

Llama Living Hear What All The Humming Is About

December 2020

Michigan Lama Association

Vol. 25, Issue 4



CONTENTS

- 3 Looking for last minute gifts or stocking stuffers?
- 4 President's Message The year in review
- 6 Calendar of Events
- 8 Marty's Corner

Llama Living



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- 5 MLA Spring Fund Raiser
- 16 Vet Corner
- 18 How Llamas Could Aid in the Fight Against Covid-19
- 20 Millennium Magic Resurrected
- 21 2021 MLA Membership Application
- 22 MLA Advertising Form



Cover art graciously done and submitted to Llama Living by Renee` Hobbins.

Thank you Renee` for another great holiday cover

Michigan Lama Association

Web Site - www.michiganllama.org Facebook Page - Michigan Lama Association

Bittersweet Farm



Suzanne Hockin Frambes Ken Frambes (517) 857-4626

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Next Llama Living Deadline

March 15, 2021



<u>Looking for last minute</u> <u>gifts or stocking stuffers?</u>

Look no further than the MLA Merchandise Department!

Contact Renee` Hobbins to see what great lama items are available for you today.

(231) 228-6128

THANK YOU

Thanks to all of the MLA Board Members and Committee Chairs for surviving 2020 and keeping the Michigan Lama Association on track and viable in an uncertain world.



MLA started the year with many wonderful plans for our shows. Lamafest was going to be very exciting. We planned to have a double ALSA and ILR sanctioned show. We continued to plan for that even after March.

The decision to cancel our shows was very hard, but basically out of our control. Our 2 spring show locations are county fairgrounds and, therefore, subject to county rules. The county fairgrounds were closed due to the pandemic. We continued to be optimistic that by August restrictions would be lifted. We could not put on Lamafest with the restrictions of 50 people inside the Pavilion. In addition, we are subject to the rules of the MSU Pavilion. As it turned out, the MSU Pavilion canceled all their scheduled activities for September.

Fast forward to November and we are in the middle of a new surge of Covid 19. So here we go again. However, the MLA Board of Directors will be planning our shows for 2021. We do not have a crystal ball to see into the future, so understand that we will do our best to continue our shows. We are not alone in this challenge. Many of next year's show listings are "tentative". Please keep checking the MLA facebook page, Llama Living, and the MLA website for all the update news.

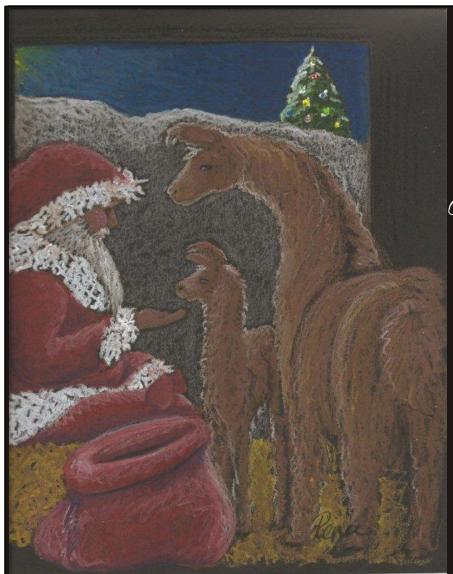
MLA is committed to providing shows that are safe and compliant with the restrictions in place. We can work within the mask and social distancing requirements. We have no idea what other restrictions and requirements will be in place until we are closer to the time of each show. This pandemic has taught us many things, least of all to be flexible and patient.

I am truly thankful to have my llama and farm to keep me on track these past months. Regardless of the other things going on, the llamas need our attention everyday. That alone is enough reason to stay safe and healthy. I certainly missed seeing all our lama friends and welcoming visitors to the farm. All something to look forward to in 2021.

Please stay safe and healthy,

Corky Dubois





Merry Christmas and Happy New Year to All of Our Dear Llama and Alpaca Friends!

May 2021 bring new blessings, wisdom, and health!

The Hobbins Family

MLA Spring Fund Raiser

As with everything else in 2020 there is no guarantee that ALL lama shows will traditionally take place in 2021. But, with the vaccine around the corner, there is hope that events will start to return to normal next year or 2022 for sure.

With Black Friday extending well into December this year it is a great time to pick up items for the next MLA Spring Fund Raiser at really great prices....OR....when you make room for new lama items in your home, pack up the old lama items and mark them for the next MLA Spring Fund Raising table to generate money for the publication of Llama Living.

For more information as to where to send those items, contact Annette Aldrich at (517) 675-7705 or e-mail her at raaldrich@tds.net.

Calendar Of Events



EDITOR'S NOTE:

As we are all painfully aware, planning for events cannot be "written in stone" for 2021. The listings below are all tentative dates and events. Be sure to check with all of the coordinators/organizers/superintendents nearer to the events to make sure that they are still being held. This, however, does not prevent you from putting them on your calendar now so that you don't forget the planned dates for your lama events.

2021

JANUARY

FEBRUARY

February 15, 2021

Deadliine For Llama Living

MARCH

APRIL

MAY

May 15, 2021

Deadline for Llama Living

May 22-23, 2021

Parasite Clinic with Dr. Pam Walker

Contact, Denise Fehrenbach for more information.

JUNE

JULY

July 22-24, 2021 Ohio State Fair

See the ORVLA Facebook page for more information.

AUGUST

August 15, 2021

Deadline for Llama Living

SEPTEMBER

September 3-5, 2021

LamaFest

MSU Pavilion

East Lansing, MI

See the MLA web site for more information.

OCTOBER

October 20-24, 2021

GALA Conference

Richmond, VA

www.galaonline.org for more information

NOVEMBER

November 15, 2021

Deadline for Llama Living.

MLA Annual Board/Membership Meeting

Location and date to be determined

DECEMBER



Great Esçape Llamas

Gary & Bev Surratt 14919 Burton Rd Clayton, MI 49235 (517)547-3524



gasurratt@tc3net.com
show-stud-fiber-guard -soil enhancers

Marty's Corner

7

Working With Rescued Camelids

By Marty McGee Bennett

Llamas and alpacas are all individuals and don't act the same way. One technique might offer the perfect solution for one animal and be ineffective on another. On the other hand, as a person who teaches people how to handle and train camelids, I find it helpful to categorize animals so that I can help their owners cope. There are classes of difficulties and a common category is the rescue. Rescued animals might be neglected or they might be abused or perhaps they just suffered from inept handling from people who didn't care. For any of these reasons they may develop a myriad of behavioral patterns as they deal with the challenges inherent in navigating these unfortunate circumstances. Rescued animal may have been confined, maybe they had to live in close quarters with nothing to do. Maybe they were handled by people short on experience with camelids. Many rescues don't know how to lead and have been in a herd or maybe totally on their own for their whole lives as a consequence when they are rescued, they might have been dragged from around the head or pushed and pulled when it was necessary to move them.

However, not every rescue becomes a screaming mee-mee, so it is more than just a challenging life experience that creates the problems. Difficult animals are usually born with certain tendencies: they have trouble thinking under any pressure at all, they may not have very good coordination or reflexes, they might need more routine or have trouble figuring out how to cope in new situations, they may be over reactive to noises or quick movements so simply putting them in a nice home is not necessarily the end of the difficult behaviors. Difficult animals are often either very bright or very "not so bright." They may have trouble figuring out what is wanted or may use their extra intelligence to protect themselves from what they consider a life threatening situation. Camelids are, I think, by nature dramatic and oppositional and like their kindred spirit - cats - they hate to be restrained. They don't like to be controlled and don't feel safe unless they understand what is happening and can get away if they feel threatened. These animals develop coping mechanisms to help with their situation such as screaming, spitting, kushing, elaborate rearing and spinning...and more.

Sometimes these difficult animals appear so distressed by any handling that owners will decide that the best course of action is to leave them alone. Llamas and alpacas must be wormed or vaccinated. Toenails must be trimmed and we must help them if they are wounded or in the case of pregnant females, if they have a difficult birth. We simply cannot leave them alone. Camelids don't distinguish between halter training and a rectal exam - it is all in the category of humans doing things to them. Every time we are with our animals our behavior shapes their attitude about us. Well intended owners think they give their difficult rescued animals a big break by leaving them alone as much as possible. From our point of view these unfortunate animals are getting a 360 day vacation - they should be grateful! From you difficult animal's point of view it is very different. They think, "The only time a human has anything to do with me it is unpleasant." In their experience humans never just take you for a walk or rub your neck or scratch your back, they always do unpleasant things. Therefor it is even more important to spend time with rescued animals doing things that ease their fears and create a different expectation. It is important to do your best to accomplish herd management tasks in the easiest, least invasive way possible and to minimize restraint.

My training/handling program is designed to meet these needs. It is not possible in this article to go over all the methods and techniques I use to accomplish herd management tasks.* What I will address in this article are problem solving techniques for the most common behavioral problems associated with difficult/rescued animals.

Imagine as you look at your llama or alpaca that he or she has a control panel just like the dashboard of your car. There are certain buttons you can choose to push or NOT push. Push these buttons and you get very predictable results, just as you do when you turn your windshield wipers on or toot your horn. Difficult animals,



come equipped with a scream button, a kush button and a spit button. Most people want to avoid these behaviors but do not understand what they are doing to push the buttons.

CATCHING THE RESCUE

Changing the way you catch these animals is the first best way to avoid all the unpleasant buttons. Your rescued animal may be expecting to be cornered, grabbed, held and perhaps dragged and responds by planting their feet, spitting or kushing. Catch your llama or alpaca differently and you avoid pushing these buttons and unwanted behaviors.

Herd your rescue and a calm animal friend into a catch pen (9 x 9 feet square is ideal). Get yourself a wand or light weight herding tool (about 4 feet long) and tie a lightweight rope (about 10 feet long) to it. You are going fishing for camelids. Maintain your body position behind the animal's eye in the center of the pen. Raise your rope up and over the animal and guide the rope over the head. Once you have both ends of the rope, you untie the wand and you have caught your camelid. I know this might seem cumbersome, but so is taking a shower every time you catch your animal.

It has been my experience that if you use this technique for catching difficult animals, they will very quickly begin to stand quietly and allow you to simply walk up and slip a rope around their neck. With this method you need not corner

Continued on Page 10



Catching lama wand.

Working With Rescued Animals Continued

them and you can simply help them stand still with the rope as you walk up to them. How you respond with the rope once

you have it around the neck is your next opportunity to avoid the dreaded buttons. Use your rope to help keep the animal in balance over all four legs, particularly the front legs. An animal standing in balance feels more in control and safer, particularly a frightened rescued animal. When you proceed to haltering, give the animal more room than you normally do. Most people are in the habit of pulling their llama or alpaca up close as they put the halter on. Give your animal almost the full length of your arms. You will be able to see your animal's feet and can tell if the animal is standing in balance.

SPITTING

It is unpleasant to be spat on. On the other hand, the rescued animal has probably developed the spitting habit for a good reason. Yelling, hitting, spraying with water, or spitting back may temporarily suppress the behavior, but is not the best way to change your animal's mind bout people over the long haul. The catching method outlined in the preceding section, in my experience, eliminates most of the spitting problem. Spitting is usually a response to being cornered. This method will also allow you to control the head early on in the catching and haltering process and turn the head away from you if the spitting persists. Remember to breathe. Most of the time a llama or alpaca that is thinking of spitting is usually holding their breath. If you take a deep breath, the animal will often do the same thing and the urge to spit goes away. I think turning the head is all that is appropriate in terms of a direct response to the behavior. If you engage in very intermittent eye contact and remember to breathe, it will help greatly. Let go of your thoughts like, "Don't you dare!@" These thoughts are reflected in your body language and your animal will react negatively.

SCREAMING

It is my theory that camleids learn to scream as a way of coping with extreme unpleasantness. The screaming literally drowns out everything else. As with any behavior, it begins for a reason, but once it becomes habit the behavior may no longer have relevance to a new situation. We must find a way to change the habit. Again, change the way you catch your animals using the catching techniques outlined above and you should see a lot of the screaming disappear. However, if your llama or alpaca still screams, you may find



Balancing your lama.



Improper mouth closing.

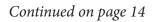


Proper mouth closing.

it helpful to gently, but firmly close the mouth. Be sure if you do try closing the mouth that you use your thumb up very high on the bridge of the nose - close to the eye. In this way you will not compromise the animal's airway. Once the animal has settled down a bit, gradually lossen the pressure and see what happens. Speak soothingly as you work and take deep breaths. Closing the mouth will stop the screaming enough to allow the animal to realize that you aren't hurting him or her.

KUSHING

Perhaps the most frustrating and difficult problem to deal with is the llama or alpaca who refuses to remain standing. The catching advice above may help with this problem as well....but how in the world do you get them to lead when they drop like a pole axed mule every time you ask them to take a step? The key to solving this problem is to change the picture that your animal sees. In this case the "KUSH" button is "a human within six feet and a little constant pressure on the head". In order to change this picture for your camelid, use a much longer lead. I like a lead about 20 feet long and I use the whole thing. Practice initial leading sessions in an aisle way that is longer than it is wide. This helps you avoid the "human within six feet down I go" button. You can gradually move closer and lead at a more convenient distance. MAKE ABSOLUTELY sure that the halter you are using fits. Most halters are prone to slip down the nose bone and do not offer enough room in the nose band. Tighten the crown piece of the halter more than you would normally even at the risk of feeling it might be a bit too snug. The halter should fit right up by the eye, this is the safest place and your animal knows it. A properly fitting halter should still have some room in the nose band, otherwise you are tying the animal's mouth shut. I have designed a halter that will fit as I describe.* Many, if not most, halters on the market either slip down the nose or, when tightened so that they won't do this, constrict the mouth. If your camelid feels like the halter is going to slip, this will also push the "Kush" button. The second half of the answer is to use a VERY LIGHT NON CONSTANT signal on the lead or simply wait a bit and let the size and shape of the pen suggests to your animal that the idea is to walk along. If your animal does kush, resist the urge to pull on his or her head. Make sure you are using the full length of the lead with total slack. Don't stare. Stand at an angle to the animal, not directly in front, and count to thirty potatoes! It may take all of a while minute, but I bet that your camelid will be up before you get to fifteen potatoes. Your rescue has been rushed and dragged and pushed and





Aisle way.

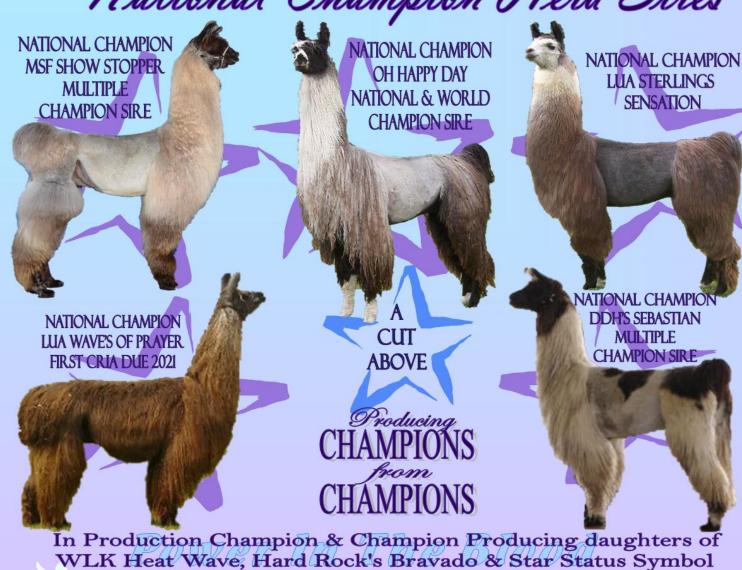


Halter with roomy nose band.



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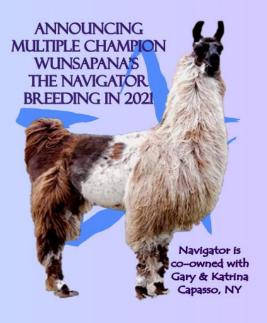
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Working With Rescued Animals Continued

pulled - you are not going to fix this problem with more of the same. Try just thirty potatoes of patience.

As you work with your rescues, remember that TRUE INSANITY IS DOING THE SAME THING OVER AND OVER AND EXPECTING TO GET A DIFFERENT RESULT. If you keep pushing the spit, scream, and kush buttons, you will keep getting the behaviors that go with them. Time spent with these animals is not a waste of time and will benefit both you and your llama or alpaca. Working this way with your difficult animal will make you a better handler and trainer and your effort will change the mind of a troubled animal.

- * My book, The Camelid Companion, Camelidynamics clinics, online courses, webinars and DVDs are all there to help you with your animals.
- * The Camelidynamics also known as the Zephyr Halter.



Improperly fitted halter.

Check out www.camelidynamics.com for more information about Marty, her workshops, and newsletter. \Box









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- Is teaching your llama or alpaca to lead like flying a kite or dragging an anvil?
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Crystal River, Florida March 19-21, 2021 Santa Fe, New Mexico April 17-19, 2021 Devon, Great Britain March 6-9, 2021 Banner Elk, North Carolina

May 1-3, 2021



For a list of Marty's 2021 clinics, go to **www.camelidynamics.com** and click on **LEARN HOW**.

Vet Corner

Neonatal Maladjustment Syndrome...a.k.a...The Dummy Cria By Dr. Charlene Arendas, DVM

You've been waiting for this moment for nearly a year now. You anticipate it every day as you check your barn cameras or make the daily early morning trek to the barn. You're on full cria alert and you're ready - you've got a kit packed with towels, blow dryer, iodine, gloves, lube, cria scale, oxytocin, enemas, and domperidone. You got this. Or do you?

Maybe you have a first time mom taking a little longer than expected to push the cria out. You don't want to interfere too much, but after 30 minutes you got nervous watching her walk around with the head hanging out and helped pull the cria. So everything's fine now, right?

Maybe the sack (placenta) didn't break and it's coming out, but you don't see a nose or feet yet. You tear the sack open and help deliver the cria. Thankfully, it's alive. It'll all be okay, won't it?

Maybe you missed the whole darn thing and you arrive to the barn to find a wet newborn on the ground. Fantastic! You didn't have to do a thing and it all turned out great, or didn't it?

Any One Of Us Could Find Ourselves In This Exact Scenario. So What Exactly Is A "Dummy" Cria And How Does It Occur?

A "dummy" cria is the lay term for neonatal maladjustment syndrome. This, of course, is not unique to llamas - it can happen in alpacas, foals, and calves as well. A "dummy" occurs when there is a period of time of oxygen deprivation to the fetus in the perinatal period. So anything that could possibly compromise the oxygen supply to that fetus at the very end of pregnancy, during birth, or in the immediate post-partum period could potentially cause a "dummy" cria.

PRE-parturient (just prior to birth) causes can include diseases of the uterus itself such as uterine infections or uterine torsion. Also, systemic diseases in the dam like bacterial sepsis, viral infections, and fever have the potential to induce inflammatory responses that could compromise the fetal oxygen supply.

When a cria is born, you normally see a nose and feet coming out, because the cria has broken through the placental sac and emerges, then the placenta separates from the uterus and is delivered shortly thereafter. However, sometimes the placenta separates too early from the uterine walls and it starts to emerge before the cria. This is an emergency. That placenta is the only oxygen supply to the cria and once it begins to separate from the uterus, that oxygen supply diminishes until the cria can breath on its own! You need to rip that sac open ASAP and try to get that cria out quickly. Also, any prolonged delivery (dystocia) can cause lack of oxygen to the cria. Prolonged delivery might occur due to having a maiden dam, or older dam who tires easily, or even a cria in the wrong position (such as breech) that requires manipulation.

Immediate POST-partum causes are uncommon, but could hypothetically occur if a cria is born in an inopportune place such as a water trough, pond, tangled into a fence, or even if the newborn were to get smothered by being stepped on or kushed on by another llama.

So How Do You Know If You Have A "Dummy" Cria?

It may not be completely obvious at first that you have a "dummy" cria. Some babies take longer than others to stand and nurse. Some crias of first time or older dams might not be as robust. But a "dummy" cria can really run the spectrum depending on the degree of oxygen deprivation and compromise. Some crias are very mildly affected and you may not even notice. They might just seem overly confused about the nursing process and finding mom, possibly seeking out walls or corners looking to nurse, but maybe after a day or so they get over it. Or, you could have a weak, completely recumbent cria who is unable to stand, not breathing properly and without a suckle reflex. Yikes!

What Do I Do If I Think I Have A "Dummy" cria?

Try to recognize that there's an issue with this cria as soon as possible. It's not making attempts to stand up hours after birth. It has no desire to nurse. It acts odd and doesn't respond as expected when you touch it or talk to it. Once you know you have a "dummy", you can start trying to help it. The good news is that having a

a "dummy" cria doesn't mean it is necessarily going to die. You just have a lot of work ahead of you to get this baby through the first days or week of life.

- 1 Get colostrum into that cria before 24 hours of age, ideally before 18 hours! If the cria has a suckle reflex, you may be able to hold it up to the dam's udder to nurse. Or, you can milk the colostrum from the dam and feed it via a bottle or feeding tube. Last resort hopefully, you have some frozen colostrum (llama or goat) on hand that you can thaw (slowly!) and feed. You already have a compromised cria you don't need it also have a low IgG and risking sepsis.
- 2 Physical therapy pick up the cria and place its feet in the proper position for standing. Gradually allow the cria to try to bear weight. Shift the cria's weight from front to back and side to side. You need to get the cria used to learning how to stand and feeling its weight shift on its feet. Touch the toes and massage the legs you're trying to stimulate nerve and muscle connections.
- 3 The Madigan Squeeze This is a technique used in "dummy" foals under 24 hours of age. The idea behind it is that there are certain hormones and chemicals occurring in a fetus that help it to keep calm and quiet in the womb . It is believed that the normal birthing process ("squeezing" through the birth canal) stimulates the fetus and turns off some of the effects of these substances and helps the brain sort of "re-boot". You can Google "Madigan Squeeze" to view simple how-to videos and diagrams showing how to use a simple rope to create simulated pressure on the chest as would occur during a normal birth. The pressure is held for about 20 minutes, then released.
- 4 Have your vet out to evaluate the cria, because you might not necessarily have a "dummy". Other problems can mimic a "dummy" cria such as sepsis, a developmental deformity of the musculoskeletal system, cataracts, or a neurologic issue. They may decide to administer a plasma transfusion, prophylactic antibiotics, or other supportive medications such as thiamine, vitamins, or anti-inflammatories.

It may take one or two days, it may take a week or up to two weeks. But you should end up with a functional cria that can get up and down by itself, nurse and walk around. There could possibly be some lasting effects - neurologically (walks funny, gait is "off"), vision impairment or blindness, or even small stature. Some "dummy" crias can recover completely and you'd never know they had an issue. While a "dummy" cria may not end up being your next show or breeding animal, they can still be a wonderful pet, fiber animal, or possibly even a 4-H project!

Now that we've learned a little bit about "Dummy Crias", I'll tell you about our experience this spring. We walked back to the barn late one morning in March, knowing we had a few expectant dams. Well, thee was a wet newborn cria kushed next to his mother and a placenta on the ground a few feet away. WONDERFUL! We love it when everything goes as planned without us needing to assist. Boy were we wrong! He wasn't standing yet, but we weren't concerned as he probably wasn't born but a few minutes before we found him. Well, my mom observed him over the next few hours and began to realize that something was wrong. He made minimal attempts to stand - it was as if his legs didn't work. She also noticed that he was kushed a bit oddly - his hips were splayed out a little and he didn't seem to care that his legs were folded oddly underneath him. She picked him up to place him under his mom's udder a few times and he could not stand up or nurse. There was definitely a problem. After work that night, I came over to check him out - yes - something was definitely wrong. Besides what she had noticed earlier, I realized that he wasn't looking at me or his dam, he didn't notice when things moved in front of him or turn his head - he was just staring ahead blankly. He also had no idea whatsoever how to use his legs to stand up. Luckily, I could determine he did have sensation down to his toes, as he would pull back his leg, if I pinched the toes on each foot. Otherwise, his vital signs were good - a nice normal heartbeat, clear lungs, normal temperature.

Well, it looked like we had some work ahead of us. This little guy was compromised, so the first battle was making sure he got colostrum. We first tired to hold him up to his mom's udder, but this proved insanely difficult and he could not grasp a nipple. We were going to have to milk her. His dam is not the most agreeable llama, so I had to give her a little tranquilizer to be able to milk some colostrum from her. Luckily, he had a weak suckle response, so I was able to get it down him in a bottle. Since he couldn't stand and acted like he had no idea how to even use his legs, he was going to need to be bottle fed every few hours until he could do it on his own. Because his dam *Continued on page 18*

Vet Corner Continued

was being difficult, we used frozen colostrum for that whole first overnight period. The next day, even though

he could not stand, he seemed to be able to hold his neck up a little better and we were able to hold him up underneath his dam, put a nipple in his mouth, and get him to suckle. On the third day, he tried to stand, but needed a boost.

Each day he got a little stronger, until about day 5 when he was able to finally get up and down on his own! Once he could do that, he'd wander about the stall until he found his mom's udder and latched on. It was obvious he couldn't see well - he didn't have a good sense of balance and stumbled when he tried to take steps, and had absolutely no reaction to a hand or other objects in front of him. Luckily, he could hear, so we tied a bell around his mom's neck before we allowed them to venture out of the nursery stall. Fast forward to now and he's approaching six months old, knows his barn and pasture well and plays with the other crias like there is no issue. He is very alert to noises and comes when you call him. Often, when at rest, you will see him tilt his head slightly and scan his head back and forth - he's listening! He will probably be a late weaner when one of his buddies is ready because we know swapping his pasture and barn is going to be a huge adjustment for him. Also, because this cria had to be handled excessively, he may need to be castrated earlier than 18 months, behavior - depending.

All-in-all, it's still a win for us - he's got gorgeous fiber and I've got a 4-H'r that wants to try and train him next year!

Reprinted from Topline, September 2020, Volume 38, Number 3. □

How Llamas Could Aid In The Fight Against COVID-19

By Dr. Mike Tibbetts, Clover Brooke Llama and Alpaca Farm

The holy grail for fighting the COVID-19 pandemic is a safe effective vaccine. However, vaccines don't help people already infected with the virus.

Therefore, an antiviral treatment would be as important tool to help infected people, while we wait for a vaccine to be developed. Despite some initial excitement about combination therapy with hydraxychloroquine and azithromycin, no clearly effective treatment has been found.

The spike protein on the surface of SARS-CoV-2 (COVID 19) needs to bind to the ACE2 protein on the surface of human cells in order to infect them. If we could find a molecule that binds to the part of the spike protein that binds with ACE2 and blocks the interaction, it would be a good candidate, therapeutic molecule.

It would be even better, if the molecule was so specific that it didn't interact with anything in the host, minimizing the possibility of side effects. We would also need a way to efficiently make lots of the molecule.

Llamas to the rescue!

A recent report describing just such a potential therapeutic molecule for SARS-CoV-2 has been getting some attention. The therapeutic molecule is delivered from a type of antibody made by llamas.

While all vertebrates produce antibodies as part of an immune response to infection, Camelids (including llamas) make an additional interesting form of antibodies that have particular promise as therapeutic agents.

Antibodies are proteins that recognize and bind to foreign substances (antigens), including proteins on the surfaces of viruses. Antibodies have a characteristic size and shape. Each is composed of four protein chains and harbor two identical sites that bind an antigen molecule. In addition to the conventional form, llamas make another form of antibodies that have only one antigen binding site and are smaller than conventional antibodies.

It is their small size that makes them so interesting and through recombinant DNA technology, they can be made even smaller, creating so-called nanobodies. In the world of proteins, human antibodies are relatively large with a mass about three times the average. Their relatively bulky structure can make it difficult for them to access all of the nooks and crannies of their target antigen.

In an immune response, this is generally not an issue, since the binding of an antibody to any part of an antigen acts as a flag, targeting the antigen for destruction by other components of the immune system. Those human immune system components only recognize human antibodies.

So, treating a virus with antibodies from a non-human species would not be effective unless those antibodies recognize the specific part of the virus spike protein that allows it to infect host cells.

This is where size matters. Very small proteins are more likely to have access to all parts of the spike protein. In addition, small proteins tend to be more stable and hence are effective for a longer period of time and require lower doses.

Nanobodies

Nanobodies are antibodies derived from the non-conventional llama antibodies which are engineered to be even smaller. An international, collaborative group of researchers have found a nanobody that binds to the very spot on the SARS-CoV-2 spike protein that interacts with the human ACE2 protein. The scientists who describe the nanobody also showed that when it binds to the spike protein it prevents SAR-CoV-2 from infecting cells in Culture 1.

The scientists started by immunizing a llama with just the spike protein from the related SARS-VoV-1 and MERS-CoV coronaviruses. They then isolated antibody producing cells from blood donated by the llama and screened them for those producing an antibody that recognizes the spike protein. To make the even smaller nanobody, the group took just the relevant part of the llama antibody gene and put it into yeast. The yeast

How llama blood could help fight coronavirus Drop of blood taken from llama Researchers identify antibodies which show weak binding to virus Weakly binding antibodies are engineered to create new nanobodies which bind tightly New nanobodies bind to the virus' spike, blocking it Virus can't enter human cells and is neutralised

The illustration above was online in the BBC News, July 13, 2020 that was attached to an article, "Coronavirus, Llamas provide key to immune therapy", by Victoria Gill.

was used to make lots of nanobodies that were then tested for effectiveness. One of the several nanobodies they tested completely blocked infection of cells in culture.

While we wait and hope for an effective vaccine, therapeutics to treat infected people are desperately needed. Nanobodies derived from llamas are an intriguing possibility.

The scientific community has been investigating the potential Camelid antibodies for a couple of decades and there is cause for optimism about both their safety and efficacy.

Sources: l Wrapp D. De Vlieger D, Corbett KS, et al Structural Basis for Potent Neutrulization of Betacoronaviruses by Single-Domain Camelia Antibodies [published online ahead of print, 2020 April 29]. Cell 2020:50092-8674(20)30494-3.

Reprinted from The Gala Newsletter, August 2020, Vol. XXXVI, Number 3.

Millennium Magic Resurrected

By Tami Lash

2020 did not bring about "all things bad". We have not held llama shows in over 10 years. Not without trying. However with the change of those in charge of the running of our local county fairgrounds, it seemed impossible. Impossible that is until summer of 2020. With most all llama shows canceling, we went forward with our unction's to see about the possibility of holding a llama show at a horse form, not too farm from our farm. Not just any ole llama show, but a dual sanctioned double judged llama show. As long as we were going to do it, we might as well do all we could to help support our friends, exhibitors and both show associations. The Heaven's aligned and our dual sanctioned, double judged Millennium Magic Summer Classic was held. It was so much fun and such a blessing to many, which was the reason, and an answer to my prayer, that it would bless everyone involved, especially the farm hosts. We also brought back a Futurity and offered 5 Best of Show awards: BOS Futurity and double BOS female and BOS male (for each judge).

After our MMSC was held, even more cancellations came in: The ALSA Grand National and also their Regional and dual show in Indiana, then NAILE. The thought came to offer one more show and plans moved forward to do so, again, with the hope to bless all involved and to give as much as we could...and it did...and we did...and they did. Millennium Magic Hobo Halloween was another fun weekend for all. Since it fell on Halloween weekend we added a fun Halloween Trick or Treat Costume class and offered a safe trick or treating time for all exhibitors. As entries came in for this show, we had been asked to offer Dam and Cria class and Cruising Cria, which we were easily able to accommodate and even more fun was had. Thought also came to mind to offer 5 cash drawings for 5 youth to be drawn during our day of showmanship and performance. We were able to purchase some fun awards and the idea came to offer more Best of Show offers like we normally enjoy at NAILE. We were able to offer 7 creative Best Of Show awards at our final show. We hope everyone who took part in any way during our two full weekends of shows were blessed and enjoyed themselves. We are so grateful to have had this opportunity to provide llama shows again and for our Judges, Clerks, Exhibitors' and everyone else who supported these efforts in any way. \Box



Yearling MWMLU





Intermediate Youth Showmanship



MWM Champion



Non Breeding Adult Llama



2021 MLA Membership Application

The following information will comprise your information. *LAST NAME		•		
*FIRST NAME				
ADDITIONAL NAMES				
FARM/BUSINESS NAME				
*ADDRESS				
*CITY	*STATE	*Z	IP	
PHONE Cell	Home _			
*E-MAIL				
WEB SITE ADDRESS				
SPECIALTIES				
LLAMA LIV	ING NEWSLE	TTER		
Online versions in color pdf format are always of \$12. per year to your membership fee. P check box below.				
NEW MEMBERSHIP (\$25)FARM/FAMILY(\$25)YOUTH MEMBERSHIP (\$15) Birthdate	VE	EWAL (\$25) F/VET STUDE RD COPY OF L	· /	/ING (\$12)
	TOTAL E	NCLOSED: _		_

Advertising opportunities are available in both the Membership Directory and the Newsletter.

Check it out at www.michiganllama.org or our Facebook page

For inclusion in the MLA Directory, send this form and check or money order payable to MLA, no later than January 31, 2021 to: MLA Treasurer, Pat Schneeberger, 11389 Broadbent Rd., Lansing, MI 48917. TX (517) 627-6562.

MLA Advertising Order Form

MLA offers 2 opportunities for advertising. Llama Living Newsletter published quarterly and The MLA Membership Directory published annually.

Advertising Rates

Quarterly Llama Living Newsletter		Annual	Annual MLA Directory		
Ad Size	Price per Issue		ember	Non-Member	
Full Page 9-1/2" x 6-3/4"	\$40.00	Inside Front or Back Cover	\$70.00	\$90.00	
10 to		(5"w x 8"h)			
½ Page	\$25.00				
vertical: 3-1/4" x 9-1/2" or horizontal 4-3/4" x 6-3/4"		Full Page Inside (5"w x 8"h)	\$50.00	\$70.00	
1/4 Page 4-3/4" × 3-1/4"	\$15.00	½ Page (5" w x 3.875" h)	\$35.00	\$55.00	
Business Card positive print ready	\$ 5.00	1/4 Page (2.5 w x 3.75 h)	\$25.00	\$45.00	
Classified 6 lines	\$ 5.00	Business Card	\$10.00	\$20.00	

Details

Ads for newsletter must be in PDF format 10% discount on 2 or more ads (any size) in same calendar year Newsletter deadlines: Feb 15, May 15, Aug 15, Nov 15

Details

Ads must be in .jpeg format
Ad and payment must be received by
MLA by January 31 to be included in
Directory

INSTRUCTIONS:

- 1. Circle your advertising choices
- 2. Prepare your ad in .jpeg or PDF format and email to Pat at pschne1059@aol.com
- 3. Total your cost and make out check payable to MLA
- 4. Mail check and completed order form to: Pat Schneeberger
 11389 Broadbent Rd
 Lansing, MI 48917

Name:	email address:		
Farm/Business Name			
Address		Phone	
City	ST	Zip	
	To [,]	tal enclosed	



KEEP ONE LAMA APART







AT LEAST 6 FEET

PROTECT AGAINST INFECTION

Advertising in This Issue of Llama Living

FARM/COMPANY	<u>PAGE</u>
Bittersweet Farm	3
CAMELIDynamics.com	15
Great Escape Llamas	7
Lash's Unique Animals	12-13
Miller's Llamaland	4
The Hobbins Family	5
Thekbusch Farm	14

Special thanks to all of the MLA members who chose to support Llama Living with their advertising in the newsletter throughout 2020!





Llama Living is a quarterly newsletter published by the Michigan Lama Association.

The opinions and articles in the MLA newsletter, *Llama Living*, are strictly those of the authors and do not necessarily represent those of the MLA or the newsletter editor.

Newsletter deadlines for articles, classified ads, and traditional advertisements are February 15th, May 15th, August 15th and November 15th.

Ads and photos may be sent by e-mail as an attachment in PDF format to GRJax7@springcom.com. Ads appearing in the online version only of *Llama Living* will be in color.

All ads submitted must be positive print ready (no film negatives). For compatible advertising sizes, see next column under, "Advertising Rates". Any ad not meeting listed sizes will be adjusted to accommodate the page.

A discount for multiple ad placement is available. A 10% discount is offered on advertising run for a minimum of two or more issues in the same calendar year. This offer is valid for any size ad, but MUST be ordered and PAID for at the same time to receive the discount.

All current *Llama Living* accounts must be paid in full prior to the placement of future advertising. Send all checks for advertising, made out to the Michigan Lama Association, articles, classified ads, and camera ready advertisements to:

Llama Living Suzanne Hockin Frambes, Editor 14775 Peckham Rd. Albion, MI 49224

ADVERTISING RATES	<u>PRICING</u>
Half Page Back Cover	\$55
(horizontal 4-3/4 x 6-3/4)	
Full Page	\$40
(9-1/2 x 6-3/4)	
Half Page	\$25
(vertical 3-1/4 x 9-1/2)	
(horizontal 4-3/4 x 6-3/4)	
Quarter Page	\$15
$(4-3/4 \times 3-1/4)$	
Business Card	\$ 5
Insert	\$70
(8-1/2 x 11)	
(Check for number required)	

Classified Ads - A minimum of \$5 for up to six lines. \$1 for each additional line.

Llama Living

c/o Suzanne Hockin Frambes 14775 Peckham Rd. Albion, MI 49224

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