus)] are rare in Colorado; thus, Lyme Disease is not a major health concern for Colorado camelids unless they have traveled to the Midwest or East Coast.

Clinical Signs of Tick Infestation in Camelids

While alpacas and llamas may not commonly show signs of tick infestation, the presence of ticks can lead to local and systemic effects, particularly with heavy infestations or to disease transmission. Particular attention should be paid to thin-skinned areas such as the ears and ear base, under the jaw, the axillae (armpit), groin, perineum, and underside of the tail. Ticks, local dermatitis and scabbing, and hair loss or matting in those areas could all be indicators of tick attachment.

More significant systemic signs can include anemia and weight loss from heavy infestation, or unexplained fever, neurological signs (ataxia, head tilt, or weakness), or mood/behavior changes such as depression or irritability.

Tick-Borne Disease Risks for Camelids

Though camelids are less commonly diagnosed with tick-borne diseases than dogs or humans, they are not immune. Emerging reports and experimental studies suggest susceptibility to some pathogens, such as Tularemia, Tick-Borne Relapsing Fever, and Rocky Mountain Spotted Fever. Additionally, ticks can act as vectors for zoonotic diseases, posing a risk to people working closely with infected animals.

Tick paralysis is likely the most significant risk to camelids beyond dermatitis and anemia associated with heavy infestations. Tick paralysis is caused when a salivary neurotoxin produced by some species of ticks – especially *Dermacentor* spp. – is injected into the animal during feeding. It can only take a single tick to produce a case of tick paralysis. Affected animals show rapidly progressive hindlimb ataxia and weakness and may progress to total paralysis in as little as 24-72 hours after tick attachment. Treatment involves removing the feeding ticks and providing supportive care, but severely affected cases may require hospitalization. Barring other complications from the paralysis event (e.g. regurgitation aspiration), animals will completely recover in days to weeks after the offending tick is removed.

Prevention and Control Strategies

Proactive tick control is key to reducing the risk of infestation and disease. An integrated approach that includes environmental management, chemical control, and regular animal inspections will be most effective.

Ticks can be reduced in the environment by regular mowing of grassy areas, removal of brush and woodpiles that harbor small mammal hosts, use of wildlife fencing to exclude deer and other large mammals, and creation of a 3-6-foot-wide gravel or wood chip ground barrier between pastures and wooded environments. Some species of poultry, such as Guinea Fowl, are also known to help reduce environmental tick populations. Specific pest-control measures (e.g. tick tubes) can be useful when rodents are the primary host and perimeter pesticide sprays may be indicated for highly infested properties.

During tick season, be sure to inspect camelids at least weekly for ticks. It is challenging to do a complete inspection with the fiber, but the ears, neck, axilla/groin, tail base, and perineum are good areas to focus on. Remove any ticks manually with tweezers (grasp close to the skin) and keep a log of identified infestations to track seasonal trends.

Permethrin topical sprays/wipes and ivermectin-based dewormers may have a role in treating camelid tick infestations; however, commonly sold livestock and pet acaracides are off-label for camelids and should only be used under the direction of your veterinarian. Camelid fiber characteristics may inhibit distribution of commonly sold pour-on formulations, rendering them ineffective, and your animal may be sensitive to contact to common livestock and pet formulations.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Routine use of injectable dewormers such as ivermectin will lead to anthelmintic resistance in the herd's internal parasite population, which can create a bigger herd health challenge. Some pet formulations are potentially toxic in camelids. Other products that are EPA-registered (vs. an FDA-approved drug) cannot legally be used off-label. In addition to recommending safe and effective tick treatments for your herd, your veterinarian is a needed partner in diagnosing and treating tick-borne disease and providing local information on emerging tick-borne pathogen risk.

Conclusion

Ticks may not be the top priority for alpaca and llama owners in the Rocky Mountain West, but they present meaningful health and management risks. With climate change and increased wildlife-livestock interactions, tick encounters may rise in frequency and geographic range. Early detection, preventive measures, and a strong partnership with your veterinarian will help ensure your camelids stay healthy and tick-free.

References and Further Reading

- Centers for Disease Control and Prevention (CDC) Tickborne Diseases of the United States. https://www.cdc.gov/ticks/diseases/index.html
- Colorado State University Extension: Ticks and Tick-Borne Diseases. https://extension.colostate.edu/topic-areas/insects/ticks-and-tick-borne-diseases-5-593/
- Montana State University Extension: Managing Ticks in Montana. https://www.montana.edu/news/21629/
- USDA APHIS Camelid Guidelines. https://www.aphis.usda.gov
- Foreyt, W. J. (2001). Veterinary Parasitology Reference Manual. Iowa State University Press.
- Van Saun, R. J. (2016). Llama and Alpaca Care: Medicine, Surgery, Reproduction, Nutrition, and Herd Health. Saunders.

BEHAVIOR/HERD MANAGEMENT

What's the Premise?

By Marty McGee Bennett, CAMELIDynamics.com

When you train an animal you begin with a set of premises. Some of the common assumptions about training animals include...

- You must be dominant
- The reason animals resist is because they are trying to win
- If there is a winner there must be a loser
- Repetition is the key to training
- Animals don't think; they are only creatures of instinct
- Llamas don't like to be touched

What happens if some, or all, of your basic premises are inaccurate? How does this affect your interpretation of the behavior of the animal you are working with? How does this affect your behavior? Will you ever get the results you want or expect if you begin with a false premise?

In his book, *The Seven Habits of Highly Effective People*, Steven Covey offers an example of what happens to your effectiveness when your basic premise is not accurate. Imagine that you are trying to find your way around a strange city and someone has given you the wrong map. It wouldn't matter how well you could read a map or how hard you tried or how good your sense of direction, you would not be able to find your way around. If your basic premise about

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor. Email rmaleditor@gmail.com to obtain permission.

the motivation of your animal is incorrect, it won't matter how hard you try, how much time you spend training, or how dedicated you are — you will have a more difficult time being successful.

I ask students at clinics if they want their lamas to like them and the answer is almost always Yes! Often people will spend lots of time training their animals and are confused about why their llamas still don't come over to them to visit and seem to want to stay out of reach. They assume that if they work hard enough and are consistent that their llamas will eventually trust them.

I then ask the students to trade places with a llama as he or she is caught. I ask them to imagine how it feels to be trapped in a corner, grabbed around the neck and held still against their will. Most people understand immediately why their llamas stay right at the end of a human's fingers and do not feel comfortable when a human reaches out. Most llamas caught in this traditional way will also get up as soon as humans enter a barn and steer clear of humans in general. If you establish that catching happens in a small catch pen and you let your catch pen do the holding, you will find that your llamas can relax around you and ultimately seek you out for companionship and other perks.

Allow me to go WAY back in time to the early 80's, i.e., the stone age in llama business. One of my favorite llamas Betty lived with me at Zephyr Farm from the time she was a weanling until she died at age 15. Betty gave me great insight into the issue of premises. For the first five years we had llamas, we would feed them an individualized serving of grain twice a day. Each morning and evening I would catch and halter Betty, then tie her and feed her a bowl of grain. I would have to go through the same routine every time I did it: cut her off, hold her around the neck, and chase her nose around for a minute or so to get her to put her head in the halter. Thankfully, I am tall and Betty was short. Twice a day for three years I did this.

Betty's behavior never changed AND neither did mine. You would have thought that eventually she would have come running and put her nose into the halter. She never offered to come over for any attention and would never let me touch her unless I caught and haltered her first.

About this same time, I learned of Linda Tellington-Jones and her enlightened approach to working with animals and began rethinking my approach to llamas. I realized the impact of my practice of cornering and holding them had on them. I also began to rethink the premise that llamas don't like to be touched. I experimented with some of the touching I learned from Linda with surprising results. The llamas not only didn't dislike being touched, but all indications were they enjoyed certain kinds of touch a great deal. At the same time I changed my catching approach, I coincidentally stopped the twice a day feed regiment which is another premise-nutritional requirement I decided wasn't necessarily true for our llamas.

Betty's behavior took a dramatic shift. She stopped running away when I got near her and she began soliciting attention. I learned where she liked to be touched; she particularly loved a good back and belly rub and scratch. Being a bit overweight Betty hardly ever offered to run anywhere (except away) but now she would run — well, waddle very quickly over to me in an open field if she thought she would get a back scratch.

What happened? I didn't train her to come over. I didn't spend any more time with her. In fact, I spent much less time with her and I stopped feeding her, yet her behavior took a dramatic turn in a positive direction. **Lightbulb:** my basic premise had been wrong. I assumed that the only way that I could catch a llama was to corner him or her. I thought llamas didn't like to be touched so I never touched Betty thinking that would please her. She remained steadfastly afraid of her halter and frightened of being cornered. I thought llamas naturally stayed at arms' length and I never questioned the impact of my behavior on hers. I could have cornered her from now until doomsday and Betty never would have changed her behavior because my map was wrong.

Another example of good intentions that take you in the opposite of your intended direction is the common practice of reaching out to stroke a llama as he or she walks past you. I would call my llamas in from the field for food and the llamas had to walk through a narrow opening past me to get in to the barn to get their food. I would insist that my llamas would have to submit to a touch on the back — thinking that the llamas would accept and like the touch eventually. This is based on the premise that repetition is the key to changing a llama's behavior. My llamas adapted to this unwanted touch by learning to run by me really fast, twist their body out of the way and some would refuse to

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

come into the barn at all. I have found that it is much more successful to acknowledge to the llama that you will not touch them on their off time without warning and only in a context in which they feel prepared and safe. Initial touching is best done in a catch pen.

When I begin to ask about touching in an open field I use a three step approach. I walk to just outside arms' length and stop, then look at the llama's balance and expression to determine if they will stand their ground if I move closer. If I think they will, I take one or two steps closer. I keep my arms at my side. If the llama is still standing I will reach out to touch. If the llama withdraws that is fine, I try again later. My aim and premise is that for the llama to trust me he must know that he has the option of protecting himself by moving away. Once the animal knows that he is safe, he then becomes comfortable with my approach.

I do not mean to suggest that the sole motivation of training is to make your animals like you. Domestic animals live in our world. There are rules of acceptable behavior. We take care of animals and have them in our lives for a purpose. It is perfectly reasonable to expect animals to cooperate. Llamas are curious and intelligent. If we can create an environment in which lessons and human interaction are mostly interesting and relatively stress-free, isn't it a reasonable premise that they would come to enjoy their time with us? What I have found is that some of my original assumptions about animals and why they behave the way they do have not turned out to be true for me. I find that I can be more creative, more flexible, more tolerant and still manage and train the animals in my life effectively.

Knowledge can be the biggest block to learning if it relies on a premise that isn't true. Keeping an open mind about what you are told about animal training is difficult. People can be very authoritative about what is true for them. Sometimes it can be useful to forget conventional wisdom, begin with your own premise and see if you see things differently. Each day is a new beginning in an animal's world, and yours.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

FIBER

2025 Intermountain Weavers Conference

By Nancy Wilson

I just got back from the 2025 Intermountain Weavers Conference held in Albuquerque June 18-21. What a great learning experience. I took a spinning workshop, The Gifts of Wool, co-taught by Martha Owens and Elizabeth Johnston. They teach regularly at the well-known John C. Campbell Folk School in North Carolina. Elizabeth lives on the Shetland Islands which are off the coast of mainland Scotland and she is very involved in Shetland spinning and weaving. It was a real treat to learn from these two highly esteemed instructors.

Elizabeth & Martha

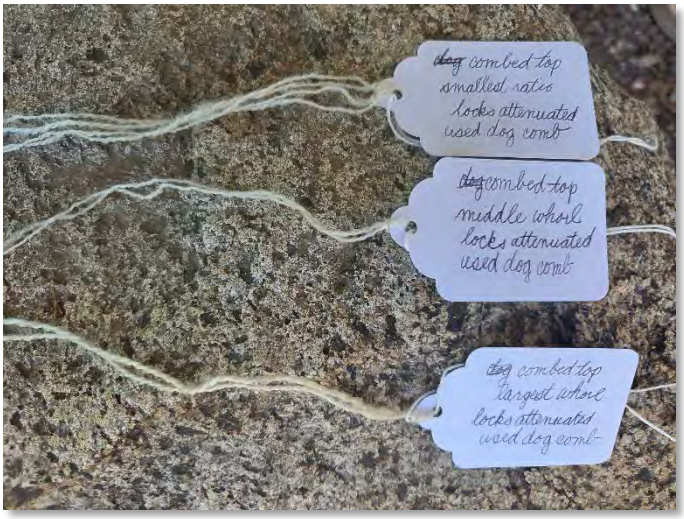
We had the opportunity to work with fleeces from both women's flocks; Elizabeth (not surprisingly) has Shetland sheep and Martha has a spinners flock with some Shetland as well as Romney and Bluefaced Leicester crosses. It was very interesting to feel the difference between the Shetland fleeces. Some were fine with a lot of crimp and others were more of a wavy crimp with luster. Here's a picture of the fleece table.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

My new favorite way of processing long staple fibers is using a dog comb. With this method, you hold one end of the fleece between your thumb and index finger and also between your ring and pinkie fingers. Lay the lock on your lap (an apron or lap cloth is helpful) then place the comb at the midpoint of the lock and pull the lock through the comb. Turn the lock around and repeat on the other end. Store the locks with the tip or butt end in the same direction and you can spin a lovely worsted yarn right from the lock.

Dog comb

Working with long fibers



Sample Card

Worsted spinning is short forward or short backward draw where no twist enters the drafting zone. This method creates a smooth, lustrous yarn. A spinner may find it smoother to draft the fibers from one end or the other; that is why you want to keep the locks lined up. Figure out which way drafts easier for you, and then if you encounter a lock that doesn't draft as well, turn it around. Another method using a diz to comb fiber off a hand carder was also interesting. We made sample cards using different ratios on our spinning wheel.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Batt for woolen spinning

Woolen spinning is the other end of the spectrum where the idea is to have a lofty, light yarn. This method is spun from carded rolags. I have always done what is called *charging the carder* where the fiber is pulled through the carding cloth prior to starting the carding process. We were shown a method where a small amount of fiber is placed on top of the carder and then the carding process begins without embedding the fiber into the carder. There is less chance of scratching your knuckles on the carding cloth. I'll be carding this way in the future. Prior to carding, we lightly spritzed the fiber with baby oil, which will wash out when the yarn is finished and which serves the purpose of decreasing static electricity.

True woolen spinning is a double drafting process. The front hand pinches the single near the wheel's orifice. The back hand then jumps back from the fiber supply to create a slub. The front hand then quickly opens and closes so the twist jumps to the end of the slub. Then the spinner can draft out the slub to create a lofty yarn.

Drum carding is where I really saw a different approach. Elizabeth showed us how she attenuates a small amount of fiber into a loose roving then adheres it to the smaller drum of the carder. As she turns the crank, she pulls the loose roving back and forth across the smaller drum. This helps create a more random fiber alignment so that the resulting yarn is ready for woolen spinning. After the first pass, she breaks the batt into short sections the width of the drum carder and inserts them through the smaller drum with the fibers oriented 90 degrees from the carder teeth. After the second pass, she splits the batt in the same way and rolls them into rolags for woolen spinning.

Teased fiber applied to the small drum.

Raw fiber teased into a strand that is then placed on the carder using Elizabeth's method.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Martha's carding method, showing pulling back on the fiber.

Martha creates batts by placing a lightly teased batch of yarn near the smaller drum of the carder and pulls back on the fiber while turning the crank. After the first pass, she splits the fiber similar to Elizabeth's method. Both methods are different than how I typically make a batt, so I will be interested in experimenting with this method.

IWC is held every other year in odd-numbered years. The next conference will be held July 6-10, 2027, at the Antlers Wyndham in Colorado Springs. I hope to see some of you there!

Happy spinning!

Originally published in Lamas News, March 2010 and Llamas of Minnesota, July 2010. Reprinted here with permission from the Florida Alpaca & Llama Association.

You know you are a Fiberholic when…

- Your freezer contains more fiber than food
- Your inside critters have their own selection of knitted llama coats
- Llama wool bunnies replace the old term "dust bunnies"
- Your spouse complains that the quilts are overstuffed
- The rocker and the couch make excellent storage space
- Shopping days are excuses to buy another fleece
- Purchasing llama wool is more exciting than buying new shoes

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

HEALTH/NUTRITION

Meeting Macros For Llamas

By Rebecca Kern-Lunbery, MS, MBA, PAS Animal Scientist

Just like the protein buffs at the gym, llamas and alpacas have macronutrient needs that must be met to support body condition, pregnancy, lactation, growth, and fleece production.

- Protein helps build muscle and supports fleece production.
- Energy fuels animal activity and production performance.
- Fiber keeps the digestive system healthy and functioning and is a component of energy.

So how can you ensure your animals are getting the protein, fiber and energy they need? It starts with understanding their nutritional requirements, evaluating your forage, and providing non-forage supplemental feeds only when necessary. Forage should make up the bulk of the llama and alpaca diet with other feeds such as formulated pellets or kibble being fed to meet nutritional gaps in the forage.

Understanding protein and energy requirements

The first step is to determine your animal's daily nutrient needs. Table 1 outlines the protein and energy requirements for llamas and alpacas based on physiological stage. These values assume animals are in a dry lot.

Grazing requires more energy because the animal is exerting energy when walking across the field or pasture to consume forages. Energy in a pseudo-ruminant diet is represented by total digestible nutrients (TDN). Energy comes from digestible carbohydrates, fiber broken down by gut microbes, and fat.

However, it is key to keep in mind that llamas and alpacas have a limited gut capacity relative to beef cattle and sheep. So, their dry matter intake (DMI) remains constant even when they are grazing and therefore need more energy and protein. These animals do have the ability to graze preferentially, so they will typically select a high protein, high energy diet when the option is available to them when grazing.

Additionally, if your llamas or alpacas are overweight, then they will need to be at an energy deficit to lose weight. This is achieved by reducing TDN intake slightly while still meeting protein and mineral needs. Weight loss goals to improve body condition should be achieved gradually over several weeks or even months.

If they need to gain weight, then extra protein and energy may be required to put on body mass, not just fat. Using body condition scoring and monitoring weight over time can help you fine-tune the feeding strategy. Consulting with your veterinarian or a seasoned livestock nutritionist can help ensure you are feeding to meet your animal's body condition goals.

Table 1. Nutrient Requirements of Llamas and Alpacas[1]

Physiological State	Dry Matter Intake (lbs/d)	Crude Protein (% Dry Basis)	Total Digestible Nutrients (% Dry Basis)
Maintenance	1.8 - 3.8	9.2	54
Gestation	2.2 – 6.0	9.0 – 13.0	54 – 73
Lactation	2.3 - 5.5	11.0	57
Growing	1.4 - 5.4	8.5 - 13.0	53 - 80

[1]*Adapted from NRC (2007) Nutrient requirements of Small Ruminants*

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

You can look up your protein and energy requirements on a table such as the one referenced. To make this process easier, I have also deployed an app to help producers easily look up these requirements: http://lunberyprofessionalservices.shinyapps.io/LlamaAlpacaRequirementsCalculator.

Understanding Your Forage Report

Once you know your animal's needs, the next step is comparing them to your hay. Forage reports can be overwhelming, but focusing on a few key values makes interpretation easier. A sample report follows.

1. **Moisture**

Optimal moisture for most hay is between 14-18%. Higher moisture levels between 18-22% have moderate combustion risk when stacked and are also more likely to foster an environment for mold and mycotoxins. Moisture greater than 22% is high combustion risk.

Most hays are below 14%, which poses no risk for spontaneous combustion or mold. However, it is typically more brittle and can sometimes have reduced quality due to leaf loss in the raking and baling process. So, for llamas and alpacas, we would like to see moisture between 14-18% but less than 14 is also acceptable.

2. **Crude Protein**

When we look at the parameters on our forage report, we want to compare everything on a dry basis. For this example, let's say I looked up my llama's nutritional requirements and they needed 9.2% crude protein. I would look at my report and if it is at or slightly above 9.2% crude protein on a dry basis, then this hay would be a good match for my animals. If it were less than my 9.2% value, then I would conclude that protein supplementation with non-forage high protein feeds will be needed. Often this would be pelleted formulated feeds.

3. **Energy Expressed as Total Digestible Nutrients (TDN)**

Energy is another value that we will need to compare to our animals' specific nutritional needs. For this example, let's say my llamas need 52.9% TDN. Again, if the report value on a dry basis is equal to or slightly above this value then requirements are met or exceeded and if the value is below this value supplementation will be needed.

4. **Amylase-treated Neutral Detergent Fiber (aNDF)**

Llamas need fiber for gut health. However, too much fiber can reduce dry matter intake (DMI) which limits the total amount of nutrients these animals consume per day. While the forage report may appear to meet requirements on a percentage basis, llamas and alpacas may not receive the nutrients they need in terms of lbs/d because of reduced DMI due to too much fiber. We always need to remember we compare percentages for ease of understanding, but animals require specific amounts of nutrients daily.

Amylase-treated Neutral Detergent Fiber represents the indigestible and slowly digestible portion of a feed. The detergent fiber system washes away all other portions of the forage leaving behind only the fibrous long chain carbohydrate portion of the feed associated with DMI and rumination time. An enzyme, alpha-amylase, is used during lab analysis to solubilize starch, ensuring it doesn't interfere with the fiber measurement and falsely inflate the value.

The ideal range for aNDF is between 30 – 60% to ensure a healthy gut without DMI. When aNDF is more than 60% it takes the animal longer to digest the material, spending more time ruminating and less time-consuming feed, therefore, reducing intake and in some cases resulting in weight loss and other nutritional disorders.

Along with aNDF we also may want to examine neutral detergent fiber digestibility at 48 hours (NDFD48) and lignin. An average value for NDFD48 is 45 for alfalfa. NDFD48 above 45 is considered more digestible than average. Lignin is the most indigestible portion of the forage. Lignin being especially high (>8.5 % dry basis) may contribute to reduced digestibility of the fiber and conversely lignin being low (<4% dry basis) can increase digestibility of the fiber.

Increased digestibility of the fiber can contribute to increased intake as well as providing more energy in the form of TDN to the animal.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

5. Ash

Ash is the total elemental content of hay. It is measured by burning the hay at extremely high temperatures in a lab, usually around 600°C. Organic matter such as the fibers, protein and fat is removed leaving only inorganic residue. This is the plant elemental compounds and the dirt or sand that is in the sample.

Most plants have 4-6% endogenous ash content. Most hay samples will be between 8-12% ash on a dry basis. Hay with ash levels above 15% are contaminated with soil. I have seen hay samples with more than 26% ash content!

When evaluating hay quality, it is best to avoid samples with more than 12% ash, especially for llamas and alpacas. As pseudo-ruminants with small, compartmentalized stomachs, they are more vulnerable to problems from soil-contaminated forages. Chronic consumption of high-ash hay can reduce dry matter intake and may even lead to serious digestive issues like gut impaction.

Supplementation

If the forage analysis shows the need for protein or energy supplementation, then the addition of cereal grains, co-products or formulated pellets may be necessary to ensure your llama or alpaca meets their nutritional requirements. Typically, energy deficient hay should be supplemented with grains such as corn or oats, but caution should be taken to avoid over supplementation and acidosis risk. Protein and energy deficiency can frequently be resolved through supplementation with dried distillers' grains or soybean meal, but long-term diets need to consider risks associated with sulfur toxicity and other issues feeding these by-products as well. Always work with your veterinarian to determine which supplemental feeds and how much will be best suited to your hay and your animals. It is the best practice to always provide a free choice mineral supplement as well.

Keys to Meeting Macronutrient Requirements

1. Understand the animals' needs. Nutritional requirements vary with physiological stages such as growth, maintenance, pregnancy, and lactation. Knowing these needs provides essential context for the rest of the diet.
2. Test your forage. Forage typically makes up most of the diet. A forage report helps assess protein, energy, fiber, and other key characteristics to inform feeding decisions.
3. Supplement when necessary. Use non-forage feeds like pellets or cereal grains, or co-products such as beet pulp, soy hulls or distillers grains to fill gaps between forage quality and the animal's nutritional requirements.

In conclusion, protein and energy requirements for llamas and alpacas are variable and depends on their weight and physiological status. Ensuring those requirements are met is key to ensuring healthy productive animals. It is easy to evaluate forage to determine when supplementation is needed.

About the author: Rebecca Kern-Lunbery earned her M.S. in Animal Nutrition from the University of Wyoming with a collaborative project with the US Meat Animal Research Center. She is an active member of the American Registry of Professional Animal Scientists. With a passion for producer education, she is a regular contributor to *Progressive Forage Magazine*. Currently, she serves as the Immediate Past President of the NIRS Forage and Feed Testing Consortium (NIRSC).

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

WARD Laboratories, Inc.

Ag Testing - Consulting

NFTA 2025

Account No. : 90019

NIR Analysis Report

KERN, BECCA
WARD LABORATORIES INC
PO BOX 788
KEARNEY NE 68848-0788

Invoice No. : 1439490
Date Received : 01/14/2025
Date Reported : 01/16/2025

Lab Number : 318

Results For : HAY ANALYSIS
Sample ID : 1
Description : GRASS HAY

	Analysis As Received	Analysis Dry Basis
Moisture, %	11.41	0.00
Dry Matter, %	88.59	100.00
PROTEIN		
Crude Protein, %	5.2	5.8
FIBERS		
Acid Detergent Fiber, %	39.0	44.0
Neutral Detergent Fiber, %	59.3	66.9
NDFD (digestibility) 48 hr, % of NDF		45
IVTDMD (in vitro true digestibility) 48 hr, %	54.6	61.6
ENERGIES		
TDN Est., %	43.4	49.0
Net Energy Lact, MCal/lb	0.4344	0.4903
Net Energy Maint, MCal/lb	0.3735	0.4216
Net Energy Gain, MCal/lb	0.1546	0.1745
QUALITY VALUE		
Relative Feed Value		76
Relative Forage Quality		71
MINERALS		
Calcium, % Ca	0.35	0.40
Phosphorus, % P	0.12	0.13
Potassium, % K	0.93	1.05
Magnesium, % Mg	0.06	0.07
Ash, %	5.15	5.81
OTHER ANALYSIS		
Fat, %	1.8	2.0
Starch, %	1.4	1.5
Lignin, %	5.19	5.86
Non Fiber Carbohydrates, %	17.2	19.4
Ethanol-Soluble Carbohydrates, %	5.4	6.1
Water-Soluble Carbohydrates, %	8.8	9.9

Reviewed By : Rebecca Kern **5/19/2025** **Copy : 1** **Page 1 of 1**

Bus: 308-234-2418
Fax: 308-234-1940
web site
www.wardlab.com
4007 Cherry Ave., P.O. Box 788
Kearney, Nebraska 68848-0788

Sample Forage Report

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

YOUTH

Youth Handlers Shine at Douglas County Camelid Classic

By Kimberly Surry

The barn was full of excitement — and soft humming — as young exhibitors led their llamas through the ring at the first annual Douglas County Camelid Classic (and clinic). The event was held at Douglas County Fairgrounds on June 14, 2025, and was designed specifically for youth.

This show was aimed at bringing education to youth as well as a show to practice for their upcoming county fairs. Many kids who show other species of livestock, such as swine, steer, and goats to name a few, have numerous opportunities for shows and to attend clinics. Over the years, I have noticed that kids involved with llamas/alpacas do not have those opportunities locally. I wanted to change that! This show proved to be a success by bringing education, fun, and opportunity. Many thanks to Douglas County 4H, Grace & Mercy Farm, Jon Barba, and RMLA!

For many of the kids, this event was the result of months of daily work: brushing fiber, practicing halter walking, and learning how to calmly guide their animals through obstacles. The clinic included in-depth showmanship — where handlers are judged not just on their skills, but on how well they communicate with their llama/alpaca, how knowledgeable they are on the breed, and how well they understand quadrants (i.e., handlers position relative to the llama).

Among the highlights was the obstacle course, where llamas stepped through hoops, walked in water (some not wanting to get out!), and even paused for impromptu photo ops. Some handlers showed seasoned llamas/alpacas with years of experience, while others were showing for the very first time.

Jon Barba, our amazing judge and clinician, judged on control, teamwork, and poise. He spent a lot of time explaining showmanship and making sure the kids understood the importance of their position and the quadrants. But beyond the scores, the show was about connection — not only between youth and their animals, but among families, clubs, and communities that support agricultural education.

This event would not have been possible without all the help! Douglas County 4H provided the venue, the 4H Youth Council donated money for the awards, RMLA provided money for the breakfast, Jon Barba donated his time as a judge and a clinician, and Grace & Mercy Farm provided seven llamas for some the kids to use and learn with. Heather, Julie, and Jess with RMLA, were amazingly helpful throughout the planning stages as well as at the show!

I've always been passionate about preserving and promoting the education and training of these unique animals. I feel that the Douglas County Camelid Classic will do just that, and hopefully for years to come. I want to allow kids the opportunity to learn about and show llamas and alpacas in a fun and instructional environment. Again, I want to thank all who helped me create such an opportunity! Thanks again to RMLA for being a part of it!

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

About the author: Kim Surry is the Douglas County, CO 4H llama coordinator. She has been working with our chair, Heather Rohlwing to coordinate the youth programs for RMLA, and she is the one who organized the show. She is also on our youth committee for RMLA.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

HEALTH/NUTRITION

Forage for Camelids: Minerals

By Rebecca Kern-Lunbery, MS, MBA, PAS Animal Scientist

Llamas and alpacas, like other animals, have micronutrient needs to maintain their health and productivity. Unfortunately, unlike true ruminant livestock species, we do not have a lot of research or well defined mineral nutritional requirements for camelids. But that doesn't mean we should just leave it up to chance and guess work! Mineral supplementation planning should be informed by forage analysis data, and veterinary experience and expertise.

Micronutrient Fleece Functions

Minerals are micronutrients required on a biological cellular level to maintain health, growth and reproduction. They can be measured as a percentage (%) of total forage or feed; these are referred to as **macro-minerals**. Other minerals present in the diet at an even smaller amount are measured in parts per million (ppm); these are called **micro-minerals** or **trace minerals**. In the case of llamas and alpacas, they also play a key role in fleece production and quality. Some key minerals to consider for camelids include zinc, copper, sulfur and iron. Zinc, copper and iron are micro-minerals. Sulfur is a macro-mineral.

- Zinc is essential to skin and hair follicle health and a deficiency can result in brittle fleece that easily breaks and feels coarse instead of soft.
- Copper is responsible for melanin production and the color of the fleece. A deficiency in copper can be observed through lighter color fleece and a change in texture. Molybdenum is a well-known antagonist to copper absorption and for other livestock species just 5 ppm on a dry basis can interfere with copper in the diet. Sulfur is another antagonist that can interfere with copper absorption when they are at high levels in the diet.
- However, despite the potential to interfere with copper, sulfur is also a key component of the amino acid building blocks that make up the structure of fleece.
- Iron is another micromineral that is required for healthy skin and hair follicles but can interfere with zinc and copper absorption when in excess in the diet.

So, just looking at fleece quality and production alone, we can see quite a balancing act arising when it comes to micronutrients in a camelid's diet. We haven't even started looking at biological function requirements for maintenance, growth, lactation and immune function!

Minerals in Forages

Another consideration when we think about camelid nutrition is limited gut capacity. Limited gut capacity paired with forage as the bulk of the diet makes it imperative to feed forage that can provide both protein and energy as well as micronutrients. Table 1 is adapted from the *2021 Nebraska Beef Cattle Report*: *Mineral Concentrations of Forages for Livestock in Nebraska and South Dakota (Kern et al. 2021). It shows commonly observed ranges of mineral concentrations in forages submitted to Ward Laboratories, Inc. by forage and livestock producers.*

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Table 1. Commonly Observed[1] Range of Macro and Micro mineral Concentrations in Forage

	Calcium (%)	Phosphorous (%)	Magnesium (%)	Sulfur (%)	Manganese (ppm)	Zinc (ppm)	Copper (ppm)
Good annual small grains (9 to 12.9% CP)	0.21-0.56	0.20-0.36	0.12-0.21	0.13-0.22	43-116	20-38	4-8
Good annual warm season grass (9 to 12.9% CP)	0.27-0.86	0.13-0.25	0.25-0.43	0.12-0.18	29-127	25-45	5-9
Good perennial grass (9 to 12.9% CP)	0.39-0.86	0.13-0.25	0.13-0.23	0.12-0.27	25-126	12-45	2-13
Good alfalfa (18 to 19.9% CP)	1.19-1.82	0.21-0.32	0.21-0.35	0.19-0.28	30-69	14-35	3-16
Fair alfalfa (16 to 17.9% CP)	1.10-1.76	0.19-0.32	0.20-0.32	0.16-0.28	24-55	17-30	5-11
Utility alfalfa (< 16% CP)	0.81-1.66	0.15-0.34	0.16-0.31	0.13-0.25	17-75	10-45	1.8[2]-19
Alfalfa Grass Mix	0.57-1.29	0.13-0.29	0.13-0.33	0.10-0.29	21-91	11-36	4-10

1 Average - or + one standard deviation

2 Minimum value, one standard deviation below average was negative

Llama and alpaca protein requirements range from 8.5 to 13%. So, as you can see from Table 1, most good quality grass forages will meet those requirements. Alfalfa with higher protein content that exceeds protein requirements of camelids, also have higher calcium content. So, they would need additional phosphorous supplementation relative to the other forages to ensure an ideal ratio of 1.5:1 to 2:1 Ca:P.

Additionally, Kern et al. (2021) found that macro-minerals including calcium (Ca), phosphorous (P), magnesium (Mg), sulfur (S) and potassium (K) were positively correlated with protein content of the forages. Therefore, lower protein forages likely require not only more protein supplementation, but also more mineral supplementation.

Conversely micro-minerals including zinc, copper and iron, key for fleece production and quality were not correlated with the forage protein concentration. So, camelids likely need supplementation for these key nutrients regardless of forage mineral profile.

Implications for Llamas and Alpacas

1. **Test your forage.** Forage analysis can help inform nutrition supplement decisions. Table 1 shows a mineral range. While macro minerals are correlated with protein, micro-minerals are likely lacking in forages. Although present in forages, zinc and copper are often very low in concentration and for other livestock species can be supplemented without worry or resulting in a toxicity issue. With the extra fleece requirement for llamas and alpacas it is highly likely they will need supplementation of these micro-minerals. Understanding what is available in your hay or pasture can aid in making the best possible supplementation decisions.

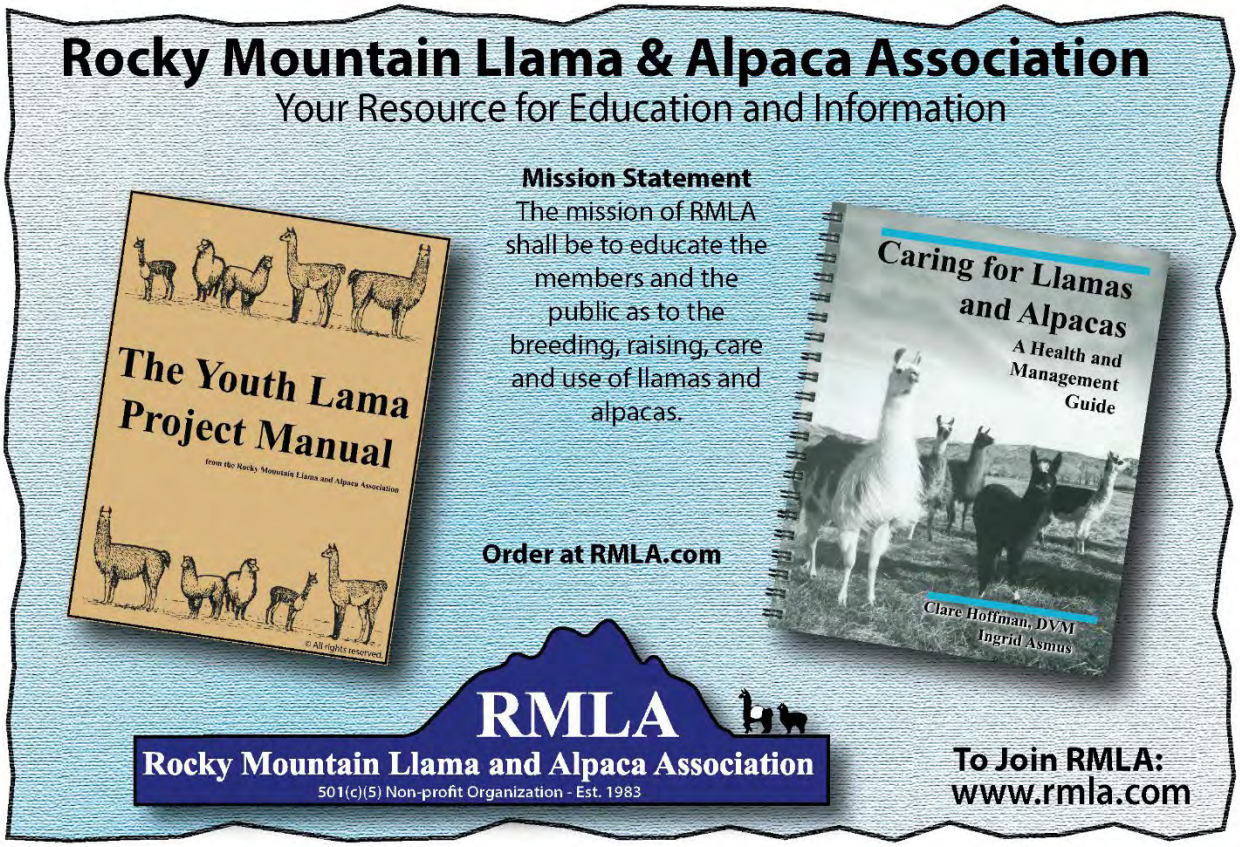
Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

2. **Choose quality forages when possible.** As mentioned earlier, the limited gut capacity of llamas and alpacas means it is important to fill that gut with nutrients. When making hay purchasing decisions or determining the timing for grazing pasture, choose forages that match their needs as close as possible and fill minor gaps with targeted supplementation.
3. **Work with your veterinarian or nutritionist to choose a mineral supplement that compliments the mineral profile in your forage.**

As stated above, the requirements for camelids are vague. So, working with professionals who have experience of working with both the numbers as well as the animals can help ensure success in meeting micronutrient requirements. *Nutrition is both science and an art* even in species with well-defined requirements other factors such as genetics and environment can play a role.

In conclusion, even though we don't have clearly defined mineral requirements for llamas and alpacas, that doesn't mean we should ignore their importance. Minerals like zinc, copper, sulfur, and iron are essential for fleece quality and overall health. Forage testing gives us a starting point to see what's already in the diet, but it's not the whole picture. Supplementation decisions should be based on both the forage mineral profile and the specific needs of your herd. Working with a vet or nutritionist who understands camelids can help you fine-tune your feeding program. Paying attention to the details of mineral nutrition can go a long way in supporting healthy, productive animals.

About the author: Rebecca Kern-Lunbery earned her M.S. in Animal Nutrition from the University of Wyoming with a collaborative project with the US Meat Animal Research Center. She is an active member of the American Registry of Professional Animal Scientists. With a passion for producer education, she is a regular contributor to *Progressive Forage Magazine*. Currently, she serves as the Immediate Past President of the NIRS Forage and Feed Testing Consortium (NIRSC).



Highline Trail Llamas, Part 2

An Interview with Al Ellis by Kyle Mumford, Part 2

Editor's Note: This article originally appeared in Issue 10 of the American Llama Magazine. Thank you to Kyle Mumford and Al Ellis for permission to reprint the interview in two parts.

Picking up from where we left off in the Spring issue:

Al transitioned the topic from selection and breeding into herd management, something he is equally, if not more passionate about. "I think care is increasingly important. Twenty years old should be attainable by most ccaras or classics under good care. We know how to detect and treat parasites better, we know what vitamins they need."

Parasite Treatment

Al shared that he had to learn about proper parasite prevention and treatment methods the hard way, through trial and error and trying to save llamas. "Knowing the parasite you're treating and using the right thing to treat it, that's important," Al said. "Parasites can take them down. Nobody knew anything about parasites when we started out. How to detect them, how to treat them." He shared that the advice he received from his first vet, who was otherwise very helpful and knowledgeable, was to treat with panacur one year and ivomec the next.

Longtime packer, Diez, at more than 20 years old.

It was a run in with liver flukes that led Al to overhaul his parasite screening methods. "We bought what was called the *Fluke Finder*, to screen for liver flukes. The first screen I looked at had a bunch of avocados, hundreds and hundreds of them. E-mac. And since we discovered how to screen for E-mac, every cria we've tested has had two or three pretty severe bouts of E-mac. I don't mean three eggs, I mean three-hundred eggs. It has made a tremendous difference in the development of our crias, you're not having animals set back in their growth and development."

I asked Al about his practices for when to run fecals on which animals. He said, "We weigh the crias every day. It's part of their training and to watch their health. We train them to get on the scale in their first week. Usually in the first three or four days. Normally you'll see a change in the weight gain, not necessarily going negative, but maybe they're going up by less. That's when I run a fecal."

His protocols were similar for the adults, "We weigh the adults at least once a week. A good scale is your first diagnostic tool. Without a scale you'll notice if they're getting sick, but with a scale you'll see the weight change before that. If their weight is going down without a reason, then that's when we run fecals."

When it comes to treatment Al said, "I never go for zero, if they have a light infestation I leave it, because that's how they develop their natural immunity." An important clarification here is that while Al would leave a *light infestation* for the time being, he was also continuing to weigh and screen the animal regularly. "We never got to horrible infestation because we caught them early." For the early treatment of E-mac Al prefers a supplement called Paravac. I had never heard of this product previously, but am giving serious thought to trying it. Any product that passed the scrutiny of Al's frequent parasite screening and weigh-ins warrants close consideration.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Al is quick to caution that his particular screening and treatment methods may not be applicable to another farm in a different state, or even down the street. But the concepts of early detection, specific identification, and prevention are applicable no matter what region of the country you live in.

Cria weight check

The Lesson That Took us Quite a While to Learn

As Al continued to focus heavily on the care and development of his young llamas, he noticed an odd trend of a small number of promising young animals who began to get knock-kneed around one-and-a-half to two years of age. "At that time crooked legs were still pretty common, so we thought it was genetic crooked legs," he said. "Finally we had another big, beautiful girl, do the same thing. Putting on a big growth spurt, going into spring and her knees turned within just a matter of couple of weeks. We took her down to CSU and did the work-up and it was a Vitamin D deficiency, rickets."

Al explained how that rickets diagnosis changed their herd management practices, "Vitamin E and D was the lesson that took us quite a while to learn. Most winters, the bulk of our winter, is bright blue sky, bright sunshine. So I thought for sure we were getting enough vitamin D. Now we start supplementing in October and we go to March. I prefer the oral gel personally. I'll use the oral anytime I can over injection. And I carry it through with my whole herd, I just put it in the food. Vitamin D is important for the immune system too."

Giving an oral supplement

Al supplements with vitamin E as well, "We used to always have a tooth abscess going. We started vitamin E during hay season a long time ago. We still had a pretty big herd then, we had 200 animals, and we haven't had a tooth abscess since."

Training

The interview seamlessly transitioned from herd management to the training of Al's future packers. I asked when he starts, and how he starts, training his future packers. I expected him to talk about weanlings or yearlings, but Al explained that his training starts quite early. "Most of the time, in our birthing season, it might still be ten degrees. So I put them in the barn the first night. This is empirical, there's no way to prove it, but in my mind I'm positive that it turned out that the animals I had to carry the farthest to the barn when they were born turned out to be the calmest personalities. Picking them up, holding them against your chest, where they're against your heartbeat, and carrying them for five minutes or whatever it takes to get up to the barn. You feel them struggle at first and then you feel them settle in for the ride and be content. I would carry them to the barn and at least make it long enough where they'll stop struggling and realize, 'OK, I'm safe. This guy's OK.' I'm sure that makes a difference."

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Trying to get to mom's bowel of goodies.

Al's training regimen continues when they are a couple of days old through their first several weeks of life. "At least during the first few weeks, the moms come in and get a supplement every day, and so the babies come in with them. We separate the moms out, put them in stalls so each gets their supplement, and we leave the crias in the mob. We put them all into the stall that has the scale in it, and one by one we teach them to get up on the scale. And then we take them out through our box that we train in. It's a little 4' x 8' box that I do worming and trim nails and stuff in. Which is just a box with a door in the front. We put them in the box, handle them just a bit, pet them down and feel their legs, and then send them out to play. So they learn pretty fast, 'Ok, we go get weighed, we go in the box, and then we get to play while the moms are eating.' That's how we start. In a few weeks we'll put a halter on them, we don't put a lead on, they just get to play with the halter on. And then they have to come back through the box to get the halter taken off."

That routine doesn't change for the crias for a few months, as they get their daily weigh-ins and frequent haltering practice. "Haltering and lead training are two separate things," Al explained. "I normally don't lead train until way later than most people. Anywhere from 4 months to 6 months. I do light touch, two fingers, index finger and thumb. A couple of them may fight against lead training, but most of them its five minutes and basically they're leading."

Now that Al had described desensitizing, weigh-in routines, halter training, and lead training I was ready to hear about my narrowly defined topic of *pack training*. Al obliged by circling back to my question, "By the time we're done with all of this, the pack training usually takes zero. Putting the pack on for most of them is nothing." As Al chuckled, I couldn't help but think of the wise Mr. Miyagi from the *Karate Kid* films, who taught the impatient, unsuspecting Daniel-son the fundamentals of Karate by tasking him with painting his fence and waxing his car. Wax on, wax off…

Picket Training

Of course there is more to pack training than wearing a pack. Al explained how he goes about picket training, which he called, "the biggest danger in training a pack animal." A few months prior to interviewing Al, I had my ignorance on this topic harshly removed, as a young male we sold as a future packer broke his neck while staked out at his new home. After this incident our customers reached out to Al for advice on picket training, and he happily obliged. After going through this experience, I knew this was another topic that I needed to ask Al about. "I know of too many animals that have been killed while learning to be on a picket; broke their neck," Al said.

"We stake them out at the ranch a lot before we ever try to do it in the woods," Al explained. "I start on a fence line. So they only have half a circle, on a 12-14 foot lead. I have screwed in eyes on the fence at the bottom, to that I connect real pure rubber bungee, and a quick release snap to. And I tie the lead to that. Most of them will get tangled in that but not all of them."

This all sounded logical to me, but then Al said something I didn't expect, "I want them to get tangled and struggle a little bit. I want them to try to figure it out on their own before I get them loose. Most of them I end up having to help at least once. But that way they get used to working the rope and not stepping on it."

"The last step is that I tie them to a rock bag," Al continued. "On our pack trips we use rock bags mostly for stakeouts. We carry in the empty bag and then we fill it with rocks when we get to the campsite. When I'm training I stake the rock bag down. And on the other end I've got the same double bungee and the quick release. And they get the full circle. They get probably five or six hours of that, not all in one day. But I want them to get tangled, and struggle and hopefully figure it on their own before I help them."

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Picket line setup for first night out

On the Trail

Unsurprisingly, Al's approach to introducing the packers-to-be to the wilderness is gradual and strategically planned. "We're five minutes from Desert Winter Grounds," Al said. "I always take them in a mob- 3, 4, 5, 6. They take a five minute trailer ride, get out, see some new stuff, smell some new smells, and walk around a little bit. We keep it under an hour, and a short trailer ride back home. The next time you're out a little longer, go a little farther. My guide for them is if they start to nibble, they're starting to relax. And then when they poop, I know they're good. They're ready for a full day. We'll do a few full days, then we do single overnight for the first night in a mob."

Al expanded on the llamas' first overnight trip, "The first night out I put them on a hitch rail where they can't reach each other and they're back-to-back. So they're side-by-side and back-to-back, so they've got buddies while they're learning about coyotes, elk, deer and everything else that makes noise and might come through camp."

Al concluded by saying, "And then we do a five day trip before they're finally done with their training. They're out long enough to forget about home and they're learning to love it."

Outfitting

In addition to Al and Sondra's breeding program, and the use of pack animals for their personal recreation, they also started to offer pack trips in the late 90s. "It kind of just happened," Al said. "It's something I would have never considered. I love being alone in the mountains with my llamas, but I had ten years of it."

Al mentioned a fellow llama breeder who visited their farm and encouraged Al to introduce new people to llamas. Al remembered, "She told me, 'You need to promote these animals.' I told her, and I regret it now, 'I don't want people to know about them, because they're my secret weapon. Because I like looking for big mule deer and they give me an

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

edge that nobody else has.' So I really didn't want people to know how good they are."

It was Al's dedication to the preservation of pack llamas that helped him make up his mind to offer packing trips. "At the time they were disappearing. We started breeding them, Wes (Holmquist), Bob Schempf, and Stan Ebel were breeding pack animals, among others. But it dawned on me that it won't do any good to produce these, try to preserve them, if they aren't being used. If there is nobody there to want to use them they will still go extinct. So I felt like I needed to help promote their use. You can breed them all you want, but if there's nobody to buy them, or use them, they're still going to disappear."

Al and Sondra offered trips in the Wyoming wilderness for more than ten years. "Once I started, I really enjoyed showing people what llamas could do and what they could be. We tried to get everybody to lead their own llama. We had a llama for everybody. And they fall in love with that llama over the course of a week in the mountains. I always felt, 'Well even if they never make another trip or they never buy llama, they are going to have positive memories about llamas.' And I know it to be true, I talk to people who speak highly of their trip years later, the trip they made up in the Wind Rivers with their llamas. So it was a promotional deal. Not that I wanted to sell them, but I knew there had to be a market for them to be preserved long term."

With this issue's (*American Llama Magazine, Issue 10*) focus on Agritourism, I asked Al if he had any advice for those who might be interested in outfitting. "I know there's tremendous demand," he said. "When we started out, we advertised a little bit in the first year but it was basically from word of mouth from then on. We filled all our days every year. We kept expanding, we got more permits. Beau Baty is doing the same thing right now. I don't think he can get enough permits to meet demand. The people we took on trips, with virtually no exceptions, say it was a life changing experience."

I asked Al if he had any advice on acquiring permits. He acknowledged that he hasn't been on the hunt for them in quite some time, so isn't sure how the processes for applying with the various agencies and ranger districts might have changed in recent years. While you can't purchase someone's permits outright, it is common for people to purchase the company of someone who is retiring, even if the assets outside of the permits are minimal. Al explained, "The Outfitter Association usually knows what is for sale. And it doesn't have to be a llama permit, it can be hiking, it can be horses. Actually one of the permits where I got a bunch of the days, he had permits, both wilderness and non-wilderness. Part of it was four-wheeler days, ATV days, and the Forest Service wanted to be done with that. So they were very happy to trade those ATV days for more wilderness days."

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

While reflecting on his outfitting days Al said, "It was a wonderful experience. I was pretty much always a loner and it's strange that I would have enjoyed it quite so much, but I did. Showing your llamas off and watching people fall in love with them. I've had grown men cry when they say goodbye to their llama at the end of the trip. Give them a big hug with tears in their eyes. It's pretty satisfying to see if you're a llama person."

Winding Down

There are several additional herd management topics that I spoke to Al about, as well as musings about specific animals and other llama breeders. Al could (and probably should) fill a book with all of his experiences raising llamas. He advises against gelding pack llamas, something you can read more about on his website. He has well thought out plans regarding weaning, giving the mother every opportunity to wean her cria naturally before intervening. Unfortunately, without turning this article into a book there were some topics that I had to leave for another time.

Al and Sondra had more than 200 llamas at their peak, but sold the vast majority of their herd in the past several years. "We sold the middle of the herd when we started dispersing. I bred the old girls until I figured I wouldn't be of any use if there was trouble." Al and Sondra were very particular about the new homes for their breeding stock, waiting for breeders who were serious about continuing Al's mission to preserve and promote pack llamas. The outfitting business, and a large group of the core Highline Trail herd went to Beau Baty of Idaho. A large group was also sold to Sherri Tallmon of Oregon, who we profiled in Issue Two of *American Llama Magazine*.

HI TRL Vaughn

Al and Sondra still own a few llamas including Melinda (nearing 28 years old), B'Elanna (23 years old), and Latte (23 years old). Al said, "We let Melinda, Latte, and B'Elanna all retire from breeding before we had to. And I kind of regret it. I think Melinda could have had a couple more kids, she had her last one when she was 21." Each is a living testament to the athleticism and longevity found in the Highline Trail Llamas that are now spread across the country.

There is also a relative youngster wandering the Ellis's pasture, in the eight-year-old HI TRL Vaughn. Vaughn is a grandson of Sir Canad, by HI TRL 6-3-0, and is from the same dam line that produced Commander Spock. Vaughn, the last Highline Trail herdsire, spends some of his time watching over the old gals in Boulder, but has also been leased out to farms to carry on his genes, namely Hidden Oaks Llama Ranch in Oregon and Mt. Angeles High Valley Llamas in Washington.

In addition to caring for his small, aging llama herd, Al enjoys encouraging the next generation of llama breeders, sharing his vast experience, and promoting the working llama. "The main thing I wanted to do was preserve pack animals. I had the example from other breeders. I didn't need to try to invent them, I just needed to duplicate them. And keep the group as diverse as I could. It's still important to promote the use of pack llamas. They probably don't need as much promotion right now, but if you want to keep them from disappearing, there has to be more people that are going to use them more than a week a year."

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Al and Sondra Ellis have done much to promote, preserve, and improve pack llamas in North America. The Highline Trail **website** explains, "Our mission was to seek out and preserve as many of the last remaining blood lines representing the original pack llama as we possibly could. We believe we have been very successful in producing some of the very best 'Iron Man/Woman' pack llamas with very diverse genetics. The time has come to pass these select animals on to a younger generation and protect their survival by dispersing them." Given the growing popularity of classic llamas today, and the expanding influence of Highline Trail stock after their retirement, it is clear that the Ellises experienced much success in their mission. The responsibility to preserve pack llama genetics, provide them excellent care, and breed them for gradual improvement is now in the hands of the next generation of llama breeders.

Antelope Alpacas
Fiber Arts Center
303-646-YARN (9276)
Fiber Arts Resource Center
Yarns, Fiber, Clothing, Blankets
Fiber Arts Supplies & Classes
Knit, Spin, Weave, Crochet, Felt
360 Main Street
Elizabeth, CO 80107
AntelopeAlpacas@aol.com
www.AntelopeAlpacas.com

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

COMMUNITY OUTREACH & EDUCATION

Putting On A Llama Information Day

By Niki Kuklenski, J&K Llamas

Starting in 2007 and for 12 of the last 13 years, a committed and devoted group of camelid owners has hosted an annual free camelid education event. The event began after a horrific rescue of 41 neglected llamas. In 2017, the group became a Washington State non-profit organization. It is run under the auspices of 501(c) 3 H.E.A.R.T. for Llamas and Alpacas and is affectionately referred to as *Info Day*.

Promoting Responsible Care

The event model has always been basic: responsible ownership and care through education.

All group participants are volunteering their time and expenses 100 percent. No individual or farm is allowed to promote/market themselves, which creates a level playing field. There is no peddling of animals, and everyone is on the same page.

Rescue is often a frowned-upon word in breeder circles. Rescue is a necessary evil or end product of irresponsible breeding, dumping, situational changes, and more. Over the years, many of us have reached the point where we no longer want to take in rescues ourselves. Having animals of our own and going through the tiring cycle of intake, rehab, and rehoming other people's animals can be exhausting. As a group, we decided to try to break the cycle and instead reach out to people before they make the mistakes of breeding, buying the wrong animals, etc.

Giving people the tools to care for their camelids through education and supporting them in a time of need, can make the difference between a camelid's forever home and a rescue situation. We strive to give honest and genuine information on ownership and care to each person at Info Day. Through the years, we have had people walk away and say they had no idea that camelids required so much care and lived so long. These people decided not to get camelids and, in doing so, would not create a rescue situation in the future.

In the beginning, we had 100 percent llama-interested owners attending. Within a few years, folks who were interested in alpacas attended. Currently, about 65-75 percent of attendees have an alpaca interest or ownership. Many do not know the sex of their animals, how to catch them, how to shear them, and more. The llama rescue market has drastically diminished in recent years, and alpaca rescues have become more common.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

Advertising Is Key

Our event is advertised on Facebook, Craigslist, local online event guides, feed stores, association newsletters, and has spread by word of mouth. We compile names and addresses all year round from events that many of us attend (fairs, fiber events, conferences, etc.), then we send out mailings via email with updates. Within the month of the event, we send out a master schedule of our classes, class descriptions, our event release, and general information about the upcoming Info Day.

Class Schedules

Info Day starts with a check-in and greeting. A release of liability is signed, and questions are answered. All classes run on a 45-minute schedule with a 15-minute break between. We start promptly at 9 a.m. with a veterinarian talk about general care. Our 10 a.m. offering is a more advanced veterinary topic like dental care, geriatric camelids, questions/answers, and more. No other classes run during the veterinary talks.

At 11 a.m. we start a three-class offering. Our topics include basic shearing, hands-on shearing, toenail trimming, hands-on toenail trimming, haltering training, basic handling, obstacle work, packing, fiber education, and more. We rotate other classes into the mix for those who come every year. Every volunteer is eager to add or provide additional information to help with the success of the ownership. It truly is remarkable to see it all come together, and people gain the skills to care for these magnificent creatures.

Another key result of Info Day is that some people decide they are capable of taking on rescues. Others decide that isn't a route they want to go and seek out responsible breeders instead. The choice is that of the participant, and nothing is forced or pushed onto them.

Our goal has always been to help those in need and provide honest and realistic information about the care and management of camelids. Over the last 12 years, we have had more than 1,000 people attend these days. Some attendees have, over time. become volunteers and presenters at the day.

Our llama rescue numbers have dwindled considerably since the start of this event. It has always been our hope that others across the country would take on our education model and offer this type of event, too! Please contact us for more information or with questions! Visit the H.E.A.R.T website at https://www.jnkllamas.com/llamaalpaca-info-day.html or our Facebook Page https://www.facebook.com/llamaalpacaedday, or contact me at info@jnkllamas.com.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.

HERD HEALTH

Preparing for a Vet Visit

By Marty McGee Bennett, CAMELidynamics.com

Our veterinarians are busy. The worst thing we can do is make them wait while we gather ourselves and our animals. Here are four things you can do to help your veterinarian and your animals for that farm visit.

1. Be ready but not too ready. What I mean by this is... It is a good idea to get the animals up close to the barn or working area but it is not a great idea to confine them so that your vet can walk right in to a pen full of animals. We move the animals up into a holding area by our handling facility so that we can easily move animals into catch pens as the vet pulls up and gets sorted out and ready. Confining your animals will only get them upset. They will be less cooperative AND the values like temperature and respiration will be abnormal to boot.

2. Use a catch pen and don't be afraid to pack the pen for veterinary work. Just because your vet is only going to work with Fluffy doesn't mean you can't pack the pen to make it easier for her. Any animal will do better when they aren't alone-safety in numbers.

3. Have everything you may need handy. Make sure to have a wand and catch rope, handler helper halter of the right size (maybe a couple of different sizes) and a lead.

4. Let your vet know that he or she can feel free to use a sedative if it would help. You know your animals and if it is going to be a huge fight to do what needs to be done then it might be a good idea to begin with a sedative. Once you begin working and the animal gets upset, the time for a tranquilizer has passed. On the other hand if you have experienced a big fight in the past and you have never tried using a catch pen and balancing techniques instead of restraint, you may be pleasantly surprised at how well your animal will do. Try a few techniques first so that once your vet is there you have some experience and positive expectations for how things will go.

I will tell you that I have found over and over and OVER the animals that are the worst when you restrain them are THE BEST when you don't. REALLY this is true- give it a try.

Content of *The Journal of RMLA*© may not be reprinted without permission of the Author and the Editor.
Email rmaleditor@gmail.com to obtain permission.