



Raising sheep the EASY way!

Barbados Blackbelly Sheep Association International

# Blackbelly Banner

## Is Ovine Progressive Pneumonia (OPP) Dragging Your Flock Down?

Ovine Progressive Pneumonia (OPP) is a common viral disease of sheep in North America. A 2001 study conducted by the USDA found that 36% of U.S. sheep flocks are infected with OPP. July/August tests of two flocks of Barbados Blackbelly sheep confirmed a 50%–60% infection rate. Because Barbados Blackbelly breeders have bought and sold from each other since 2004 when, we now know, OPP was first diagnosed in the breed, it is likely that all BB flocks in the U.S. are infected.

Most of us have never heard of OPP. Most infected sheep will never show any symptoms. So...

### Why Should You Be Concerned?

OPP can be as obvious as Stefania Dignum's DESCRIPTION OF A TYPICAL OPP EWE (see sidebar). Or OPP can be more subtle, affecting the udder, joints, and nervous system as well as the lungs. At best, these subtle effects have only a negative impact on productivity. At worst, some of your most productive ewes

may develop chronic pneumonia and weight loss, leading to death.

The most common clinical signs of OPP are severe and progressive weight loss, labored breathing or pneumonia, and hard, unproductive udders. However most infected sheep never show any clinical signs. When signs are seen, they occur primarily in ewes over 2 years of age. Once a sheep is infected with OPP, it stays infected for its lifetime and serves as a carrier. The disease progresses slowly. Once an animal starts to show signs, it will ultimately die if not culled beforehand.

If you have OPP-positive sheep in your flock, you might not see any problems. But more likely, the undiagnosed disease is costing you money—in poor lambing rates, early loss of valuable animals, and vet bills. You may be misdiagnosing those unthrifty lambs or those sick ewes that don't respond to antibiotics and gradually lose condition. And you may also be selling infected sheep, thus spreading the infection to other

### DESCRIPTION OF A TYPICAL OPP EWE

"Let's suppose that I have a good ewe lamb that I breed to lamb at 2 years of age. She gives me a single, lovely strong lamb. I forgive her for giving me a single since it is her first and she is a twin herself. Next year I get twins from her. Those are also nice but not quite as good as the previous one. That is assumed natural since they are twins. Mother is now 3 years old and since she raised twins she is not in as good condition going into breeding as she was the previous year. The next lambing—she is now four—she twins again and this time the twins are born a good size but fail to thrive. And mother is positively thin after raising these two. At this time, many would decide to sell the ewe, either (hopefully) to slaughter or to someone looking for cheap breeding stock. After all, the ewe is only 4-1/2 years old. If she has been sold for breeding (good buy, she is a twinner and should have a few years left), she will probably be dead 2 years later. This would be a typical OPP ewe."

STEFANIA DIGNUM  
(1945–2007), RENOWNED  
ICELANDIC BREEDER

THE SHEPHERD MAGAZINE,  
1989

*continued on page 6* ➤

### Inside this issue:

Is Ovine Progressive Pneumonia (OPP) Dragging Your Flock Down?	1
Genetic Management of Small Closed Populations	2
Mastitis is Udder Madness	5
Questions to Ask when Buying Sheep	7
Ask the BBSAI	8

# Genetic Management of Small Closed Populations

## Maintaining a Broad Genetic Base and Managing Inbreeding

Reprinted with permission from  
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Management of small populations must be tailored to consider and reduce inbreeding, and this is unfortunately a very technical subject. A few definitions are essential to help in understanding the details.

- "Inbreeding" is any mating of related animals—animals that have an ancestor (or more) in common.
- "Linebreeding" is essentially the same as inbreeding, but usually designated as only concentrating a specific ancestor, and is generally defined as the mating of animals less closely related than in the case of inbreeding.
- "Linecrossing" occurs when two animals of different linebred lines are mated. "Linecrossing" is therefore a specific type of "outbreeding" or "outcrossing," both of which describe the mating of unrelated animals.

Managing small populations of animals for genetic vigor and production is a challenge for breeders of rare breeds as well as for those with specific color goals that require closed or nearly closed populations. Maintaining isolated closed populations makes at least some level of inbreeding inevitable, yet it is well known that prolonged inbreeding brings with it the likelihood of some depression of reproduction and general vitality. This is called "inbreeding depression," and is a major drawback of mating systems involving related individuals.

The fine points behind the biology of inbreeding depression are intricate, but inbreeding depression appears to be the result of animals being homozygous at many loci.

- "Homozygosity" is a term used in genetics to describe a situation where an individual inherits the same alleles for a particular gene from both parents.
- "Heterozygous" refers to having inherited different forms of a particular gene from each parent.

As inbreeding proceeds over several generations, more and more of the genome becomes homozygous, and the result is a general decrease in vitality and especially in reproductive performance. The other side of the coin, hybrid vigor, is the result of heterozygosity at most loci in the genome. In regards to inbreeding depression, it is the relative level of homozygosity that is leading to the degree of depression, so that more homozygosity leads to worse depression. This is the reason that prolonged inbreeding is likely to be

***Circumventing the problems of inbreeding depression while maintaining relatively closed small populations is a special challenge for breeders***

more deleterious than is inbreeding that is managed over fewer generations, as it results in animals that are increasingly homozygous over more and more loci.

Playing inbreeding depression and hybrid vigor off of one another is, at the most basic level, playing homozygosity against heterozygosity. Some level of homozygosity is needed, though, for an animal to be predictable genetically – which is the whole goal of purebred animal breeding. And, likewise, predictability is the usual goal for sheep breeders

interested in certain (generally recessive) colors. Balancing the level of homozygosity needed for predictability against higher levels that lead to inbreeding depression is a balancing act.

Circumventing the problems of inbreeding depression while maintaining relatively closed small populations is a special challenge for breeders needing a closed population. They must make the goal of population vitality the top goal, and it and the philosophies that underlie it must become primary in the decision-making process that guides the breeding program. The goal of maintaining a vital, closed population is fundamentally different than the more common goals of maximizing production or conformation, and must take precedence over those other goals if success is to be achieved. To adopt too many goals for a single population is to risk attaining none of them.

The main risk to small populations is inbreeding, as it is nearly impossible to avoid mating

relatives after a decade or so of maintaining a closed population of sheep. While some examples of very inbred and productive sheep can be found, these are always identified after the success instead of before

it – and therefore these do not answer the question of what proportion of populations can withstand inbreeding depression. The successes are interesting, but tell very little about the populations that succumbed to depression by diminished reproductive or other performance. Inbreeding is documented to diminish performance and vigor, so it is always wisest to manage populations so that inbreeding does not become obligatory.

## Genetic Management

← continued from **page 2**

### Breeding Strategies

One strategy for maintaining genetic health in a closed population is to try to manage it so that a reasonably distantly related mate is available to every animal in the population. This has the practical implication of requiring more males than are needed for populations that do not need to worry about the risk of inbreeding because they are more able or willing to use outcrosses. In populations that are not closed, a quick outcross can quickly manage any depression that may arise. In closed populations (whether for genetic or biosecurity reasons), going outside the population is not an option, and so inbreeding must be strategically managed if it is not to diminish performance and vigor.

One strategy that can successfully manage inbreeding in small populations is to subdivide the flock into different genetic lines based on ancestry. The goal is to manage the flock based on the separate families within the flock. The different family lines within the flock can be managed to always provide for a reasonably unrelated outcross to every individual animal in the population. The key with this strategy is to manage inbreeding/linebreeding rather than avoiding it altogether because avoiding it altogether in small populations is eventually impossible. Inbreeding can be managed at acceptable levels, and can be kept at levels low enough to avoid much concern for depression. One useful way to accomplish this on a population basis is to use linebred males on a variety of females to generate both linebred and linecross replacements.

The details will be illustrated below, but the overall strategy is to ensure that some moderate level of linebreeding is occurring

within the flock, but linebreeding to different lines rather than to only one line. This ensures that outcrosses are available, as the different lines remain genetically distinct from one another. Rather than a complete avoidance of inbreeding, this strategy manages the inbreeding so that it becomes optional rather than obligatory.

The strategy, for sheep, can develop along different methods because the overall flock can either be divided by time or by space. Most usual is to divide the flock by space into different breeding groups each year, with a different line of ram in each group. Somewhat more elegant, and with other advantages, is to divide the flock by time, and each year use a two-year-old ram so that in sequential years a different line of ram is used. By using three different lines through the ewe flock, inbreeding can be managed.

Any breeding program must be tailored to specific properties and situations, but a general approach can be outlined. The strategy outlined here does not work well with fewer than three lines in the flock, although it will always work better with a greater number of lines as these reduce the overall relatedness within the flock. Regardless of the approach taken (multiple or single rams per year), the program depends upon dividing the ewe flock by pedigree into separate bloodlines. By using three as the model, these are lines A, B, and C.

It is important to understand what happens with the various animals in the flock depending on which way they are mated. When a line A ram is used, the line A ewes produce linebred line A lambs. The line B ewes produce linecross lambs that are A from the sire and B from the dam, or AB. The line C ewes produce linecross lambs that are AC.

The key is that the line A ram has sired both linebred (A) and linecross (AB and AC) lambs. If a linebred A line ram is maintained as a replacement, then he will be reasonably unrelated to both linebred B and linebred C animals. This is the value of the linebred ram - he is unrelated to more of the ewes in the flock than would be a linecross ram. For example, a linecross AB ram is related to all ewes that have either line A or line B in them, and is only unrelated to linebred C line ewes. So, he is unrelated to fewer animals in the flock than is a linebred individual.

Ewe lambs, in contrast, can and should include both linebred and linecross individuals. The system works best if some ewes are linebred, and others are linecross. As an example, a ewe that is linebred A will produce linebred lambs to an A ram, but linecross lambs to a B or C ram. If an AC ewe is retained, then she has the advantage of being linecrossed herself, but able to contribute a linebred replacement to either an A or a C ram, as the relationship to that line increases. The value of retaining linecross ewes is that they are not inbred themselves, but can contribute back to the linebred lines with the appropriate ram. By this method the genetic material can vary from generation to generation as linebred or linecrossed, and this helps to diminish inbreeding depression.

The eventual outcome is a ewe flock that is of mixed lines. Some ewes are linebred back to A, some to B, some to C, and some are varying combinations of these different lines. It is important when saving ewe replacements to realize that they need to be evaluated not only for their type and production, but also for how they fit into the population structure. Each ewe should ideally be able to contribute back to a linebred line,

continued on **page 4** ➤



## Genetic Management

←continued from page 3

Line of Ewe	Results with A Line Ram	Results with B Line Ram	Results with C Line Ram
linebred A, with some B	linebred A with B	linecross A and B	linecross A, B, and C
linebred A, with some C	linebred A with C	linecross A, B, and C	linecross A and C
linebred A, with some B and C	linebred A with B and C	linecross A, B, and C	linecross A, B, and C
linebred B, with some A	linecross A and B	linebred B with A	linecross A, B, and C
linebred B, with some C	linecross A, B, and C	linebred B with C	linecross B and C
linebred B, with some A and C	linecross A, B, and C	linebred B with A and C	linecross A, B, and C
linebred C, with some A	linecross A, B, and C	linecross B with A and C	linebred C with A
linebred C, with some B	linecross A, with B and C	linecross B and C	linebred C with B
linebred C, with some A and B	linecross A, B, and C	linecross A, B, and C	linebred C with A and B
linecross A and B	linebred A with B	linebred B with A	linecross A, B and C
linecross A and C	linebred A with C	linecross A, B, and C	linebred C with A
linecross B and C	linecross A, B, and C	linebred B with C	linebred C with B

Figure 1. Lambs from various types of ewes

as well as to linecrossing within the flock. The rams are basically pulling the flock back into three different founding bloodlines, and the ewe flock needs to be managed to ensure that this can happen by retaining a variety of linebred and linecross options.

Over long periods of time it is unlikely that any animal is purebred back to any of the founding lines, but instead the ewe flock has the following makeup: linebred A with contributions of B, C, or both, Linebred B with contributions from the other lines, linebred C with contributions of the other lines, and also a variety of linecross animals with contributions from one or two other lines. The lambs of the various types of ewes will fall into the basic classes listed in Figure 1.

The key is to notice that each type of ewe has a different role in the flock. For example, a linebred A line ewe can contribute linebred A replacements for rams, and also for ewes. She can also contribute linecross offspring to B and C line rams,

but in this case only ewe lambs should be retained. The reason for this is that a linecross ram, if used in the flock, will generate linebred offspring back into two lines instead of just one. After a few generations of that strategy the entire flock is related to itself and no unrelated linecrosses are available. A linecross A and B ewe can contribute to linebred A and B offspring to either A or B rams, but only linecross offspring to a C ram.

Ram replacements are potentially problematic for a variety of reasons. Due to the biology of inbreeding depression and hybrid vigor, it is very likely that the linecross rams will be superior to the linebred rams. This is a problem, because if linecross rams are kept and the flock remains closed, then eventually every animal becomes closely related to every other animal and inbreeding cannot be avoided or managed. By constraining ram replacements to linebred individuals, each ram will have a greater number of ewes in the flock to which he is distantly related. That provides for the

linecrossing boost each year, but requires that the flock manager make decisions based on this strategy.

This strategy can and does work, but attention to animal identification and a willingness to turn over male generations rapidly is a key to its success. Most traditionally-minded breeders may find this less satisfying than developing a truly superior male and then using him for several years. Using a male for several years, however, ensures a rapid build-up of inbreeding within the flock, and can eventually result in its lowered performance unless an outside animal is introduced to counteract inbreeding. In order for a flock to remain closed, it is vital that the breeder pay attention to managing inbreeding as a top priority. ❖

# Mastitis is Udder Madness

By Susan Schoenian  
Wild & Woolly, Spring 2017

Mastitis is the term for a bacterial infection in the udder. It is a common problem in sheep and goats, especially those that are intensively or semi-intensively managed. Heavy milking females and those nursing multiple offspring are most commonly affected.

Two bacterial species (Staphylococci) are responsible for causing most of the cases of mastitis in sheep and goats. Soremouth can be another cause, as nursing lambs/kids transfer infection to the teats. Poor milking technique and hygiene can be the reason for mastitis in dairy females.

OPP (ovine progressive pneumonia) and CAE (caprine arthritic encephalitis) are viral diseases that can cause a similar disease condition. In the case of OPP and CAE, the udder is usually firm and shapely, but it produces little to no milk. If both halves of the udder are affected, it is often OPP or CAE. If only one half is affected, it is usually mastitis.

There are two forms of mastitis: clinical and sub-clinical. Sub-clinical may be difficult to identify. However, it causes significant economic loss, as affected females produce less milk, sometimes not enough for all their offspring to do well. Elevated somatic cell counts (SCC) affect marketability of milk.

In clinical mastitis, the infection progresses to a point that symptoms are noticeable and usually require attention. Early symptoms might include limping and a reluctance to allow lambs/kids to nurse. Eventually, affected females will become feverish and go off feed. There may be physical changes to the milk and udder.

While most producers make a diagnosis based on observation of clinical signs, mastitis, especially

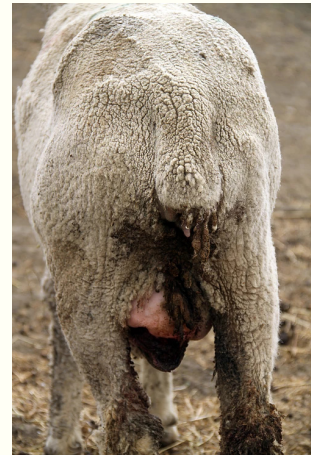
sub-clinical, can be diagnosed with a micro-biologic culture of the milk. A milk culture can also identify the causative organism and appropriate course of treatment.

Providing good nutrition and a clean environment, especially during birthing and lactation, are the keys to preventing mastitis. Rations should be balanced to ensure that the nutrient requirements of females are being met, but not exceeded. Both underfeeding and overfeeding have been implicated as causes of mastitis. Proper management at weaning (drying off) is also important. Good udder conformation will help to reduce the incidence of mastitis. Females with pendulous, low hanging udders should be culled.

Mastitis is usually treated with antibiotics and anti-inflammatory drugs. The sooner treatment is initiated, the more likely it will be successful. No treatment protocols are FDA-approved for treating mastitis in sheep and goats; therefore, producers need to work with their veterinarians on developing and implementing treatment plans.

While a ewe or doe is being treated for mastitis, it is often necessary to bottle or tube-feed her offspring. In some cases, the lambs/kids will have to be removed for artificial rearing. Females which suffer permanent damage to their udders should not be kept for breeding.

Females that only produce milk on one side of their udder should not be retained. Females with lumpy udders should be culled. Mastitis is often a confounding problem that worsens each year. When culling a female that you have treated for mastitis, be sure the drugs have cleared her system before taking her to market or slaughtering her for meat. 🌿



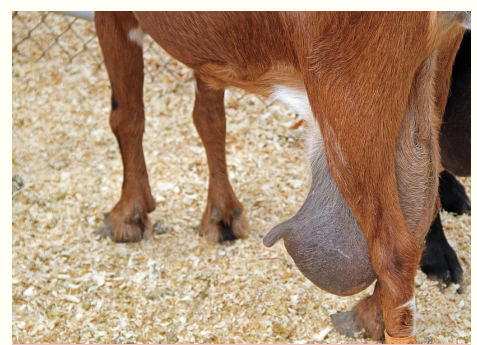
Flickr—spoiled udder



Udder problem



Infected udder



Low-hanging udder



◀ continued from page 1

flocks. Those are all good reasons to learn more about the disease.

## Transmission

A flock becomes infected when you buy infected sheep. The disease is spread primarily when an infected ewe sneezes or when droplets from her runny nose contact other uninfected sheep or contaminate feed and water sources. There is no known danger to humans from this disease.

## Diagnosis

Because sheep carrying the OPP virus often appear healthy, the only way to know if they're infected with OPP is to have them tested. There are two tests used to diagnose OPP, and they both detect antibodies to the OPP virus:

- Agar Gel Immunodiffusion Test (AGID)
- Elitest Elisa Test (more sensitive than the AGID)

Both tests require drawing blood from the sheep's jugular vein, and require a veterinarian to prepare the blood serum and handle shipping it to a qualified lab.

## Eradication

Years ago, recommendations were made to destroy all OPP-positive animals in a flock. The most recent research is more promising for preserving genetic diversity of blackbelly sheep. An eradication trial in Minnesota demonstrated that the best way eradicate OPP is to permanently separate weaned, 8-week-old lambs from adults and to separate positive test animals from negative test animals. Minnesota suggests that the adult animals, both positive and negative, can continue to be bred as the 'Parent flock.' Early weaning at 8 weeks is recommended.

## Here is a basic eradication plan:

1. Test your adult sheep to see if you have OPP. If they all test negative (congratulations!), retest in 4–6 months assuming you have not brought any new sheep into your flock. Retest once a year to reassure yourself that you are maintaining a negative flock.
2. Only bring in sheep from a test-negative flock (currently there are none) OR keep newly purchased animals in quarantine at least 10 ft

**A 2001 study found that 36% of US sheep flocks are infected with the OPP virus.**

from your flock. Test new sheep upon arrival and repeat test in 4 months. If both tests are negative and the animal was over a year of age at the time of the first test, then it is okay to add the animal to your negative flock.

3. If you have any positive sheep, begin the eradication program. You can keep the positive adults in with the negatives if you do not have enough space to separate them. You can continue to breed your adult flock as before.

4. Early wean all lambs by 8 weeks and keep them permanently separated from all adults.

5. Begin testing lambs 3–4 months post lambing, and separate test-negative animals. Note that testing an animal before it is 12 months old may yield unreliable results, but it is important to catch positives as early as possible to limit transmission. Animals over 1 year of age who have been permanently separated from any positive animal and have had two consecutive negative tests at 4–6 month intervals can be considered negative. Test this group once a year to confirm negative status.

6. If you have room to also separate your adults into positive

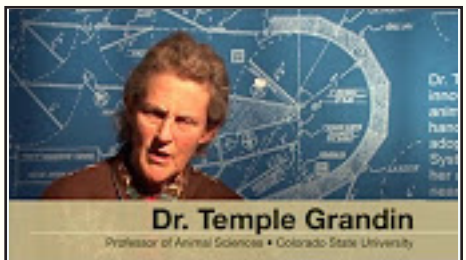
and negative groups, you can repeated test the negatives, remove any who become positive, and eventually add the repeatedly negative adults to the negative replacement flock made from your early weaned lambs.

7. Do your daily chores in the following manner to avoid transmitting the virus from the positives to the negatives: all negatives first, then unknowns, then known positives.

If you are just getting started with blackbelly sheep and have only a few animals, it would be a really good

idea to test your sheep now and eradicate OPP if any test positive. It is also important to test any sheep you have purchased to ensure that they are OPP negative. This way, you will be able to increase your flock size in subsequent years knowing that it is OPP negative.

To keep up to date on the most recent information about OPP, check the OPP Concerned Sheep Breeders Society at <http://oppsociety.org/Newsletter.html>. Be sure to check the site regularly for updates. New research results continue to be published, and some Web pages display older, now-incorrect information about testing and eradication. 📄



**Dr. Temple Grandin**  
Professor of Animal Sciences • Colorado State University

**Sheep Handling Video Series  
Developed by Dr. Temple  
Grandin**

[https://www.youtube.com/watch?v=o7LByfB\\_LYo&list=PLvmdHSmZBuFs4-NfIjGWVVwgS\\_zBaKOJj](https://www.youtube.com/watch?v=o7LByfB_LYo&list=PLvmdHSmZBuFs4-NfIjGWVVwgS_zBaKOJj)

## Questions to Ask when Buying Sheep

By Carol Elkins

Thinking about buying blackbelly sheep? Here are some questions you should ask the seller.

1. Is the sheep American Blackbelly (horned ram) or Barbados Blackbelly (polled ram)? If the seller tells you that it is a Barbados Blackbelly, ask to see the sheep's parents, or photos of them. The majority of people selling horned rams call the sheep Barbados Blackbelly and don't understand that American Blackbelly are a separate breed. If they don't know the correct name of their sheep, those people will likely not maintain good breeding records. Therefore, you don't really know what you are buying.

2. Does the sheep meet the breed standards for its breed? Standards aren't important just for registered animals. Standards will help you verify that the sheep you are buying has the visually identifiable qualities that are important for the breed. Make sure that there are

no white markings on the sheep and that it has a black belly and strongly defined facial bars on its muzzle. There are a lot of non-visual qualities, such as prolificacy and parasite tolerance that you also need to know about. These qualities can be researched using the sheep's health record (see next).

3. Can the breeder provide breeding records and health records for the sheep? Good breeders, even those with just a few sheep, keep records of which ram they bred to their ewes and the dates that the ram was exposed to the ewes. They keep records on each lamb that is born, noting (minimally) its farm number, birth date, and parents' names. They record sheep deaths and keep notes about when they dewormed the sheep and if it had any health problems.

4. Does the sheep have a scrapie tag? Scrapie tags are required by the USDA if the sheep is to be transported off of your property.

Some breeders assign a scrapie tag to lambs but don't apply the tag until the lamb is older and its ears are bigger. If you plan to transport your sheep to a different State, then make sure that the seller provides the scrapie tag.

5. If the sheep doesn't have a scrapie tag, is there some other ear tag applied or means of identifying it (such as a tag on a necklace)? Good breeders assign each lamb a unique farm number when they are born. This number is the animal's permanent ID. If the tag gets lost, the breeder should have a method in his recordkeeping to link the old number to the new tag number that he

uses when replacing the lost tag.

6. It is always a good idea to get a health certificate for the sheep; it is required if the sheep will be transported across State lines. Breeders usually will ask that buyers pay for the health certificate up front. Because they have to catch the sheep and arrange for the vet to do the exam, and because all of this must be done before the sale transpires, they want to make sure that they are not out of pocket for tests that your State requires, especially if you change your mind and back out of the sale.

7. If you are purchasing a sheep long distance and can't actually see the sheep until it is delivered, ask to see lots of photos of the sheep. Ask to see the registration certificate of the sheep and of the sheep's parents. You can also view this information at BBSAI's online database as [https://www.blackbellysheep.org/db/animals\\_p.php](https://www.blackbellysheep.org/db/animals_p.php)

Ask to see closeups of the sheep's horn plate and hooves. If the sheep is older than 2 years, ask to see photos that were taken in late summer to verify that the sheep has fully shed out. Sheep that haven't completely shed by late summer may be crossbred.

The more you know about your sheep and its breeder before you buy it, the more likely you will be happy with your purchase. Ask questions—lots of them—and run the other way if you don't get the quality of answers that a good breeder will provide. ✨



### New BBSAI Members

Kaci and Glenn Beckett	Grant, FL
Raynor Chamberlain	Odessa, FL
Mark Velie and Adam Cothren	Hortense, GA
Wesley Cox	St. Simons Island, GA
James Dillon	Oakdale, LA
Guzman Family	Visalia, CA
Ryan Harrison	Boerne, TX
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Nancy Kautz	Harpers Ferry, WV
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Cynthia Martinez	Waelder, TX
Shellie O'Brien	Prince George, BC
Robert Price-Sedillo	Veguita, NM
Ronald Roberts	New Boston, TX
Bruce Ruscio	Waterford, VA
Tamara Severson	Moravia, NY
Hailey Shelpuk	Mckinney, TX
Clinton Starkie	Haymarket, VA
Shawn Thomas	Telephone, TX
Jason Thinnes	Cottonwood, CA
Bryson Wright	Prescott Valley, AZ

*The Barbados Blackbelly Sheep Association International is a non-profit organization registered in the State of Missouri*



**Raising sheep the EASY way!**

The BBSAI Newsletter is a benefit of membership in the BBSAI and is published quarterly. The BBSAI Newsletter welcomes articles, photographs, and business cards that relate to American Blackbelly and Barbados Blackbelly sheep. Publication of articles or advertisements does not necessarily constitute an endorsement by BBSAI. No part of the BBSAI Newsletter (including photographs) can be reprinted, put on Web sites, or used in any manner without written permission of the BBSAI.

Please email changes of address to [newsletter@blackbellysheep.org](mailto:newsletter@blackbellysheep.org)

Back issues can be downloaded from

<http://www.blackbellysheep.org/association/newsletters/>

Newsletter Editor: Carol Elkins

## Ask the BBSAI

Send questions to  
[info@blackbellysheep.org](mailto:info@blackbellysheep.org)

**Q:** How can I find out if anyone is selling American Blackbelly ewes? Also, do you know how many American Blackbelly there are in the US?

**A:** We have no way of knowing how many American Blackbelly are in the U.S. There are likely tens of thousands of unregistered barbado/Corsican sheep, especially in Texas. The best we can do is estimate the number of living REGISTERED American Blackbelly sheep. That number was provided during BBSAI's 2016 Annual Meeting. The registrar reported an estimated 1,206 living (less than 10 years old) American Blackbelly sheep.

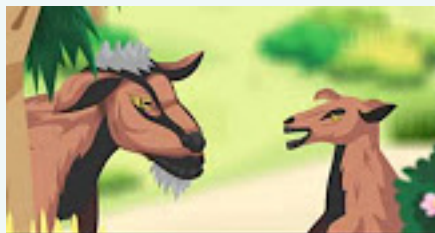
To stay abreast of sheep being sold, you could watch the BBSAI's Classifieds page at <http://www.blackbellysheep.org/classifieds/>. There is a place on the left side of the ads where you can enter your email to receive notification when the page changes. That way you'll know when new ads are added (and you'll also receive notification when they are removed after expiring).

**Q:** I just had a totally black lamb born to a fully pedigreed ewe and ram. Have you ever seen the likes of this?



**A:** Color genetics in blackbelly sheep are not well understood. It is likely that a recessive black gene in the dam teamed up with a recessive black gene in the ram, resulting in your black lamb.

As the lamb matures, her color may lighten up a bit. If you can see a clear differentiation between the black bars on her face, ears, belly, and legs and the rest of her black hair, then you could probably register her. I have no idea if this color would be genetically fixed or not. But one thing you probably need to make note of is not to breed this ewe to the ram that you used again in case it might repeat.



Sylvester, a young Barbados Blackbelly sheep, is getting a lesson from his grandfather about the importance of being proud of what makes you different from other sheep.

This very cool 7-minute cartoon contains a nice history lesson on the origins of Barbados Blackbelly sheep and is suitable for all ages, including adults. It is produced by MRD Barbados (<http://mrd.gov.bb>), a division of the Barbados Ministry of Education, Science, Technology, and Innovation, whose mission is to provide educational media resources to teachers and students throughout the Caribbean.