



THE LINCOLN LETTER

THE NEWSLETTER OF THE NATIONAL LINCOLN SHEEP BREEDERS ASSOC.

SPRING

2011

PRESIDENT'S REPORT

by Brian Larson, President NLSBA

NLSBA in Springfield, Illinois State Fair Grounds

I encourage all of you to come to Springfield and participate in our biennial meeting. Only with good participation and ideas can we have a really healthy and viable organization!

- **June 17th** - NLSBA Sale Show - early afternoon after the National Shropshire Sale Show
- **June 17th** - Biennial Membership Meeting - 6:00PM at the Ramada Springfield North (Lakeview Room), 3281 Northfield Dr., Springfield IL (217) 523-4000. Pizza and soft beverages, presentation by National Sheep Improvement Program (NSIP, tentative), NLSBA business meeting including officer/director elections
- **June 18th** - NLSBA Sale after the National Shropshire Sale

2011 All American Junior Lincoln Show - June 30th to July 3rd, 2011, Harrington, Delaware State Fair Grounds. Anyone interested in being a class award donor, please contact Debbie Vanderwende.

2011 New England Youth Lincoln Show - July 7-10, 2011 in West Springfield, MA.

2011 Eastern States Exposition (Big E) host of the 2011 National Regional Lincoln Show - September 16 to October 2. West Springfield, MA. Anyone interested in being an award donor, please contact Debbie Vanderwende, Robin Meek or Brian Larson. Plan now to attend!

2011 NAILE - National Lincoln Shows - Wednesday, November 16th at 8:00AM. Tom Booth, Lincoln Longwool breeder from the United Kingdom, will judge the open Lincoln shows. Make plans to be there, bring your best Lincolns, meet one of our colleagues from the UK!

The Roger Watkins Memorial Youth Fund has been established by donations from NLSBA members and friends. Roger Watkins served as Secretary/Treasurer for 10 years. He was an avid promoter of the Lincoln, especially with youth. The fund is available for junior members to apply for shearing school scholarships and memorial T-shirts for junior shows. The Memorial Youth Fund will provide:

Three \$100 Shearing School Scholarships for junior members and young senior members (up to 23 years of age) of the NLSBA each year. The award will be sent directly to the school to which the applicant enters. If the amount of the award exceeds the tuition, the balance will be applied to equipment used in shearing. Send your request to any officer or director of the NLSBA for scholarship consideration.

T-shirts for Junior Members Showing Lincolns will be provided with funds from the Memorial Youth Fund. These shirts will have the Lincoln logo designed by Carol Watkins on the front and "Roger Watkins Memorial" printed on the back. Regional NLSBA directors can request these shirts for youth in their area showing Lincolns. The shirts will be provided for

Continued on page 2

2010 YOUTH CONSERVATION PROGRAM REPORT

by Brietta Latham of Frederick, Maryland

Meeting Tomasina: At the 2010 Maryland Sheep & Wool Festival I received the Lincoln Longwool yearling ewe from Brian Larson and Jennifer Garrett as part of the Youth Conservation Program. The ewe's name was Tomasina. She at the time had 10 inch locks of wool that I wanted to use to make wool items. Tomasina's wool was recently made into roving and is ready for spinning. Brietta plans to knit with the yarn made from Tomasina's wool

Welcome to Our Farm: After the Sheep & Wool festival, Tomasina came to her new home. We welcomed her to the farm and got her settled into the new surroundings. She was introduced to my Border Leicester ewes and fit right in to the routine. Later on, I started to take Tomasina on walks. This went along with feeding and watering her daily. I prepared her for the shows later to come in the summer.



Maryland State Fair: At the Maryland State Fair, I did the Shepherd's Lead Contest with Tomasina. I love to sew with wool and participate in the program to make something out of wool. I wore a green vest and green & tan checked skirt that I made for the Maryland Make It With Wool competition. Tomasina led very well and we won 1st prize! During the regular breed show, Tomasina placed second to another Lincoln. She did very well in all of her shows.



The Great Frederick Fair: At the Frederick Fair, Tomasina first did the 4-H breed show. She received Grand Champion Natural Colored Ewe. Then we did the Shepherd's Lead Contest, this time we got second. She didn't do as well as the other shows, but she did very well.



Building a flock: Brian Larson provided a nice Lincoln ram and Tomasina has recently given birth to a healthy white ram lamb. Mother and son are doing very well.

Brietta is 11 years old and is a 6th grader at Thurmont Middle School in Frederick County Maryland. In addition to her sheep 4-H projects, she also carries sewing, cooking, music and sports projects.

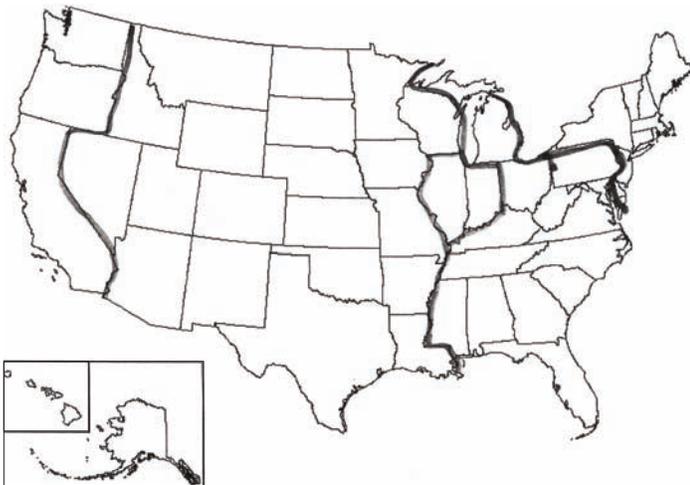
Visit the Lincoln Association Website for Updates and Information

www.lincolnsheep.org

PRESIDENT'S REPORT... *Continued from page 1*

the North East Junior Show and the NAILE Junior Lincoln Show. The Juniors are to wear the shirts while showing their sheep.

New NLSBA Director Regions: The NLSBA Board of Directors recently decided to have all five directors represent a specific region, rather than having one 'at-large' director and four regions. The following map should help visualize the new regions, based upon membership. The regions are 1) West Coast; 2) Mid-West, 3) Illinois/Indiana; 4) Mid-East; and 5) Northeast.





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IN MEMORY OF LINCOLN BREEDER CLETUS "CLETE" ZENK



Cletus "Clete" Zenk, 80, of Jasper passed away February 26, 2011 at Bixby Hospital, with his loving family at his side. Clete was born at home January 1, 1931 to the late Ralph and Carrie (O'Neill) Zenk in Metamora, Ohio during the Depression Years. He attended Metamora School graduating in 1949. He married his high school sweetheart, Margaret "Peg" Baker on October 7, 1950; celebrating their 60th wedding anniversary this past October. Peg survives. Clete attended St. Mary's Catholic School in

Assumption, Ohio where he was taught by the Dominican Nuns, with whom he had a close relationship. He also was an altar server. As a young teen, Cletus had the privilege of chauffeuring the nuns to the Adrian Dominican House from Assumption. Cletus was a life long farmer who enjoyed giving the Lord a good day's work. For over 35 years, he enjoyed showing Lincoln sheep at local, state and national fairs with his fellow shepherd Harvey Warrick. He was a dedicated husband, father, grandfather and great grandfather, who took great pride in mentoring his grandchildren. He will be greatly missed by all who knew him. He was a former member of Our Lady of Fatima Church of Lyons, Ohio, presently a member of St. Mary's Catholic Church, Adrian, where he is a member of the Knights of Columbus; and the National Lincoln Association. In addition to his wife, Clete is survived by his sister, Marylin (Lowell) Yoder of Maumee, Ohio, his children, Jennifer (Jack) Griffith, Gerard (Bonnie) Zenk all of Sand Creek, Michael (Linda) Zenk of Waxhaw, N.C., Andrew (Betty) Zenk of Jasper and Julia (Frank) Willett of Adrian; 15 grandchildren and 13 great grandchildren. Mass of the Resurrection for Cletus was held at St. Mary's Catholic Church with Father Bob Schramm presiding.

If you wish to donate in his memory to the NLSBA Memorial Youth Fund, please send the donation to me and I'll forward the list of donors to the Zenk family.

Brian Larson
8291 South Cedar Creek Road
Dowling, Michigan 49050

If you wish to contact the Zenk Family,
the following is his wife, Peg's, address:
12594 Arnold Hwy
Jasper, MI 49248

**Make Plans to Attend the
National Lincoln Sheep Breeders Association
National Show & Sale with Biennial Meeting
State Fair Grounds in Springfield, Illinois**

Don't miss out... Make it a Family Affair!

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SLICE, SCOOP & HANDFULL

by Brian Larson

Where Does the Lincoln Fit in Commercial Sheep Production?

The Michigan Shepherd's weekend this past January had several excellent speakers who gave their perceptions of where different breed types fit in various commercial sheep production schemes in use today. My take on the presentations was that one needs to use breeds that are genetically suited for your type of production system. Not a remarkable observation, but includes a lot of common sense – however, I'm not sure everyone really understands the strengths of their own breed. I'll admit that I'm “preaching to the choir” on this subject – we all breed Lincoln Longwool sheep for one purpose or another, but many of us are married to early lambing to get optimum lambs for the summer and fall shows.

The Lincoln Longwool breed was developed to perform best in commercial settings when lambing on pasture just as the grass comes on – a low input system! Why? Because the strong mothering instincts of Lincolns mean a fast start for new lambs and with some of the richest milk among the breeds. We know that the Lincoln has an excellent carcass – but is designed for grass and not often given credit when grown on grain due to fat deposition patterns! However, the Lincoln lambs grow leaner on grass than when on high grain diets, especially if they are of “high body capacity” Lincoln genetics that do so well on grass.

How do these characteristics fit in our commercial industry? The speakers at Shepherd's weekend lined out the types of dam and sire breeds suited for both “high intensity” and “low-input” systems. It was rather clear that Lincolns do not compete in “high intensity systems” to their best advantage. However, the “low-input” systems really favor breeds like the Lincoln, especially as a sire breed in a system that is raising replacements. There were several scenarios put forward where “2-breed cross mother” breed composites are the current favored dams in low-input commercial systems in non-rangeland settings (such as Polypay, or Romanov and Finn crosses). The speakers suggested that using a proportion of “good carcass mother breed rams” (such as Lincoln Longwools) to generate 3-breed composites for replacements is a highly workable system. The ewe lambs by terminal sire-breed rams in such a system do not offer good options as replacements.

Quite a few years ago, I had purchased a flock of half Dorset-half Finn ewes. These were the “old time, real” Dorset genetics and the early-imported Finn genetics. The ewes were bred to a great high volume Lincoln ram from Don Kessie (Oregon). The lambs were great, the ewes did their best, but there were too many 3+lamb multiple births (up to 5 lambs per litter) – too many lambs needed help. Because the lambs grew so well on pasture, I decided to keep the best ewe lambs as replacements and continued that program until the half-Dorset/Finn ewes could be replaced and shipped to market. The half-Lincoln, quarter Dorset and Finn ewes were a bunch larger than their mothers and were the best commercial ewes that I have ever had. They lambed on pasture effortlessly, mothered great, milked very well, sheared a weighty, marketable fleece and their lambs from terminal sires were striking!

That personal experience from years ago helped reinforce the message given at Shepherd's weekend in January and helps me focus on where we as Lincoln Longwool breeders can gain an entry to and a foothold in the commercial production systems. The next step is to get the message out that Lincoln Longwool sheep have a lot to offer the “low-input” commercial producers. Perhaps one viable option to reach this audience is for state Lincoln breeders to place ads in state sheep association newsletters that emphasize the above-mentioned benefits. I would welcome other suggestions and experiences to share in upcoming newsletter! Have a great summer!

Are Sheep Dumb?

A few years ago, I was visiting with John Lee at Highgate, Ontario, Canada. We spent a day driving through the countryside and talking about history of the area and Lincoln sheep – topics that suited both of us. John commented that he has often been asked if sheep are dumb! John said that his reply has always been thus: “Sheep assume the intelligence of their shepherd!” and he then commented that he had gotten some mighty funny looks and comments as a result. John elaborated that when the shepherd offers the opportunity to the sheep to make good choices, the sheep will thrive; while sheep given no good choices suffer the consequences of a poor shepherd.

It came as no great surprise when researchers studying animal models of Huntington's Disease at the University of Cambridge in the UK found that sheep are quite capable of making smart choices in a setting known as 'cognitive testing'. In scientific terms, the researchers tested the ability of sheep to perform tests of executive function: 1) 'discrimination learning' where the sheep learn one set of behavior rules, 2) then 'reversal learning' where sheep need to unlearn the previous rules and learn new rules of behavior and 3) 'attentional set-shifting', where their ability to pay attention to new signals is measured. Significantly, they found that not only could sheep perform discrimination learning and reversals, but they could also perform the intra-dimensional and extra-dimensional set-shifting tasks that are sensitive tests of cognitive dysfunction in humans.

The researchers summed up the research by saying that, “sheep can perform ‘executive’ cognitive tasks that are an important part of the primate behavioral repertoire, but which have never been shown previously to exist in any other large animal. Sheep have great potential, not only for use as a large animal model of Huntington's Disease, but also for studying cognitive function and the evolution of complex behaviors in normal animals.” So its no surprise to me as I've been outsmarted by sheep more often than I'd wish to admit. However, I'm glad that John Lee's statement about sheep intelligence has been proven and published in scientific literature!

The publication citation, should you decide to look it up, is as follows: Morton AJ, Avanzo L (2011) Executive Decision-Making in the Domestic Sheep. PLoS ONE 6(1): e15752. doi:10.1371/journal.pone.0015752

THE LINCOLN YOUTH CONNECTION - LEARN MORE!

for the youth to learn and enjoy...

What are the Basic Nutrients and Their Use?

Nutrients are elements in feed that are used by the animal for growth and production. Not all are needed in the same amounts. We divide the nutrients into five categories: water, protein, carbohydrates, minerals, and vitamins. Water is the most important. Two thirds of the body is made of water. Water helps the body digest food and carries nutrients to body tissues. It also serves the sheep to help get rid of body waste and helps regulate their temperature. It is essential in feed consumption. Proteins are the second nutrient group and are the building blocks of the body. They are made of amino acids that are used to build muscle, blood, internal organs and skin. Proteins can also be used as energy. When feed sometimes contains too much protein the extra protein can be used as energy. Carbohydrates and fats are used to supply the animal's energy. In sheep the main use of energy is the conversion of feed to meat. Corn and oats commonly provide carbohydrates in a sheep's diet.

Minerals are needed in small amounts and are used to build bones and teeth and also used in many necessary life processes. Calcium is essential for bone growth and maintenance of the body processes. Calcium can be supplemented by adding limestone to the diet. Salt is a regulator in the body and should be fed free choice. Phosphorus is needed in bone growth. Typically adding dicalcium phosphate provides phosphorus. There are minor minerals such as copper and selenium that are very important minerals to supply in the proper amounts to sheep. Vitamins are usually needed in small amounts. All the vitamins except vitamins A, D, and E are produced by the rumen of the animal. Many of our vitamins are important in maintaining healthy body cells and the reproduction process.

Care for Newly Purchased Sheep...

Many of us purchase our sheep at shows and sales or from individuals. Whatever the case may be, sheep being hauled, introduced to a new environment, and changing their daily habits and surroundings may cause stress and trigger some type of sickness. With proper attention you can avoid any of this. In some situations things may happen you cannot avoid but good management practices will help you eliminate disasters. First of all, select healthy animals. If it appears sick when you go to purchase it and you are offered it at a bargain, you may want to rethink your purchase. Buy your animals from a breeder who has a reputation of selling healthy breeding stock. At shows and sales, animals should have a health certificate. You should receive that certificate when you pay for your purchase. That health certificate is not complete proof the animal is not sick. Health certificates can be written up to 30 days before a show or sale. In 30 days a great deal of change can happen in that animal's health. Just the stress of hauling the animal to and from the sale can cause some signs of sickness to develop. Most breeders will not sell a sick animal but be aware if you think the animal may have developed an illness. When purchasing from a farm, many times these animals have not been inspected, you must use your knowledge to understand the signs of sickness. Sheep that are sick may exhibit some of these common signs of sickness: 1) Runny nose or some type of discharge from the nose. 2) Diarrhea. 3) Lethargic – droopy ears, off to themselves and not seem very active. 4) Overly thin or in poor condition. 5) Coughing or even labored breathing. 6) Animals that may not eat when food is presented to them. Remember not all signs may be present at the same time.

After your purchase is made, here are some common tips for helping make your purchase a positive experience. 1) Haul animals in a safe mode of transportation that is free of draft. 2) Check your state or area for health certificate requirements. Don't get caught without the right paperwork. 3) When you arrive at your home or destination, never mix animals with your existing flock or animals for 30 days. 4) On arrival, treat for parasites and trim feet if necessary. Always ask when they were last wormed and with what type of wormer. 5) Always vaccinate with vaccines that you feel are necessary for your flock. When you purchase the animal gather information of the vaccines it has already had. When in doubt consult your veterinarian and follow their recommendations. 6) When you arrive at your home or destination, allow the animals to eat first. I usually provide new arrivals with good quality hay first then offer them their grain mixture after they have consumed some hay. I feed half the feed I would normally feed them the first couple of feedings. Make sure you watch their eating habits the first few days and work at getting them on a good schedule. Never overfeed them the first couple of days. If they cannot clean it up in 15 minutes I would back their feed off until they can clean it up in 15 minutes. 7) After they have eaten, I offer them good clean water. 8) Never overwork your animals when they first arrive. Wait until they settle in to work at breaking them to halter or working with them on handling and showing. This will reduce the stress they have just been through.

Good feeding practices and care of the animal when it first arrives goes a long way in preventing problems and having a successful start at a new home for your sheep. Remember to always watch your new purchase and spot problems early. Look for the common signs of sickness to get ahead of the game. If in doubt, consult a veterinarian. Good luck on your next purchase and make it a Lincoln!

Knowing More About Sheep!

1) How many different breeds of sheep are there in the world?

Answer: _____

2) Which 2 states are the highest sheep producing states in the U.S.?

Answer: _____

3) What is the average temperature of a sheep in degrees Fahrenheit?

Answer: _____

4) What is a flock?

Answer: _____

5) What is another term that refers to sheep?

Answer: _____

6) What is a written statement giving the record of an animal's ancestry?

Answer: _____

7) What is Dystocia?

Answer: _____

Correct Answers:
1) Approximately 914 breeds; 2) Texas and California; 3) 102.3 degrees;
4) Small group of sheep; 5) Urine; 6) Pedigree; 7) Difficult birth

RECESSIVE COLOR IN LONGWOOL SHEEP

by Christiane Payton

Lincoln sheep come in white as well as natural colors. Many of us may have natural colored Lincolns in an array of shades and patterns from darkest black to lightest silver. But is what you have in your flock the result of random outcome or can one predict the color/pattern of lambs based on the color and pattern of the parents? This article will attempt to provide some basic information about recessive color in Lincolns which pertains to all breeds of long woolled sheep and will help the breeder understand that both color and pattern can be predictable.

Background on genetics. Traditionally, color in longwool sheep has been recessive to white. Wool color is governed by the interaction of two genes, just as eye color is determined in humans. So if a person has one gene for brown eyes and one for blue eyes, then the eyes are brown. And if a Lincoln sheep has one gene for white and one for color, it is white in appearance (the phenotype) but it also carries the gene for color.

For centuries, the selection pressure on improved breeds of sheep has been for white wool, as this was commercially in demand. Over the last few decades, presumably in conjunction with the increase in popularity of hand spinning, a niche market has developed for natural colored wool. Colored lambs coming out of white flocks were bred to other colored lambs, rather than being sent to slaughter. And so we've had the development of natural colored sheep, among them Lincolns. At first glance, the colors and patterns we find in our Lincolns may appear random. But they are not – it turns out that there are a number of different colors and patterns associated with specific pairings of genes. And once the working of this system is understood, the breeder can use the information to intentionally produce sheep with certain colors or markings.

The Color Spectrum: Let's start with white. White, as a color, is at the top of the color hierarchy. If the sheep has two white genes, it is homozygous for white, while if it has one gene for white and one for another color, it is heterozygous. Homozygous means two of the same, and heterozygous means two that are different from one another. At the other end of the color spectrum, is the most recessive of the colors/patterns, which is called self. A homozygous self animal (one that has 2 self genes) is a solid color, with no pattern and no white tear drops at the corners of the eyes (see photos of Lamb A.) Most self animals will fade to gray or even light silver by the age of 2 as the result of fading modifiers. However there are some animals that do not carry these modifiers, and they stay a jet black throughout their entire lives.

Color Patterns: In between white and self, there are a number of patterns found in longwool sheep; these include, in the descending order of the hierarchy, light blue, blue and English blue. Note that patterns are always symmetrical – this means that the sheep has the same pattern on either side of its body. Spots are not symmetrical and can complicate pattern recognition. Spots are not determined by the same gene sets as patterns – spots can appear on any of the colors, including white and self. When one looks at a natural colored Lincoln, most often it is heterozygous for 2 color patterns – this means that it might have the code of English blue and self or English blue and blue for example. When 2 color patterns other than white are combined on the same sheep, both patterns are modified to some degree, with the lighter color being more dominant and therefore appearing to a greater extent than the more recessive pattern.



Lamb A:
Self/Self

An example of mixed patterns is shown below. Lamb B has one gene for English blue and one for self. The English blue is the lighter pattern/color and therefore, she shows the typical silver saddle of this pattern as well as white tear drops in the corners of her eyes. However the self gene modifies her English blue and makes it darker. This is why some natural colored Lincolns with the characteristic dark shoulders and silver saddle are much darker than others – some carry self while others may be homozygous for English blue.



Lamb B:
English
Blue/Self

In Lamb C, below, we see another color pattern – this time it is blue. Note the lighter color of the lamb, the lack of dark shoulders as well as the white ring on the nose and the white mustache. This lamb expresses his blue gene as it is higher up in the color hierarchy, but he carries English blue as well. The trick to understanding color expression, is that the lighter the color, the more it will dominate what you see in terms of color expression.



Lamb C:
Blue/
English blue

There are other color patterns in addition to those I have listed, however I do not know if they exist within the natural colored Lincoln population. If you have access to the Banner or other publications that include photos of show sheep, you may notice that natural colored Lincolns and Cotswolds are virtually the only improved breeds of sheep that show symmetrical pattern. This is because there is another mechanism for creating color in sheep which is dominant to white. However this dominant color is not traditionally found in longwools and only expresses itself as a solid black or gray. It has found its way into numerous improved breeds, including Romneys, and can create headaches for the breeder as it makes breeding for color less predictable. I personally also feel that it generally has a negative effect on fleece character and handle.

The nice thing about knowing the gene sets for one's colored sheep, is that you can start to breed for certain colors or combinations. In my flock, we have used this information to create a line of jet black Lincolns which hardly fade. Hand spinners are very excited when they can purchase black fleece which has not been dyed. And my personal favorite is blue/self because the self darkens the blue and keeps it from fading to oatmeal. Some of these sheep are a lovely gunmetal gray all over their body with a black head and legs.

For more information on sheep color genetics, you can check out the following resources:

- Lundie, Roger S. & Wilkinson, Elspeth J. (2004) The World of Coloured Sheep. The Black and Coloured Sheep Breeders' Association of New Zealand
- Schaltz Farm Color Genetics: www.shaltzfarm.com/shcolor.html
- Deer Run Sheep Farm, article by D. Phillip Sponenberg: www.deerrunsheepfarm.com/genetics.html
- Yahoo list on sheep color genetics: <http://tech.groups.yahoo.com/group/sheep-color-genetics/>
- Maryland Small Ruminant Page: <http://www.sheepandgoat.com/genetics.html>
- Numerous on-line articles written by D. Phillip Sponenberg

A BRIEF HISTORY OF THE LINCOLN BREEDERS ASSOCIATION

A society of Lincoln breeders was started in England in 1796 and the present Lincoln Longwool Sheep Breeders' Association was founded in 1892.

In the United States, the National Lincoln Sheep Breeders' Association (NLSBA) was started in Michigan in 1891. By 1900 the membership consisted of approximately 150 members of which one-third were Canadian. Registration of colored Lincolns in the U.S. began in 1984.

The registry maintained by the American association is open for offspring of animals recorded in Lincoln breeders' registries from other countries. For example, animals that have qualified for registration and are recorded in the Canadian Livestock Records can be transferred and recorded in the American registry.

Lincoln Longwool judging guidelines, reflecting desirable characteristics of the breed, were updated in 1993. The registry and generation of registration papers were computerized in 1997 to offer a standard

three-generation pedigree (with a five generation option) and to identify the fleece color phenotype as "white" or "colored".

During odd numbered years, at a central location, the NLSBA holds a biennial meeting, white and colored sheep and wool shows, breeding sheep sale, and election of officers and directors. Officers

include president, vice president, secretary-treasurer and director regions including eastern, mid-eastern, mid-western, western and one at-large. In alternating locations through out the U.S. on even-numbered years, the association holds a membership meeting, shows and sale. Youth activities are conducted nationwide.



Visit the Lincoln Association
Website for Updates and
Information

www.lincolnsheep.org

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