



# ISBONA

**Icelandic Sheep Breeders of North America**

Newsletter - Winter 2015 Volume 19, Issue 1



## INSIDE THIS ISSUE

ISBONA Calendar	4
Letter to the Editor	6
Heavener Event	7
Processing Fleece	11
8th World Congress	16
Organic Lambing Kit	17
Lambing Kit	18
Tube Feeding	19
Lambing Checklist	20
Feeding Newborns	21
Fashion in the Slow Lane	22
AI Corner	25
2015 AGM	26
Leadersheep Study	28
A Barn's Embrace	30
7 Trace Elements	32
Iceland Conference	34

## BOARD OF DIRECTORS

- ◆ **President:**  
Sue Faunce 207-625-3075  
pondviewfarm@roadrunner.com
- ◆ **Vice-President:**  
Elaine Clark 207-793-4640  
frelsi@roadrunner.com
- ◆ **Secretary:**  
Melissa Erlund 318-390-7748  
michaelerlund@yahoo.com
- ◆ **Treasurer:**  
Cassie Petrocelli 207-740-5110  
cassie@gwi.com
- ◆ **Members at Large:**  
Margaret Flowers 315-246-1178  
mflowers@wells.edu  
  
Holly Marks 815-598-3304  
holli@holliberricelandics.com  
  
Sondra Gibson 406-777-2334  
sgibson@RavensRestIcelandics.com  
  
Fran Ogren 509-732-6253  
trumpkinland@gmail.com  
  
Terri Carlson 815-288-5886  
tcarlson@centurylink.net
- ◆ **Membership Secretary:**  
Cassie Petrocelli  
ISBONAMemSec@gmail.com

Interested in attending the board meetings as a read-only member? ISBONA members in good standing are welcome to do so. Please contact the President and ask to be added to the email list for the ISBONA Board of Directors. Thanks for your interest!



## PROGRAM COORDINATORS

- ◆ **Webmaster:**  
Marjorie Jackson 573-294-7088  
mej@eightpondfarm.com
- ◆ **Librarian:**  
Connie Millard 573-294-7088  
dutchdog@eightpondfarm.com
- ◆ **E-list Moderator:**  
Sondra Gibson 406-777-2334  
sgibson@RavensRestIcelandics.com
- ◆ **Facebook Administrator:**  
Wendy Ketchum  
wendyket@gmail.com
- ◆ **Ad Coordinator:**  
Tonya Fedders  
flatcreekwoolandpottery@gmail.com
- ◆ **Historian:**  
Vanessa Riva  
farmer@starkhollowfarm.com

## NEWSLETTER

- ◆ **Editor:**  
Margaret Flowers 315-246-1178  
mflowers@wells.edu
- ◆ **Assistant:**  
Claire Moxon  
patentgarden@gmail.com
- ◆ **Layout:**  
Terri Carlson 815-288-5886  
tcarlson@centurylink.net
- ◆ **Publisher:**  
Elaine Sinniger  
elainesinniger@gmail.com

Cover photo:

Pondview Farm is located in south western Maine. Sue & Mark Faunce raise a flock of about 35 Icelandic sheep and a fold of 13 Highland cattle.

Disclaimer: The opinions expressed in this issue of the ISBONA newsletter are those of the authors, and do not necessarily reflect the views of ISBONA, its Board of Directors, or the editor. No endorsement of these views is implied by publication. The editor welcomes submissions of alternate viewpoints.





Message from the President

# Winter Greetings!

Hello ISBONA members,

Many of us are snowed under and winter is bearing down, but if you're like me, you are already anticipating green grass and frolicking lambs. The board has been really busy in these past fall and winter months, and I'm excited to tell you what's been happening!

In December we hired a website designer to revamp and update our face of ISBONA on the internet! She is quickly making progress and it won't be long before the big reveal! There will be lots of great photos, a more colorful and an updated look that we can change seasonally or anytime we wish, as well as increased ease of navigation and organization of the information. After the site goes live, we will continue to add and tweak things to make it a really great resource for both the membership and the general public. If you would like to share your ideas about new additions to the website, feel free to contact a board member!

In our discussion of a budget for 2015, we have heard for sometime that the membership would like to see more exposure for ISBONA in advertising, so we have jumped right on that! We approved a larger advertising budget, and Kathy Boyden has stepped up to be our new advertising representative! A huge thank you to Kathy, who has previous experience in marketing and advertising, so we know she will be great for that position!

Also a huge thank you to Tonya Fedders, who has held down the fort in that ad rep spot since 2012, and kept our current ads running and up to date. Thanks Tonya!

We are also very excited to welcome Natasha Paris to the ISBONA newsletter team! She has generously volunteered to step into the publisher's position, and we are grateful!

Many, many thanks for a job well done, long after she planned to do it, to Elaine Sinniger who is our outgoing publisher. Thank you Elaine!

Another big change coming into effect for this summer renewals that I know you all will appreciate; we have decided to lower the membership fees for a web membership to be the same as a full membership, at \$30. So you can see, the board members are listening, and have been very active in trying to make changes to revitalize the organization and increase the benefit to members, at the same time we want to be attracting new members and increasing awareness of our wonderful breed of sheep. We have made some progress, but there is still a ways to go, and your help is always welcome! We will break from meeting for lambing season, and begin again later in the year. Thank you to all the board members for your time and enthusiasm; let's keep it going!

I hope all the membership is staying safe and warm this winter, spring is just around the corner!

Sincerely,

Sue Faunce  
Pondview Farm  
Limington Maine



# ISBONA CALENDAR

## WINTER

### January

- ◆ January 2 - Deadline for ads in Winter Newsletter
- ◆ January 15 - Deadline for articles being submitted for the Winter Newsletter  
Newsletter general call to membership to nominate candidates for BoD

### February

- ◆ Enjoy you sheep

### March

- ◆ Prepare for lambing

## SPRING

### April

- ◆ April 1 - Deadline for ads in Spring Newsletter
- ◆ April 15 - Deadline for articles being submitted for the Spring Newsletter

### May

- ◆ May 30 - Tentative date for spring board meeting

### June

- ◆ Enjoy your sheep

## SUMMER

### JULY

- ◆ July 1 - BoD election ballots due back to the Board Secretary
- ◆ July 1 - Deadline for ads in Sumer Newsletter
- ◆ July 15 - Deadline for articles being submitted for the Summer Newsletter

### August

- ◆ August 1 - **MEMBERSHIP RENEWAL DEADLINE**

### September

- ◆ Enjoy your sheep

## AUTUMN

### October

- ◆ October 1 - Deadline for ads in Fall Newsletter
- ◆ October 15 - Deadline for articles being submitted for the Fall Newsletter  
Newsletter call to membership to begin planning AGM  
**FINAL REMINDER FOR MEMBERSHIP RENEWAL**

### November

- ◆ November 30 - Tentative date for fall Board meeting

### December

- ◆ Yahoo! Group call to general membership to nominate candidates for BoD



## Icelandic Sheep Breeders of North America

—Membership Form—

2014-2015 ISBONA Membership Fees

(check one)

\_\_\_\_\_ **ISBONA Newsletter:** \$20 per year (\$57 for 3 yrs, \$95 for 5 yrs) Includes ISBONA Newsletter, access to all official ISBONA-sponsored activities, no voting privileges.

\_\_\_\_\_ **ISBONA Member:** \$30 per year (\$81 for 3 yrs, \$135 for 5 yrs) Includes ISBONA Newsletter, access to all official ISBONA-sponsored activities, voting privileges. One vote per membership, must be actively breeding sheep.

\_\_\_\_\_ **ISBONA Website Member:** \$55 per year (\$150 for 3 yrs, \$250 for 5 yrs) Includes ISBONA Newsletter, access to all official ISBONA-sponsored activities, ISBONA website Breeders Listing with email address and web site link, voting privileges. One vote per membership, must be actively breeding sheep.

(check one)

\_\_\_\_\_ New Membership \_\_\_\_\_ Renewal  
Name

\_\_\_\_\_ Farm Name (if applicable)

\_\_\_\_\_ Address

\_\_\_\_\_ Phone

\_\_\_\_\_ Email Address

\_\_\_\_\_ Website

\_\_\_\_\_ Flock Code (if applicable)

Membership runs from August through July of each year. Make check payable to ISBONA.

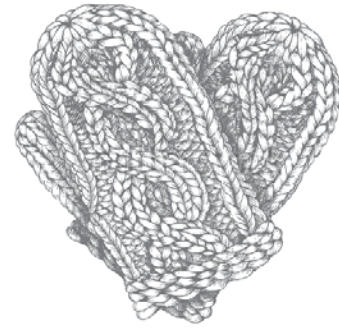
Mail to: **ISBONA**

c/o Cassie Petrocelli

253 North St.

Mechanic Falls, ME 04256

**PayPal** also accepted! See ISBONA Website.



### From the Editor:

There is little doubt that for many, many of us, this will be a winter to forget...or remember. A week ago, the Tourism Bureau in a nearby city in central NY posted on its website, "That's it. We surrender..." And then gave all kinds of information (including a link to a pertinent website) that a tourist to Key West and the Florida Keys might find useful. Perhaps you saw this – it made the news in print and on the air.

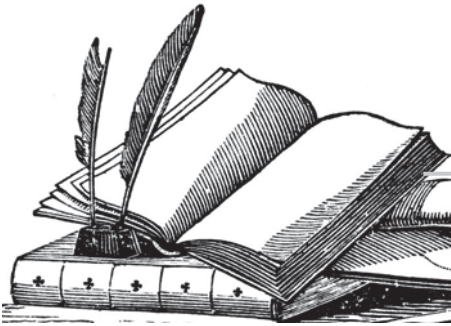
Well, for the shepherd, that is not really the answer. And much as we might like to put this nasty winter behind us, it is a good time to take some notes. What has worked with our housing and feeding strategy, and what could be improved? There's nothing better than stressful situations to test the strength of what we are doing.

The other thing to notice is how resilient the sheep are. While I bundle up with three layers of long underwear, sweater, heavy coat, etc. (you know the drill), the sheep are out happily eating the hay I have scattered on the snow...and sometimes playing frisky games to determine the pecking order. And day by day, the ewes get a little bigger...at first I could just say that it was the increasing size of the fleece, but now that alone can't account for fact that fewer of them can stand side-by-side at the feeder.

What better reminder that it will soon be spring, and that there will be happy bouncing lambs!

Margaret





# LETTER TO THE EDITOR

We are inaugurating this new column to provide a forum for discussion of topics related to Icelandic sheep. We welcome your contributions.

-Editor

## An Artificial Insemination Debate for Icelandic Sheep

I would like to bring forward a discussion with the members of ISBONA on the future practicality of continuing the practice of importing semen from Iceland through the program of artificial insemination (AI).

It seems to me that we have now reached a point in our Icelandic sheep husbandry and we have made great progress in our breeding program of our sheep. We have now come close to reaching the desired result of these many years of responsible and selective sheep breeding to now look inwardly and promote our achievement in parasite resistance.

We should start to look at our flocks of genetically superior progeny and perhaps set up our own ram stud book, a blood line ancestry with resistance to parasites that have been plaguing our sheep and that are indigenous to North America but still maintain the special traits of our unique animals.

This can only be reintroducing the lack of resistance that has been achieved by continuing our breeding program but not prevalent in our old flocks by breeding back to the original Icelandic stock. Let's take that accomplishment and move it forward and not regress and go backward.

If we continue to breed back to Icelandic rams with the same parasite vulnerabilities how do we make progress in our selective breeding program for parasite resistance in our flocks? We have made great inroads but we need to advance and not regress. Good sheep husbandry is the name of this game; breed for the attributes mentioned above. Together we must promote and improve this old and special breed of sheep.

**Olaf A. Aase**

*Bonnehagen Farm  
Stamford, Vermont*

*Olaf A. Aase and his wife, Beverly, own a fifty acre farm in southwestern Vermont where they have Icelandic sheep, two Australian Shepherds, Millie Fleur and Serama bantams and fantailed pigeons.*



## ISBONA DVD - Now Available!

### Evaluating Icelandic Sheep - Lecture and Hands-on Demonstration

The 2 hour video includes a lecture and hands on demonstration, given by Gudmundur Johannesson, of Southram breeding station in Iceland.

Some of the topics covered include:

**Sheep judging/evaluating - Measurements and scoring points**

**Ultrasound scanning - What are we looking for?**

**Ideal breeding sheep - Evaluating muscle and volume**



Order one today!

Send a check **made out to ISBONA** for \$25 (members) \$35 (non-members) to:

**Connie Millard**

1542 Weeks Rd.

Hermann MO 65041-4327

dutchdog@eightpondfarm.com



# Heavener Viking Event

by Melissa Erlund

On October 10, 2014 my family, our Norwegian Fjord horse and two of our sheep, packed up and hit the road to attend a Viking/Celtic Festival in Heavener, Oklahoma. It was a weekend long event held at the Heavener Runestone Park. The park was once a state park, but the state wanted to get rid of it because of budget concerns. Thankfully, the town of Heavener was able to purchase it about 2 years ago, preserving a really beautiful piece of land and an important artifact, the Heavener Runestone.



The area around Heavener is rocky and mountainous. The park itself sits atop Poteau Mountain (pronounced po-toe) on the edge of the Ouachita Mountains. In a small ravine, there is a massive roughly rectangular boulder standing on edge. On it are Viking runes (letters) which were carved with an iron chisel. Who carved the runes? That is a mystery! The runes spell, "GLOMESDAL" Which could mean, "Glomes Valley (dale)". Some theorize that the Vikings were able to navigate up the rivers to Oklahoma over a thousand years ago and one of them, named Glome, claimed the little valley as his own. The Arkansas River actually has a current that runs south to north, which is very unusual for a river. Another theory is that it reads "Gnomesdal" or "Gnomes Valley", a nice place for gnomes to live, and that perhaps it was carved by an immigrant of Scandinavian descent in the early 1800's. Another theory, a little on the sinister side, is that if you take each letter as depicting a word, you get something that reads, "A very bad person is buried here". There is a cave very close to the Runestone that has partially collapsed. There are stories from long ago about a body being seen in the cave... Will the mystery ever be solved? Who knows, but the park is certainly one of the most beautiful areas I have ever visited.

There is a paved and curving walkway down the steep descent to the runestone with a beautiful wooden bridge that was a waterfall flowing under it on rainy days. The runestone is covered to protect it from the elements and has a glass wall in front of it to protect it from the hands of visitors who come from all over to view this fascinating artifact. Carbon dating was attempted to determine when it was carved, but the late Mrs. Gloria Farley, who worked to preserve and let the public know about the stone, cleaned the carvings a little too thoroughly, making carbon dating impossible. Mrs. Farley was convinced that the carvings were done by Viking explorers. A website that shows some photos of the runes and info about the park is: <<http://exploresouthernhistory.com/heavener1.html>>. Other sites can be found if you do a search with "Heavener Runestone".



We have been doing the Heavener event for the past four years and bring Viking age tents, furniture and equipment and set up a small "Viking village" in one area of the park. We do combat demonstrations with rebated steel swords, spears, axes and Dane axes (really big two handed axes). Rebated steel is blunt for safety reasons. We have to go through a lot of training and be certified by a registered trainer before we can participate in combat. Our group strives to be as authentic as possible. Fabrics must be wool or linen and eyeglasses are not allowed! Horned helmets and furs (except when used as a garment liner) are not allowed (Vikings did NOT have horns on their helmets; this was and is a Hollywood thing).



We made a small wooden pen for the sheep. They stay in this which allows the public to get a close up view and pet the tamer ones. We brought a white ewe named Lotus and a six month old moorit/grey ewe lamb who is my first bottle baby. Her name is April



(born April 1) and she loved getting scratched and petted by all of the people who came. They were a great way to educate people about Icelandic sheep and relay all of their wonderful attributes. I usually bring my drop spindle and my wool and do spinning demonstrations, but I forgot my basket of spinning supplies!

Our Norwegian Fjord horse, Brynja, is also always very popular. We give "Viking pony rides" with her throughout the day. There were several people who said they came back just to see her! Norwegian Fjords



are one of the world's oldest and purest horse breeds. They are unchanged since the Ice Age! The Vikings of Norway used them for riding, plowing, sledding, carting and pulling boats up the fjords. Fjording horses have a black dorsal stripe that runs from their forelock, through their mane, down their back and through the tail. The mane is trimmed in a crescent shape, then the white hairs are cut an inch shorter than the black stripe, giving them a very distinctive appearance. There are stone carvings of these horses done by the Vikings which depict this beautiful and traditional haircut. Fjords almost always come in a shade of dun. Our Brynja (Brynja means "dark" in Old Norse) is a color called "brown dun", even though she is yellow. One of the rarer colors is "silver dun". This is a beautiful soft grey color with the same black and white mane and tail. Here is a link to a page which has all of the colors of this ancient horse: <<http://www.bluebirdlane.com/the-colours-of-the-norwegian-fjordhorse.html>>. You can see animated versions of this breed in the Disney movie, "Frozen".

They are normally pony sized (13-14 hands high), but Brynja is large, she's 15 hands high. They are extremely strong and even the pony sized ones have no trouble carrying full grown men.

Brynja did give me a scare during our trip. On Sunday morning, I woke up at dawn to feed the animals. When I reached the high-line where Brynja was supposed to be tied, she was gone! I started calling her and just then a man came leading her down the road. He said he had found her way down by the park office. I think she had decided to try to go home by herself! She had been wearing a leather halter and broke it in two places. Fortunately, I had a hemp rope halter that I had made as a spare. She just had to live up to her nick-name of "destruct-O-horse." She can be hard on fences and once smashed our poultry barn door into a pile of kindling in order to get at the poultry feed. At one of the Heavener events several years ago, she also rolled while wearing a 110 year old McClellan saddle (it closely resembles a Viking saddle) and broke some straps on it. Fortunately, I know a good saddle repair guy and he was able to match the color of the new straps perfectly with the rest of the saddle. She was a little on the hyper side after her successful escape attempt, so I saddled her up and we rode all over the park. It was fun going up and down the hills and the views were breathtaking! She was much calmer after that and ready to meet the public later in the day. Some of the photos show us standing on the edge of a very steep cliff. Lots of people take photos on this edge, even though there is a sign right next to it warning people to stay away from it!

There were other groups and vendors at the event as well. There were two blacksmiths who brought their forges and were making knives and other items out of iron. My son, Erik, had fun helping them and learning about the craft. They gave him a knife as a thank you for his help. A couple was there who brought hawks, falcons and an owl and did demonstrations and shows with the birds. We got to pet several of the nice ones and it was quite an experience! My husband, Michael, (who also goes by Olaf) brought his chainmail making supplies and was demonstrating how to do riveted chainmail.







He made both of the chainmail shirts we are wearing in the photos. He also made all of our shoes which are exact replicas of shoes that have been found in Viking graves. In some of the photos, we are wearing rubber boots because it had been raining almost all day Saturday and Friday night. I changed into correct shoes before the public arrived. There were several vendors there selling leather armor, purses, swords, knives,

gemstones, Medieval-ish clothing and other items that you might find at a Renaissance Fair. A lot of the public dressed up in Scottish kilts and Renaissance attire. There were live bands also. One group of folks had a big slice of a tree trunk set up on a plywood wall and was allowing people to try their hand at axe throwing. I tried it while mounted on Brynja. I could get axes to stick while on the ground, but not while mounted. Probably because I kept Brynja sideways to the target so that I wasn't throwing axes toward her head! This made me have to throw from the side of my body instead of from the front. They did fetch some javelins for me to try and I was able to get those to stick in the target. There was much cheering when I was successful! Brynja took it all in stride, as usual. Fjords are known for being very calm and "bomb proof." She has been around cannon fire before!

The weather was beautiful on Sunday and a lot more people came out that day. It was a fun event, except for the Saturday rain, and we hope to go back in April. And I will remember to bring my spinning supplies!

**Melissa Erlund**  
 Dark Horse Farms  
 Houghton, LA  
[www.darkhorsefarms.net](http://www.darkhorsefarms.net)

Michael and Melissa Erlund live at Dark Horse Farms in Houghton (near Shreveport), Louisiana. We have a small flock of Icelandic sheep, 7 horses (3 are boarders), 2 donkeys, heritage turkeys, assorted chickens, 3 Muscovy ducks, a Goffin's Cockatoo, 2 dogs, one cat, a small fish tank with fish and a few native crawfish (they keep the gravel really clean!) and two children.



Hello fellow ISBONA members!  
 My position as membership secretary will be up this July. It has been a wonderful experience and I would love to have another ISBONA member volunteer to take over this position. It's a fun way to meet other Icelandic sheep enthusiasts all over the world. It requires only a few hours a month of your time. Please contact me with any questions about this position.

All the best and Happy Spring!  
**Cassie Petrocelli**  
 ISBONA Membership Secretary

<b>ISBONA 2015 Budget</b>	
Website redesign:	\$550 <small>balance of payment due</small>
Website hosting:	\$50
Office/admin expenses:	\$200
Print advertising:	\$6,000
Newsletter:	\$3,500
Postage:	\$100
Show Premiums:	\$450
AGM Expenses:	\$600
Pres AGM travel:	\$700



# WINTER SHEEP

photos from our members



Sue Faunce  
Pond View Farm



Charlotte Boyden  
Kind Horn Farm



Sue Faunce  
Pond View Farm

Erin Braaten, Dancing Aspens Farm



# P

# rocessing Icelandic Fleece:

A Presentation at the Michigan Fiber Festival, 8/17/2014  
by JC Christensen

---

**Goal of the presentation:** the processing performance of Icelandic fleece in a mini-mill system and the best ways to evaluate a fleece for end products prior to sending it to a mill.

**Preface:** We have been given the amazing opportunity to shepherd, by God's design, this primitive breed of sheep called the Icelandic. They are a true triple purpose breed providing our local economies with the opportunity to purchase high quality, unique wool, dairy and meat products. The latent potential of each of these raw products represents a brand in the marketplace that can naturally create a strong demand for the Icelandic if it is managed well. However, the annual yield of any one of these raw products is typically outpaced by "specialty" breeds over the same time period. In order to create a unique brand in the marketplace for American Icelandic it will require a coordinated effort across all three outputs to bring to market unique products that highlight this breed's strengths. While farms may not be well suited to handle the additional value added steps required to take these products to market, the creation of associations, cooperatives, processing mills, and various other business ventures have begun to create an opportunity for a thriving Icelandic sheep industry here in the US. Today we want to *begin a conversation* regarding the processing performance of the Icelandic fleece in the "mini-mill system" and the proper evaluation of fleeces for determining best end use.

## Introduction of MSF and JC Christensen

Morning Star Fiber began processing on January 5th 2005 and from the beginning has specialized in Icelandic fleeces as one of its main focuses – namely lopi. Our mill's purpose has been to provide value added services to farms across the country with the highest level of quality and dependability we could provide. We purchased equipment that focused on precision, dependability and customization over raw production power.

Over the years we have processed more than 10 tons of Icelandic fleece. Each year we have continued to grow in our understanding of processing Icelandic as more and more farms have entrusted us with their clip. It's been our pleasure to work with so many farms and even to raise Icelandics ourselves although in recent years we have had to raise a larger flock of kids and it's required more of our resources than originally anticipated. While my mother, Karen Christensen, is no longer a part of the daily operations, she was and is an integral part of what Morning Star Fiber is today. I'm thankful for her vision, courage and faith to go into the milling business and set the course that she did, and it's my joy to further her work and multiply the efforts that she started so many years ago.

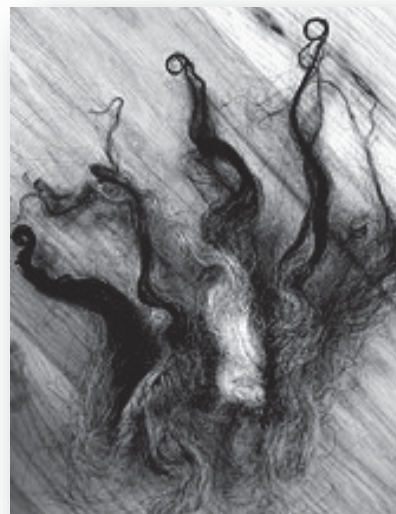
I personally never dreamed that I would one day own a fiber processing mill. After graduating from college at the University of Toledo with a degree in Commercial Recreation my hope was to join a high adventure camping program. After college I served for 14 years in youth ministry as a pastor. When I moved back to Ohio in 2006 I began working with my mother at the mill while I worked on my graduate degree in biblical counseling. In 2010 my mother blessed me with taking over ownership of the mill so that she could retire and spend time with her grandchildren and better serve her parents in their final years.



It's been a true blessing and a tremendous challenge but I wouldn't trade it for the world. I find this work to be well suited for tremendous challenge but I wouldn't trade it for the world. I find this work to be well suited for me and a great way to serve others and help steward one of the many wonderful things that God's creation provides. And I'm encouraged by all of the other hard working farmers who raise these wonderful sheep and take care of them.

### The Fleece Characteristics:

At Morning Star Fiber we break down Icelandic fleeces into the following categories when assessing them: color/pattern, lamb/yearling/adult, spring/fall clips – age and season having the biggest impact on processing performance. As stated on the ISBONA website, “Genetically, Icelandics have one of two base colors, either black or moorit (brown). They exhibit 5 pattern combinations: white, gray, badger-face, mouflon and solid.”



[A sample of grey fleece was passed around at this point.] Obviously there are varying shades of black and moorit fleeces and some whites are brighter than others. Grey fleeces are never truly grey in color but a combination of white and black or moorit fibers. This is important to note as often when fleeces are dehaired (which we will talk about later) the shade of the fleece will change when the coarser fibers are removed which are typically darker. In the milling industry a grey fleece is considered anything that is not a solid color regardless of how slight.

It has been our experience in the mill that as the Icelandic sheep matures it typically has a dynamic impact on the fleece including but not limited to its durability (known as tensile strength), micron count, length of thel/tog, and thel/tog ratio. We have assumed that this is due to being subjected to additional stresses, such as weaning, food sources, mineral supplements, disease, parasites, breeding, predators, etc. – all of these present opportunities for change in fleece characteristics. Lamb fleeces are always the softest fleeces. This does not always mean lower micron count but simply more uniformity in the tog and the thel giving it a softer hand. However, some lamb fleeces are significantly coarser in micron count or more varied in their uniformity. At MSF we define uniformity as “the lack of fibers of higher or lower micron count than the average across the fleece.”

Uniformity greatly affects the processing performance of any fiber being processed as the mechanical process involved in converting raw fleece into finished products tends to remove those fibers which have a greater disparity. Thomas Shaw's book published in 1914 titled *Management and Feeding of Sheep* is a great resource for any shepherd raising sheep. In it he makes the following comment on uniformity...

“Uniformity in wool has reference to a similarity in the wool fibers as distributed over the body. It has reference to fineness of fiber, to length of fiber, to strength of fiber and to density in the same. Complete uniformity in any of the senses named is not attainable; nevertheless, in all of these respects it is much more nearly approximated in some breeds and grades of sheep than in others, and the same is true of individuals of the same breed.

Uniformity in the fleece is maintained by continued and careful selection in breeding. To secure it in a marked degree, several generations of careful upgrading are necessary, combined with a rigid selection with reference to the end sought. Great improvement has thus been made in the uniformity of the fleece produced by several of the improved breeds, including some of the oldest.

Complete uniformity in the fleece is unattainable. It would not be possible to produce wool equally fine, long, strong or dense on the extremities of the body as on the body itself. Nor would this be altogether desirable. But on the body itself the greatest uniformity attainable should be sought. The value of the fleece will be proportionately enhanced as uniformity in the same is enhanced.”

Continued on pg. 13



### The Preparations: shearing, skirting & sorting

All three of these preparations for processing a fleece are vital to the value added process and when done properly can maximize the value latent in the fleece or significantly limit it.

Shearing has the potential to create uneven lengths, second cuts, increase foreign matter, and in general increase the amount of time needed in the skirting and sorting preparations. Finding a good shearer is highly important as it is increasingly difficult to limit the damage done during this preparatory step.



**Skirting** is the process of removing those parts of the fleece which would not be desired in the end product you envision. Lots could be said about what specifically you don't desire in your end product but the seller ultimately knows what their market is accepting of and the potential for decreased value associated with various "contaminants". It should be stated that the milling process while designed to remove contaminants it will not do so 100%, so the least amounts of these contaminants present in the raw fleece will result in greater yield and lower processing cost and ultimately higher profits in the selling of those products.

**Sorting** is the process of combining like properties in the fleece including color, micron and lengths. Specifically in the Icelandic fleece there will be various shades of solid moorit, black, white and then greys – both brown based greys and black based greys.

### The Process Performance of Icelandic:

#### Scouring, opening, dehairing, carding, drafting, spinning, plying, skeining, and fulling

**Scouring** is employed to remove lanolin from the fleece and any dirt that would be trapped in the fibers or held in by the lanolin. It is a process that reduces the weight of Icelandic fleeces by 35%. Prewashing fleeces is something that we encourage farmers to do as this reduces their shipping costs, increases their yield and profits at the farm gate. However, as a word of caution, Icelandic fleeces have a great propensity to felting and changes in water temperature can cause the fibers to become entangled and potentially damage the fibers in the opening process – at the least it can greatly increase the amount of processing time it takes to open them. Many people that we work with have found great results using Dawn dish detergent or other commonly found household products for removing grease from the fleece. Prewashing the fleece can mean the difference between getting back skeins that cost \$6.50/4oz skein and \$10.50/4oz skein to process.

**Opening**, also called picking, is employed to separate or individualize the fleece to aid in the aligning process later in carding and drafting. Proper opening of a fleece allows for foreign matter to be more easily removed and individual fibers to move freely in the aligning process. This is why matted, or felted, fibers present a problem in milling and are not encouraged to be sent into the mill for processing. This is especially important for fleeces that are being processed into yarns. When fleeces are not properly opened before carding they put added stress on the carding cloth and they tend to not draft evenly in the sliver, which is also called roving. At this stage in the process, plant based conditioning oils are added to the fleece to aid against static and to protect the fibers from drying out and becoming tender. This is similar to using conditioning products on your own hair when washing it.

**Dehairing** is employed to remove fibers which are heavier or coarser from the fleece. Originally a process used to harvest cashmere from goat fleeces, it is now widely used in dual coated fleeces and even triple coated fleeces like the Musk Ox. The easiest fibers to dehair are those that have a similar length but a great disparity in micron. For example, if your thel is 3 inches long and has a micron count of 18 and your tog is 5.5 inches long and has a micron count of 32, these fibers would be much more easily separated than a fleece which has 2 inch thel with a micron count of 23 and a 8 inch tog with a micron of 28. In the latter case however this is a great candidate for a lopi yarn as the handle will feel much softer due to greater uniformity. Dehairing has little effect in removing skein fleck! Research into discovering what causes skin fleck and how it can be avoided at the farm gate should be noted and readily shared to improve the Icelandic fleece industry.

**Carding** is employed to align fibers and is the last step in the process where any remaining contaminants can be removed. If they are not removed here they will remain in the product and potentially render it less desirable by the market buyer. Every product that is created in the mill requires carding. The carder is a machine that is made up of rollers that are wrapped in either a continuous serrated steel wire or file wire cloth. These rollers act as combs that gently align the open fibers into the same general direction and present it as a continuous web which can be made into a loose cloud, or batting, roving or core yarn with the use of various attachments to the carder. While not as effective as dehairing, a carder will tend to discard fibers which have a greater disparity. Some mills will claim that they can dehair your fiber without having a dehairing machine but it requires multiple passes at the carder to do so. The more mechanical processes that your fibers are subjected to, the greater the opportunity for them to be damaged or weakened. This will reduce luster, decrease its tensile strength and cause it to be more unevenly drafted. Finer fibers require that the carder be fed with smaller amounts of fiber at one time as you're increasing the amount of individual fibers to be carded but still have a fixed number of points of carding. If finer fibers are fed at the normal measures for coarser fibers it will tend to break the fibers and cause nepping in the roving.

**Drafting** is employed to join rovings together in a process called "doubling" in the milling industry. This is desirable as it tends to reduce the inconsistencies created in the carding process. This is also a great place to combine different colors or fiber types to make variegated yarns. During this process the combined rovings are also stretched or drafted, reducing the density of the roving and preparing it for spinning finer yarns. In the mini mill system there are two types of drafting systems – the pin drafter and the drawframe. MSF uses a drawframe. The pin drafter will pull the rovings through a series of pins which will further align the fibers and tend to remove more vegetable matter and short cuts. The advantage of the drawframe is that it allows the combining of colors to be more distinct.

**Spinning** is employed to make the final reduction in the density of the roving through a process called drafting and add the proper amount of twist to the roving to make a uniform single which can later be plied with other singles to make a balanced yarn. All of the mini mill systems that I know of in the United States use a ring spinning system. These machines are either calibrated using a pulley system or variable speed motors. MSF uses a machine that has variable speed motors which allows us to make virtually any sized yarn within the limits of the fiber itself. This is where the idea of spin finess was discovered. Spin fineness is the concept that a spun single must have at least 40 individual fibers in order to be structurally sound – properly resisting abrasion tests and meeting or exceeding tensile strength tests. Unknowingly farmers and mill operators have tried to create yarns that are finer than the fibers can naturally create, which results in yarns that fray and break more easily. Pills are not created by this concept but instead are the result of second cuts left in the roving or neps that were created during carding.

**Plying** is employed to make a balanced yarn and join singles together. This is where the concept of multiple plies of yarn comes into play. The more plies that are put together, the rounder the yarn will be and the more resistant to shedding. Three or more plies in the yarn tend to be easier to knit and crochet with as they don't split as easily. Different sized yarns can be created by simply adding more plies. For example, if a 2000 yard per pound single is spun and two plies are created, it would be a 1000 yard per pound worsted weight yarn, but when four plies were joined together, it would be a 500 yard per pound chunky weight yarn.



**Skeining** is employed to make measured lengths of skeins according to market demand. Typically skeins are made that are a quarter of the length targeted. So a 1000 yard per pound yarn would be skeined up in 250 yard lengths. These skeins will weigh roughly 4 ounces but may be off as much as 10%. Custom yardage can be created for specific patterns which is a great way to sell smaller sized skeins at lower price points while still creating a completed piece. This is great for beginners who need smaller projects and typically want to pay less for the yarns they initially purchase before moving onto larger and more advanced projects.

Continued on pg. 15



**Fulling** is employed to make the yarn relax and take on its final state before being worked into a piece. This is a critical step as yarn that is left on a cone is still under tension and has not properly bloomed to reveal the character of the fiber. However, there is a certain amount of shrinkage that happens when the fulling process takes place as the crimp comes back into the fiber, making it more lofty and increasing the angle of the twist in the yarn. This reduces the yardage in the skein anywhere from 6 to 15% depending on the amount of crimp in the fibers originally.



### **Developments in Techniques for Processing: Carder Speeds, Color Blending, Spinning Style Networking among Mills**

Since 2010, a Facebook group was created by MSF to reach out and network with as many other mini-mills as possible in order to learn from each other and help in problem solving and generating more creative ideas in the processing of natural fibers. We now have over 125 members and over 60 mills represented. We collaborate on a daily basis and have seen many new developments come out of this interaction. What is listed below has been largely influenced by this Facebook group and we at MSF have leveraged it to better understand how to serve the various breeds and customers that we work with.

#### **Carder Speeds**

Recent updates to the mini-mill carding systems have introduced the idea of knowing and controlling the RPM speed of the carder while it is in operation. This development has allowed us to begin gathering data on different speeds and the impact on sliver density, uniformity, degree of carding, and becoming more precise on regulating yards per ounce of roving created. This advancement is not yet fully understood but within the next couple of years we believe that this will greatly change the quality of custom process and give yet another way in which it can stand out from the larger commercial processing industry. This has had the largest impact the creation of lopi which relies heavily on the precision of the carded sliver to be as uniform as possible.

#### **Color Blending**

Since the Icelandic sheep has multiple colors within its breed, being able to creatively join those colors together or keep them separate has been a key to the value added process and has helped to set mini-mills apart from larger mills which tend to ask for much larger batch sizes of a particular color or color blend. Our goal at MSF has always been to find as many unique ways to create distinction in the market place based on color. Testing has been done on blends happening at all of the various stages in processing and in various ways. The general rule is that the earlier in the process they are blended the more homogenous they will be in the final product. And conversely the later in the process they are blended, the more dynamic they are in the final product.

#### **Spinning Style**

In the last year we have begun to experiment with the style of spinning. Our goal was to create even more distinction in our lopi yarn and improve its quality and appeal in the marketplace. While our mill is considered a semi-worsted in the milling industry, we have been experimenting with ways in which we can make our lopi yarns more woolen in their construction to create more loft and felting capacity.

#### **Conclusion:**

I want to conclude by saying that this is just the beginning of a conversation that I think will greatly increase the potential of the Icelandic fleece industry. We welcome the participation of any and all farmers and believe that through discussions and inquiries there will be new discoveries and greater more focused leverage of this amazing fleece and its potential in the marketplace can be more fully realized. I want to thank you for the opportunity to share with you all this morning and look forward to further interactions.

	The Morning Star Fiber business and Christensen family will be moving to North Carolina in the spring. You can stay connected to all the latest updates on their Facebook page.
---	---

**JC Christensen**  
Owner of Morning Star Fiber  
8522 Dover Rd.  
Apple Creek, Ohio 44606  
330-778-0078



# 8<sup>th</sup> World Congress on Coloured Sheep

Paris, France, 19 - 21 May 2014

A Review: Bruce M Tinnock

The 8<sup>th</sup> World Congress on Coloured Sheep held in Paris, France, in May, 2014, marked the fourth decade since these five yearly gatherings originated in Adelaide, Australia, in 1979. Previous Congresses during that time were held in New Zealand, USA, UK, Australia and Brazil, each attracting participants from many countries of the world. These included commercial farmers and lifestyle owners of coloured sheep, others involved in sheep and wool research, education, conservation, wool handicrafts, wool processing and marketing.

This 2014 event, held at the Paris Mercure Hotel Porte d' Orleans, was the first of its kind to be hosted on the European continent. Co-ordinated by Dawie du Toit, a breeder of coloured sheep from Prieska, South Africa, in association with travel and conference organiser Amélie Quenet of Paris, it attracted near 85 registered participants from countries including UK, USA, Australia, New Zealand, continental Europe and Scandinavia. Pierre Del Porto of Paris, also played a pivotal role in organizing both the Congress and the Post Congress Tour.

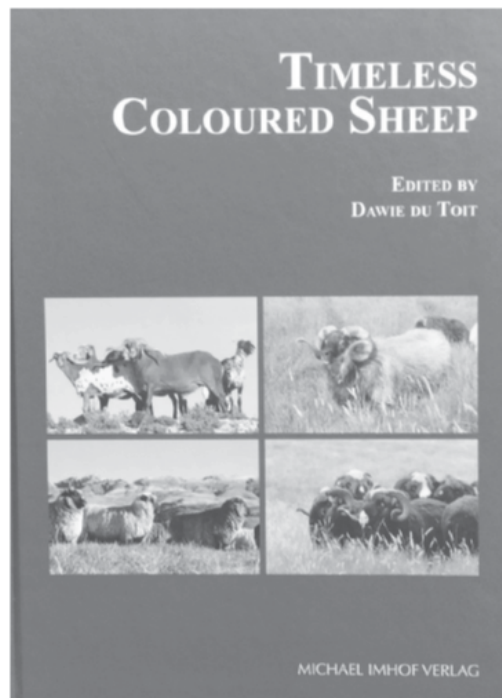
With English as the official Congress language, thirty three papers were presented during the first two days of Congress sessions. Topics included genetics of coloured sheep, sheep production and management, fleece biology, wool handicrafts, wool processing and marketing. Several presentations were supplemented by colour projections, particularly appropriate when discussing coat colour patterns, but also providing excellent visual impressions of the various environments in which sheep are raised.

The third day of Congress featured an excursion by all delegates to the historic Bergerie Nationale national sheep

farm at Rambouillet, to hear presentations on the history of Rambouillet merinos and of management of the present day flocks viewed. These are direct descendants of the original 380 Spanish merino sheep bought by Louis XVI of France from the King of Spain in 1786 and which were established on the Rambouillet Estate, an experimental Government farm. The excursion later continued to Versailles, where time was available for walks to visit the historic Chateau of Versailles and the vast expanse of parkland and gardens in which it is situated.

The Congress book published at the time [*Timeless Coloured Sheep*: edited by Dawie du Toit; Michael Imhof Verlag, Petersberg] includes all Congress papers presented, with additional special articles on various European sheep breeds. Hard bound and printed on high quality paper, it features 558 colour photos of sheep breeds and coat colour patterns and some wool end products of handcraft and industry. Other illustrations comprise monochrome photos and diagrams. Edited by Dawie du Toit, its layout and the emphasis on various details by utilising a variety of typefaces in both captions and text is impressive. Digital technology has ensured an even consistency of quality in colour reproduction throughout.

The three contributions by coloured sheep breeder and geneticist Roger Lundie of New Zealand on The *Agouti Locus* of the Sheep are regarded as the most authoritative and comprehensive reference on sheep coat colour genetics yet published. This book is an attractive and prominent work which will be appreciated world-wide by all people with an interest or involvement in coloured sheep and their wool.



*Copies of the Congress Book can be ordered from Nathalie Ketterle at:*

[info@archehof-ketterle.de](mailto:info@archehof-ketterle.de)





# The Organic Shepherds Lambing Kit

---

Along with the excitement and anticipation of lambing comes a certain amount of concern about being prepared, especially for folks who are new to shepherding. Being prepared for lambing starts with good nutrition several months before lambing actually begins. Proper nutrition and mineral supplementation is essential to a successful lambing season. Ewes that are properly nourished will have fewer lambing issues and their lambs will be stronger at birth. Making sure that your ewes are well supplemented with selenium and calcium is vitally important. But, even with correct nutrition, things can happen at lambing... and one wants to be prepared for those occasions when trouble arises!! New and experienced shepherds, alike, should go through the lambing section of Laura Lawson's book, *Managing Your Ewe*. It is a valuable resource that I revisit each year before lambing.

## Many of the essentials in our lambing kit would be the same as for a conventional farm:

- ☒ 7 % Iodine for navels. We use Triiodine-7 and I add some tea tree oil to that.
- ☒ Scale and sling for weighing newborn lambs. I like the ones they sell at Premier.
- ☒ A rectal thermometer for checking temps of newborn lambs. Essential for knowing whether or not a lamb is chilled.
- ☒ Bulb syringe for cleaning out excess fluid from nostrils and throat of lambs slow to start.
- ☒ Lubricant. Necessary for assisting deliveries. It is nice to have one with antiseptic qualities, like SuperLube. We use the powdered J-Lube, or SuperLube.
- ☒ Tubing kit for getting milk into weak lambs. A 60 cc. catheter type syringe and lambing tube. Good to have extra tubes on hand.
- ☒ Frozen colostrum. Do not thaw frozen colostrum in the microwave as it will destroy antibodies. New shepherds can collect colostrum from first ewes to lamb.
- ☒ Syringes and needles for giving injections.
- ☒ Milk replacer for bottle lambs.
- ☒ Milk bottle and nipple for feeding bottle lambs. Many prefer the Pritchard teat nipples.
- ☒ Ear tags and applicator and SuperLube for lubricating and disinfecting tagging applicator.
- ☒ Baling twine or lambing loops for assisting in difficult births.
- ☒ We keep all of the essential vitamin injections on hand: BoSe, Vitamin C, Vitamin B Complex, and Vitamin A, D, E.
- ☒ Clean rags and paper towels.
- ☒ Scissors
- ☒ Molasses to add to ewe's fresh water for quick energy.
- ☒ Small syringe for giving warm water enema.

## Here are some of the certified organic products that we use:

- ☒ Ketonic: available from Agri-Dynamics or Lancaster Ag. Used to treat ketosis, stressed ewes.
- ☒ CMPK Oral from Lancaster Ag. Used to treat milk fever, stressed ewes.
- ☒ Ultra Cal Drench from Agri-Dynamics. Can use this for milk fever, tetany, dystocia, stressed ewes. Also used for stressed lambs.
- ☒ Neema-Tox and Vermi-Tox from Agri-Dynamics: For use in ewes with parasite flare up at lambing.
- ☒ Super Start Calf Bullets from Agri-Dynamics. Can be used for lambs that are scouring or seem at all unwell.
- ☒ Udder Comfort Yellow Spray: Soothes and softens udders. Use for sub-acute mastitis cases. Can be ordered from PBS Animal Health.
- ☒ Homeopathic arnica and Rescue Remedy: Given after difficult birth to reduce swelling and stress.
- ☒ Banamine: Prescription pain reliever, for use after very difficult assisted birth when a ewe may have a lot of pain.
- ☒ Aloe C: Available from Lancaster Ag. A great product to keep on hand. Fine nutritional qualities and antioxidant properties, aids digestive issues, soothing for wounds.
- ☒ Wild Herb Drench: Available from Lancaster Ag. Tonic tea for the lungs or any respiratory problems. Provides vitamins and antioxidants.
- ☒ Bio-Start Paste from Bio-Vet. Direct fed microbial and vitamin supplement for adults and lambs.



Continued from pg. 17

For those of you interested in moving toward a more "organic" operation using holistic products, please visit these websites: **Lancaster Agricultural Products:** [http://shop.lancasterag.com/Animal-Health\\_c117.htm](http://shop.lancasterag.com/Animal-Health_c117.htm) **Agri-Dynamics:** <http://www.agri-dynamics.com> **Crystal Creek:** <http://www.crystalcreeknatural.com> **Bio-Vet:** <http://www.bio-vet.com/index.htm>

So, get your lambing kits in order, get out your Laura Lawson books, and relax a bit before lambing time begins. I wish you all the most successful lambing season!

Kathy Taft Boyden  
Kindhorn Farm  
South Duxbury, VT  
[www.kindhornfarm.com](http://www.kindhornfarm.com)

*Certified organic hill farm raising purebred Icelandic sheep, chickens, veggies, and fruits. We are an off-grid farm, using solar and hydro to create our own power. We sell registered Icelandic breeding stock, certified organic wool, many different yarns and rovings, and certified organic grass fed lamb.*

---

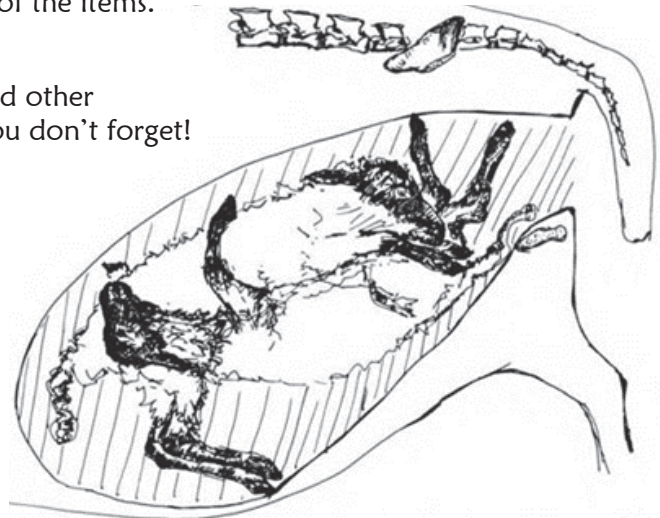
## LAMBING KIT

---

**Disclaimer:** This is intended as a guide for the essentials. It is not exhaustive, and there are alternatives for many of the items.

### Things you will need

- A notebook and pen – to write down lamb weights and other observations, in addition to what you have done so you don't forget!
- Plastic Ziploc® bags (to keep things clean and/or dry)
- Triiodine-7 (or 7% iodine)
- Iodine cup
- Thermometer
- Ear tags, Scrapie tags, tattoo kit with appropriate letters and numbers
- Scale and sling
- CD/T vaccine
- Syringes (3cc) and needles (20-gauge, ½ - 1 inch)
- Scissors
- Towels
- Gloves
- Selenium/E paste and/or BoSe
- Vitamin B



### Things you may need sooner or later

- Penicillin
- Lamb stomach tube and catheter tip syringe  
(See Elaine's instructions for use)
- Colostrum (commercial, or your own frozen)
- Feeding bottles (16 oz soda bottles work well)
- Pritchard nipples
- Milk replacer
- Heating pad
- Lamb cover
- Nasal syringe
- Sterile lubricant

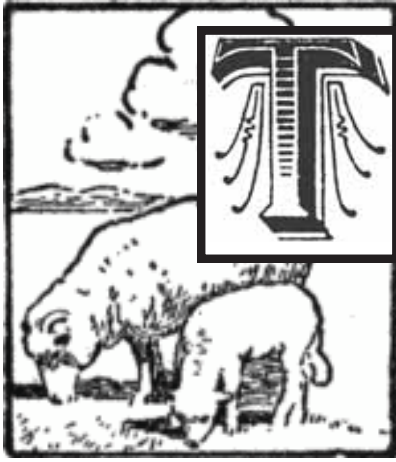
### Things you hope you will never need, but just might

- Calcium gluconate (for hypocalcaemia)
- Dextrose (50%) (for lambs with hypothermia)
- Propylene Glycol (for ketosis)
- Uterine boluses (retained placenta)
- Prolapse retainer and harness
- Lamb puller (snare)/lambing rope
- OB gloves

### Things it might be nice to have

- Udderly EZ-Milker®





# Tube Feeding Lambs

---

Tube feeding is not hard...really. Sometimes it is necessary. **It is not a bad idea to try it once or twice in a non-emergency situation...**

- Measure the tube along the outside of the lamb with the tip located behind the front leg, where the stomach would be, and along the neck to the tip of the nose.

• Note about how long this is and then just wet the tube with warm water and hold the lamb in your lap with it head facing your dominant hand and the lamb's head up cupping its lower jaw in you other hand, pointing the nose comfortably upwards. That position that closes the windpipe and makes it easier to slide the tube into the esophagus. Let the lamb swallow the tube if it is strong enough; if not, gently move the tube into the lamb's throat...if you are in the wrong pipe, the lamb may cough and struggle if it is not too weak. If you are not sure where you have placed the tube, place the end near your cheek, if air is coming out as the lamb breathes, try again. Alternatively, hold the end under water to see if it bubbles with breathing – if it does, try again.

• Place the syringe or turkey baster tube into the end of the tube. Let milk flow into the lamb via syringe or baster by gravity. Do not force it with a plunger or bulb in place. Remove the syringe or baster. Put your thumb over the end of the tube as you remove it in one smooth motion, which helps to keep milk from dribbling into the windpipe.

• Try it with just a little warm water on a healthy lamb. You will be more comfortable if you have to do it in an emergency in the middle of the night if you have tried it once. Lambs often get really warm after you feed them, a flush...like a hot flash (some of us may be able to relate to that too)...it is normal. If a lamb is too weak to suck and swallow, don't force any milk in without a tube, milk in lungs will make a pneumonia situation that is hard to treat.

**Elaine Clarke**

Frelsi Farm Icelandic Sheep & Icelandic Sheepdogs

# LAMBING TIME CHECKLIST

---

**Disclaimer:** The following is a suggested timetable, and is based on a number of sources. There is, however, no one right way to accomplish a successful lambing season, and there are probably as many variations as there are shepherds. Happy Lambing!

- One month before lambing:**
- \*CD/T boosters for ewes
  - \*Diet a rising plane of nutrition
  - \*Selenium/E supplement to ewes
- Two weeks before lambing:**
- \*Treat water every day with coccidiostat (continue until 2 weeks post lambing)
  - \*Make sure lambing kit is complete
- At lambing:**
- \*give the ewe space and quiet**
  - \*have handy and refer to one of the many excellent resources on lambing, such as those by Laura Lawson
  - \*For problem births, don't hesitate to seek help from your veterinarian.**
- After the birth:**
- \*Make sure the lamb has nursed
  - \*BoSe shot (1/4 cc)
  - \*Vit B shot (1/2 cc)
  - \*Squirt of nutridrench (3 cc) or baby lamb strength
  - \*Snip umbilical cord, and dip in iodine
  - \*Weigh lamb and record weight
  - \*Apply ear tag(s)
  - \*Deworm ewes
- Six weeks post lambing:** First CD/T vaccinations for lambs (titer is dropping in ewes)
- Ten weeks post lambing:** Second CD/T vaccination for lambs

## THE TATTOO LETTER for the year 2015 is C

If you have sheep from previous years that you wish to tattoo/register, the letters from the last few years are:

2011 — Y	2014 — B
2012 — Z	2015 — C
2013 — A	2016 — D



# FEEDING NEWBORN LAMBS

## Lamb Bottle Feeding Amounts

When things don't go as planned between ewe and lamb, the shepherd(ess) suddenly finds him/herself in the role of mama to an adorable ball of curly wool. In the eventuality that comes to pass on your farm, Mike Kelley of Dancing Lamb Farm has done all the necessary calculations for the questions you will be asking:

*How much? And how often?*

This information is available on Mike's website: [www.dancinglambfarm.com](http://www.dancinglambfarm.com)

—Thanks, Mike!



<b>First Colostrum Feed:</b>		
20cc per pound of body weight ASAP (30-60 minutes after birth if possible)		
Wgt lbs	Cc's first feed	Oz. of feed
1.5	30	1
2	40	1.4
2.5	50	1.7
3	60	2
3.5	70	2.4
4	80	2.7
4.5	90	3
5	100	3.4
5.5	110	3.7
6	120	4
6.5	130	4.4
7	140	4.7
7.5	150	5
8	160	5.4
8.5	170	5.7
9	180	6
9.5	190	6.4
10	200	6.7
11	220	7.4
12	240	8
13	260	8.8
14	280	9.4
15	300	10

<b>Continued Bottle Feeding:</b>		
Amounts of feed for 24 hr. period		
Wgt lbs	Wgt oz	x 20%
1.5	24	4.8
2	32	6.4
2.5	40	8
3	48	9.6
3.5	56	11.2
4	64	12.8
4.5	72	14.4
5	80	16
5.5	88	17.6
6	96	19.2
6.5	104	20.8
7	112	22.4
7.5	120	24
8	128	25.6
8.5	136	27.2
9	144	28.8
9.5	152	30.4
10	160	32
11	176	33.4
12	192	38.4
13	208	41.6
14	224	44.8
15	240	48

= Amount/ounces in 24 hours  
(divide by number of feedings/day)

<b>Suggested Feeding Schedule</b>	
Age of lamb	Timing - Hours between feeding:
1 <sup>st</sup> day	2
day 2-3	3
day 4-7	4
day 8-21	6
day 21-35	8
days 35+	12





# Fashion in the Slow Lane

by Linda Schwab

No doubt about it: in a culture of cheap clothing and disposable designs, natural fibers are a hard sell. The most economical form, raw fleece, requires both expertise and time to become a finished garment. The more the fiber is processed - especially by hand - the higher the price. At fiber festivals we treasure the repeat customers who seek us out for a fresh supply of fleece, roving, yarn or felt. Such transactions are more than money: the buyer gets something uniquely suited to her creative intent, and the seller knows her work to be appreciated. How can we create more of such mutually satisfying person-to-person connections in our home regions?

At the 2014 Cornell Sheep and Goat Symposium last October, Helen Trejo presented her M.A. research on "Creating a Fibershed for New York." Originally from LA, Trejo brought a degree in Fashion Design to Cornell's graduate program in Fiber Science and Apparel Design. She soon became intrigued by the fiber farms in NY and their potential for developing both supportive infrastructure for fiber businesses and more effective consumer marketing.

From its high point in 1840-1845, American wool production declined as sheep farming moved from the Northeast to the West. The increasing emphasis on meat production in this transition drove breeding away from high-quality wool. Over the last decade, however, both the textile and fashion industries have begun to respond to growing consumer interest in local resources and the regional landscape as elements in increased quality of life. Although "Fast Fashion" remains the dominant paradigm for the US fashion industry, a counter-movement seems to be developing. In parallel with "Slow Food," "Slow Fashion" emphasizes local resources, labor and culture: clothing rooted in the local region, carefully chosen and meant for long use rather than disposability.

The first such "Fibershed" began with the *Soil to Skin* "150-mile wardrobe" in Mendocino County CA; however, the proposed mill that would have taken fibers from raw fleece into clothes on the rack proved too expensive at this stage. Despite this, other regions took up the Fibershed model to connect regional farmers, designers, labor and resources in various ways.

New York State, which is rich in fiber farms, also has both processing and knitting mills, but its unique resource is the fashion and apparel industries of New York City. Several NYC designers and entrepreneurs focus on the connection between regional farms and design and manufacturing resources. The social infrastructure that can support this collaboration includes sheep associations, fiber festivals and (in Washington County, on the Hudson River) a fiber tour. Trejo began her work by surveying fiber farmers and fiber mills, particularly focusing on marketing strategies. She found that farmers communicate with potential consumers about (a) fiber characteristics, (b) fiber animal heritage, (c) the individual qualities of their animals, and (d) the sustainability and animal welfare value of natural fibers.

The natural question, then, is which of these kinds of information (or what combination) is most effective in attracting consumer interest. Trejo hypothesized that how well the fiber product fits the consumer's values will be important in product selection. (Actually, Trejo subdivided this hypothesis into three parts so as to define more clearly consumer values related to product perception, importance of "local," and product attachment.) To explore this with an online *Ravelry.com* survey, she knitted three sweaters from the same pattern (modified from the "Opulent Raglan Sweater" popular on *Ravelry.com*) from wool, alpaca, and cashmere, and provided three levels of description for each: one with basic fiber information, one with a fuller description of the local farm, and one including information about breed and animal characteristics.

But sooner or later, the best-designed experiment must meet reality. The only correlation that was statistically significant was that the consumers' product evaluation was favorably influenced by the clear "made in America" message of even the simplest sweater ad. Additional information appeared to make no difference.

This seems very odd to those of us who sell at fiber events of various kinds, where conversations about the farm, the animals and the breed do seem to have some influence. Trejo, of course, realized (as any of us would) the missing factor: an online survey doesn't let the buyer touch the fiber. (A finished garment might



also not have been as good a choice to interest the *Ravelry* consumer as yarn might have been.) People interested in natural fibers are a tactile lot. Face-to-face events naturally convey what pictures cannot, the actual feel of the fiber.

A lively discussion followed this interesting talk. Although it might seem that consumer interest would drive designers to use, for example, American-grown (or Canadian-grown) Icelandic fiber, the reverse can also be true. Indeed, the growing number of designers who espouse the “Slow Fashion” emphasis on heirloom-quality garments from regional farms may eventually play an at least equally important role by awakening consumer awareness of what Helen Trejo calls “sustainable luxury.”

For me, this lecture was the highlight of the Cornell Sheep and Goat Symposium. I’m often all too aware of how foreign the handcraft approach has become to most people. In the State Fair Wool Center, I hear parents (and sometimes even grandparents) pointing out that the spinners are “making string,” and “that’s how clothes used to be made” - with contemporary knitted garments on display behind the spinners and in at least two other popular buildings around the Fair. Breaking into the dominant paradigm of cheap, disposable clothing is not easy. But the interest in and development of the “fibershed” idea is a start. Collaborations among farms, mills, dyers, and designers are bound to be mutually reinforcing. Perhaps they will indeed create a demand for luxury ready-to-wear clothing from locally-grown natural fibers. But such an infrastructure also promotes the increase of fine craft and its many satisfactions. If that remains the dominant avenue to “sustainable luxury,” that’s still a good outcome.

**Linda Schwab**  
*Glebe Farm*  
 Aurora, NY

*Linda lives in central New York on what some might call a micro-farm and others might call an odd quirk of local zoning. Captured by the fascination of all things Icelandic, she also has Icelandic chickens as well as some other critters of no particular provenance. She aspires to be on the cutting edge of nineteenth century small scale agriculture.*



**Red Brick Road Farm**  
*Icelandic Sheep & Wool*  
 www.RedBrickRoadFarm.com Dixon, IL 815.288.5886

**Trinity Farm**  
 Registered Icelandic Sheep  
 VAI Genetics: Horned, Polled, Leadersheep



Breeding Stock  
 Hand-Spun Yarns,  
 Rovings, and Fleece  
 Sheep Milk Soaps

Margaret G. Flowers  
 Aurora, NY  
 Email: mflowers@wells.edu  
 315-246-1178

www.trinityfarm.net



Reg. Icelandic Sheep

The Grutter Family  
 2655 S. Villa Ave.  
 Palermo, CA 95968  
 530-949-1370  
 kcaggiebiz@gmail.com

Selling meat, yarn, wool,  
 breeding & show sheep

**The Silver Maple Farm**

**Little Silo Handcrafts**

Frankfort, Ohio  
 www.thesilvermaplefarm.com

Registered Icelandic and Leicester Longwool Sheep  
 Clean Wool Fiber ~ Handspun Yarn ~ and More

OHIO SHEEP & WOOL ... NATURALLY

## Submission Guidelines for Articles:

Send **articles** in .doc, .docx, .txt, .pages, or .rtf format and illustrations as jpg attachments (small format, please) to:

**Margaret Flowers, mflowers@wells.edu**

**Ads:** Send *camera-ready* ad in .doc, .jpg, or .pdf format, *all photos grayscale* to:

**Terri Carlson, tcarlson@centurylink.net**

—AND—

Send payment (see chart) in US or Canadian funds to:

**Cassie Petrocelli, Ledge Hill Farm  
253 North Street, Mechanic Falls, ME**

## Newsletter Ad Rates

<u>Size</u>	<u>Price</u>
Full Page Color	\$200
1/2 Page Color	\$100
Full Page B/W	\$35
2/3 Page B/W	\$30
1/2 Page B/W	\$25
1/3 Page Ad	\$20
1/4 Page Ad	\$15
1/8 Page Ad	\$10

### Ad Deadlines

January 1

April 1

July 1

October 1

WINTER

SPRING

SUMMER

FALL

### Article Deadlines

January 15

April 15

July 15

October 15



## The Creek's Edge Icelandic Sheep

Improved genetics through VAI.  
Quality breeding stock for sale  
Regional delivery available

15331 Dawkins Rd.  
Rapid City, SD 57703  
605-393-1972  
[ajleighton@gwtc.net](mailto:ajleighton@gwtc.net)

**Alan Leighton**

## Back in Balance Minerals

Formulas for Sheep, Goats and Horses

A bioavailable line of minerals formulated by herbalist and traditional naturopath Alethea Kenney. Created to improve digestion, growth, fiber, health, immune function and reproduction. Contains no fillers or artificial preservatives, non-GMO.



**For Orders:**  
North Central Feed Products, LLC  
**Pete Kjolhaug**  
Orders: **Zena Dunker**  
70 Alice St.  
Gonvick, MN 56644  
877-487-6040  
[ncfp LLC@gmail.com](mailto:ncfp LLC@gmail.com)

Beautiful fiber starts with good nutrition!

### Product Information:

Alethea Kenney  
Traditional Naturopath  
Western Herbalist, Aromatherapist,  
Small ruminant nutrition consultant  
for North Central Feed Products, LLC  
218-657-2502  
[allie@borealbalance.com](mailto:allie@borealbalance.com)



[www.backinbalanceminerals.com](http://www.backinbalanceminerals.com)  
[www.borealbalance.com](http://www.borealbalance.com)

**WOOLY WOODS  
FARM.com**

**Icelandic Sheep Breeding Stock,  
Gourmet Lamb Meat & Well-skirted Fleeces**

[www.WoolyWoodsFarm.com](http://www.WoolyWoodsFarm.com) 715-385-3772  
Email us at [WoolyWoodsFarm@yahoo.com](mailto:WoolyWoodsFarm@yahoo.com)  
Located in beautiful Boulder Junction, Wisconsin





# The AI Corner

In this issue, we feature three sires that are newly part of the AI program in North America. Great animals, who have produced outstanding offspring in Iceland!

## AI Sire Myrkvi 10-905 (Horned)

Myrkvi 10-905 from Brunastadir farm, Fljot, North-Iceland

Pedigree: Myrkvi is a grandson of AI Sire Sokki 07-835, plus he has AI sires Mimir, Sonar and Flotti in his pedigree.

Conformation scoring: 2010-52-112-31/3,5/4,0-8,0-8,0-8,5-8,5-8,5-18,0-8,0-8,0-8,5=84,0 points.

**Description:** Black with short and good looking head, rather coarse and narrowly curved horns. Broad neck, rather coarse shoulders but good rib shaping. Strong and broad back. Rounded and muscular loin. Excellent gigot muscling. Strong feet. Vigorous ram with good overall harmony.

**Wool:** Very dark and even black color. Wool yield above average with thick thel and medium long, curly and medium fine thog.

**Results:** Myrkvi 10-905 is now beginning his second year as an AI ram after being selected on the basis of good results at his birth farm. He was used a lot last winter and a large number of his progenies were evaluated this autumn. Amongst them were quite a lot of lambs with very good conformation, especially regarding back, loin and gigot muscling. One year old son of Myrkvi performed very well in a progeny testing this autumn at Myrkvi's birth farm. Myrkvi is considered to be a very good breeding ram. Myrkvi's breeding indexes tell us that he will be a very good father to daughters, both regarding prolificacy and milking abilities.

**Color inheritance:** Myrkvi is black and carries both moorit and spotted. Scrapie resistance genotype: Neutral

### Ram lamb evaluation 2014

Number: 210  
Weight, kg 46,9  
Cannon bone length, mm 111  
Gigot scoring 17,5  
Wool scoring 7,9  
Eye muscle, mm 30, 3  
Back fat, mm 2,9  
Eye muscle shape 4,2



## AI Sire Florgodi 11-886 (Leader)

Florgodi 11-886 from Hafrafellstunga farm, Oxarfjordur, Northeast Iceland

**Description:** Florgodi is a leader ram with very special color. He is a moorit badgerface with a blaze and socks. He is very young but has already shown very good leader abilities as well as being very calm and well awake concerning his surroundings.

Florgodi is, as his pedigree states, a little bit related to Karl Philip (AI leader) as his grandfather, Mori 04-255, was Karl Philip's father.

**Color inheritance:** Florgodi carries variation of colors and patterns. Scrapie resistance genotype: Heterozygous protective.



## AI Sire Grafeldur 08-894 (Polled)

Grafeldur 08-894 from Bakkakot, Medalland, Southeast-Iceland

**Description:** Grey, polled with short, broad and vigorous head. Shoulders are rather coarse and average rib shaping. Strong back, broad and muscular rump. Average gigot muscling. Good body length. Strong feet. Broad and vigorous ram.

**Wool:** Stone grey with even fleece color. Wool quantity well above average. Even the and fine and curly thog, especially at the back, coarser in the sides.

**Results:** Grafeldur 08-894 was bought in 2013 when it was decided to buy a ram with special pelt qualities for AI. When breeding for pelt qualities five wool characteristics are evaluated: Color, lock quality, fleece density, luster and fiber qualities. Those qualities are easy to breed for because they have high heritability but it's right to mention that first generation progenies will not be outstanding in pelt qualities unless Grafeldur is bred to ewes which are outstanding according to those qualities mentioned. In lamb evaluations at Bakkakot farms during the recent years Grafeldur's progenies have been above average in all mentioned qualities except fleece density where they have been at average.

Wool of sheep with good pelt qualities is very soft and nice to touch and feel. For such a wool we have a growing demand for knitting and other wool processing. Grafeldur was not selected for AI to improve conformation and right to bear that in mind.

Color inheritance: Grafeldur is heterozygous grey, not known to carry moorit or spotted. Scrapie resistance genotype: Neutral.



---

The **2015 AGM** will be held in Hamilton Montana at the Big Sky Fiber Arts Festival, June 12-14. Sondra Gibson has offered to organize the event, and she has done so twice before and does a wonderful job!

The sheep show will be on Saturday the 13th of June. The AGM will be that evening from 6:30 to 9 pm at BJ's Family Restaurant and Lounge. This is located directly west of the Ravalli County Fairgrounds where the festival and the sheep show will be held. I have reserved their meeting room for us.

The sheep show information has NOT yet been updated on the festival website. (one of the many things I need to get to now that this has been decided) What is there now is 'left over' from 2 years ago. However the animal health info page has not changed. <http://www.bigskyfiber.com/>

Besides the sheep show there will be many interesting classes (not all are on the website yet) displays and vendors. The vendors are all indoors so we aren't subject to the whims of Mother Nature. Weather in June in Hamilton can either freeze or fry you - and anything in between.

Questions, thoughts, suggestions, offers of help - I'm more than happy to hear all of them!

Make your plans now to attend and get together during this fun event with other ISBONA members!

—Sondra Gibson, [sgibson@RavensRestIcelandics.com](mailto:sgibson@RavensRestIcelandics.com)



# Charis Farms



*Meat, Milk, & Fiber*



*Signar*

*TCE AI RAM 01P 849A*



*Bogi 2*

*TCE AI RAM 01P 677Y*

## **Charis Farms**

Registered Polled Icelandic Sheep

Levi and Kristine Maltby 406-570-9042

charisfarms.com

levimaltby@hotmail.com



# Behavioral Studies on Icelandic Leadersheep

Ó.R. Dýrmundsson<sup>1</sup>, E. Eyrthórsdóttir<sup>2</sup> and J.V. Jónmundsson<sup>1</sup>

<sup>1</sup>Farmers Association of Iceland, Bændahöllin, Hagatorg, 107 Iceland

<sup>2</sup>Agricultural University of Iceland, Keldnaholt, Reykjavik, 112, Iceland [ord@bondi.is](mailto:ord@bondi.is)



Icelandic leadersheep, a unique strain within the North European short-tailed Iceland breed, are known for their strongly inherited urge to walk or run in front of their flock. Leadersheep, normally kept in small numbers in each flock, are now found in just over 400 out of 2,200 sheep flocks in Iceland, numbering only 1,500 head out of the national sheep population of 475,000. Emphasis has been placed on conservation measures since the late 1950s, mainly through AI and individual recording. Although the difference between leadersheep selected for their outstanding behavioural abilities and intelligence, and other sheep of the same breed mainly selected for meat production characteristics, has been well known for centuries, experimental evidence acquired under controlled conditions has been lacking until recently. This paper presents the main results of a series of standardized trials in five sheep flocks so as to determine the willingness of ewes, rams and ewe lambs of the leadersheep strain to walk or run in front of groups of 'ordinary' sheep driven a certain distance from and to sheep houses known to them. The same two observers recorded behavioural events in all five trials and one of them was filmed. The trials were conducted in late October and early November of the same year, just before the onset of winter housing. The results of the repeated tests were unequivocal in demonstrating the clearly pronounced and intrinsic leading instinct. Thus there was a perfect harmony in the behavioral pattern of all the leader sheep tested. It can be concluded that this first experimental evidence has substantiated previous knowledge of the unique characteristics attributed to Icelandic leader sheep.

## Leadersheep film:

Part 1 (8 min): <http://www.youtube.com/watch?v=67eiH9jYQtA>

Part 2 (9 min): <http://www.youtube.com/watch?v=mYIKUZjrcXU>





- Leadersheep – a unique strain within the North European short-tailed Iceland breed
- Leadersheep are kept in 400 out of 2200 sheep flocks in Iceland, normally a few in each flock
- The total number is 1500 head out of the national sheep population of 480.000 breeding sheep
- Leadersheep walk in front of the flock, even in bad weather. Outstanding behavioural abilities and intelligence
- Leading characteristics are strongly inherited, not linked to sex, age, colour and other external traits. Mainly non-white and horned
- Conservation mainly based on individual recording and AI
- Standardized trials in 5 flocks where leadersheep are kept. 4 trials in October and 1 in November 2007
- A total of 15 leadersheep were tested, including 13 ewes, 1 ewe lamb and 1 ram, 2 – 5 in each flock
- Each leadersheep was tested with a group of 5 numbered „ordinary“ sheep driven 210 – 400 m from and to sheep houses on respective farms. The leadersheep had the number 1 in all the trials
- All test runs were carried out twice in each flock with an interval of 1.0 – 2.5 hours
- The test groups, 1 leadersheep + 5 „ordinary“ sheep, the same on each farm, were driven from and to respective sheep houses by 1 – 4 persons from each farm and thus known to the sheep, without the use of dogs
- The same two external observers recorded behavioural events in all the trials, 4 recordings in each test. The observers were located 50 – 200 m from the turning – points of the sheep
- A total of 120 group recordings were documented



## Conclusions

The results of repeated tests in five flocks were unequivocal in demonstrating the clearly pronounced and intrinsic leading instinct in the unique Icelandic leadersheep

This first experimental evidence has substantiated previous knowledge and observations

The leadersheep characteristics may have welfare implications, for example, in facilitating flock management and herding under extensive pastoral conditions, and their alertness may help to protect flocks against predators.



by Ralph J. Rice

Steam rises from the straw like an eerie fog, and in this golden bed a lamb stirs, his wool still wet and streaked with the blood of birth. His momma inspects him and starts the job of cleaning him up, licking and encouraging her new baby. The soft light of my lantern illuminates this miracle of birth.

While other expectant ewes look on I tend to the mother and her baby, and help dry the little one with an old towel. The little lamb bleats softly to his mother. She answers half-heartedly, already busy birthing the youngster's twin.

The second baby tumbles into our world steaming and wiggling. Momma rises and licks this new little girl. She goes from one baby to the other, cleaning and fussing.

Tiredness racks my body as I watch this little family get acquainted. The little ones are on their feet, their tiny tails wagging as they eagerly fill their bellies with milk. Taking the lantern in hand I raise it high to check on the other sheep. For now all is quiet.

Biting wind nips my ears as I head for the house, a warm bed, and restful sleep. Like a mother's hug, the barn enfolds her animals for the night. They are content and warm sleeping in her matronly embrace.

The ewes and lambs spend these winter nights under a lean-to on the lee side of the barn. They eat, sleep, and give birth under her watchful gaze. Behind the barn, cattle lie quietly chewing their cud. Falling snow blankets their backs. Sheltered from wind by the barn, they wait for the warmth of the morning sun.

The rooster crows, signaling to all in the barnyard that daylight and breakfast will soon be here. Sunlight streaks across the eastern sky as the animals start to stir. Hearing the rooster's muffled

crow, I wake from my slumber. I dress and shuffle through the snow to the barn, where I am greeted by the sights, sounds, and smells of my animal friends.

Sleepily I feed my hungry charges while the mother sheep feed their frisky babies. The nappy-coated youngsters greedily butt their mother's teats as they enjoy their breakfast. The cattle rise, stretch, shake the snowy blankets from their backs, and wait by the feed bunk. I fill the bunk feeder and hayrack with sweet smelling hay from the barn's loft. The hay and straw stored here are fresh and dry. The barn's roof stretches over the animal's stores like a mother hen's wings, protecting and warming her chicks. The quiet peacefulness of the loft makes a nice place for kittens to be born. The mother cat hides her babies, knowing they will be safe and protected from the wet and cold in this upper story.

Peacefulness comes over me as I recall, in my youth, putting up loose hay with my grandparents in their old barn. The work was hot and hard, but fun as well. We shared our love of family, along with dishes of cold homemade raspberry ice cream. Thinking of my teenage years on the farm brings a smile to my face. I recall first kisses shared in a hayloft such as this. I think of the special times, the births and deaths witnessed in barns such as mine. I take comfort in my stubbornness to let go of the past.

Descending the ladder from the loft, I am gripped by a cold sadness as I think about the many old barns dilapidated and forgotten, their lifeless hulking forms dotting the fading countryside. The ravenous appetite of urban sprawl eats up not only farms and forests, but also a lifestyle—an unstoppable monster paving over pastures and leaving only remnants of these grand old maidens rotting on their sills. Once the center of the family farm, the very heartbeat of a lifestyle, these matrons~that once held animals, laughter, hopes, and dreams in their motherly embrace~are disappearing at an alarming rate.

Continued on pg. 32



The draft horses peer over their shoulders at me. They enjoy the comfort this barn provides. Their stalls are roomy, well bedded, and clean. They look majestic, quietly waiting for the rest of their breakfast.

A glimmer of hope stirs in my soul. I see a light on a dim horizon as a new generation of farmers comes on the scene, seeking peace and tranquility. They long for the community spirit and core family group that once was common on the American farm. They come from all walks of life but share a common goal. They want to live and die in the shadow of a barn.

They want to raise children, animals, crops, and occasionally a little Cain on 40 acres with a sow, a cow, and a team of horses. Each one wants to stand in the barn and listen to the sweet music of the chewing animals, suckling baby lambs, and mewing of newly born kittens.

In a secluded corner of the barnyard another ewe prepares to give birth. She makes a nest in the golden straw as her soon-to-be-born youngster seeks the light of day. Before long a wiggling, steaming ewe baby lies in the barn's safe bosom, while her mother licks her clean. Along with me this grand old lady of a barn looks on. I can almost see her smiling as she proudly protects her animal charges from sun and rain, cold and snow, fair weather and foul, while she celebrates life, mourns deaths, and nurtures us all.

Ralph Rice of Riceland Meadows writes the column "Reflections" that appears regularly in *Rural Heritage*. This column appeared in the Winter 2003 issue. Reprinted with the author's permission. Follow his blog at [www.ricelandmeadows.wordpress.com](http://www.ricelandmeadows.wordpress.com).




**Linger Fold**  
 Rosemary & Kenn Brown  
 Western Colorado  
 970.942.7009  
[lingerfold.com](http://lingerfold.com)



**KIND HORN FARM**

**CERTIFIED ORGANIC ICELANDIC SHEEP**

Kathy Boyden  
 1920 Dowsville Road  
 So. Duxbury, VT 05660

(802) 244-5679  
[kathy@kindhornfarm.com](mailto:kathy@kindhornfarm.com)  
[www.KindHornFarm.com](http://www.KindHornFarm.com)

**Sunrise Sheep & Wool**

Dave & Judy Nelson      Leadersheep Genetics



38286 Kost-Trail  
 Sunrise, MN 55056  
 (651) 674-5920

[www.sunrisesheep.com](http://www.sunrisesheep.com)

Pure-Bred Icelandic Rams & Ewes      Fleece/Roving

**MORNING STAR MEADOWS FARM**

DRS. ROY AND ROBIN KERLIN, VETERINARIANS  
 307 WYASSUP ROAD  
 NORTH STONINGTON, CT 06359  
 (860) 535-9960




Registered Icelandic Sheep  
 Jager Farm Bloodlines  
 Certified Scrapie Free  
 Breeding Stock, Wool, Yarn, Pelts, Meat  
 Email: [morningstarmeadows.att.net](mailto:morningstarmeadows.att.net)  
 Website: <http://www.morningstarmeadows.posterous.com>

Overview:

## Seven Trace Elements In Icelandic Forage

Their Value In Animal Health And With Special Relation To Scrapie

From the Archives

---

Following is an excerpt from an article that was published in the Icelandic Agricultural Sciences (IAS) journal Volume 20, 2007. The article is titled "**Overview: Seven trace elements in Icelandic forage. Their value in animal health and with special relation to scrapie**". Don't let scrapie by itself distract you as not applicable! The article discusses the role of Manganese, as well as other important trace-elements, as a foundation for good health in sheep and... therefore lack of scrapie. In my opinion, the general take-away from the article is that the presence of trace-elements in the right balance is critical to maintaining health. In addition, I thought the article's findings regarding Manganese quite poignant. Selenium, copper, and cobalt seems to be a frequent, and correctly so, topic of conversation between Icelandic sheep owners. But Manganese is not as often at the center of trace-elements discussions. Also, it's nice to learn in what concentrations are these important elements found in our sheep's land of origin. The excerpt I have included consists of the abstract. The whole article is worth the reading if you have an interest in trace-elements and their effects on plants (feed) and animals. You can find the entire article at: [http://www.landbunadur.is/landbunadur/wgsamvef.nsf/8bbba2777ac88c4000256a89000a2ddb/053fc9d9cc3d4098002573d3003b51c4/\\$FILE/Overview.pdf](http://www.landbunadur.is/landbunadur/wgsamvef.nsf/8bbba2777ac88c4000256a89000a2ddb/053fc9d9cc3d4098002573d3003b51c4/$FILE/Overview.pdf).

Cited with permission by Dr. Þorsteinn Guðmundsson, Editor IAS.

Vanessa Riva, Historian

---

The dividing line between trace elements (microelements) and macroelements is tentatively defined, as well as the so-called critical amounts or concentrations of the trace elements.

This review is mainly based on analyses of Mn, Cu, Mo, Se, Co, Zn and Fe in samples of forage in Iceland from the summer harvests in 2001-2003, mostly of grass silage (30-70% dry matter). The forage samples were taken on farms in various scrapie categories. Notes are given on the occurrence of the seven trace elements in Icelandic rock and soils, as well as on their mechanisms of action and essentiality and toxicity in humans. The results of Co and Zn analyses have not been published before. The results are discussed in terms of essentiality and toxicity to plants and domestic animals, especially cattle and sheep, and with special relation to the occurrence of clinical scrapie in Iceland.

The main results were as follows. Manganese concentrations in feed varied more than tenfold (40-550 mg kg<sup>-1</sup>). Cases of Mn deficiency in cattle, sheep or poultry are not known to occur in Iceland. The mean Mn concentration was significantly higher in samples from scrapie-free farms than from scrapie-prone or scrapie afflicted farms.

- *Copper* concentrations varied fourfold (4-16 mg kg<sup>-1</sup>). There is no evidence of Cu deficiency in plants or sheep in Iceland at the present time. The mean Cu concentration was statistically the same in samples from farms in all scrapie categories. The Mn/Cu ratio was found to be significantly higher in samples from scrapie-free farms than from scrapie-afflicted farms.

- *Molybdenum* concentrations varied enormously (0.0043-2.37 mg kg<sup>-1</sup>) and the Cu/Mo ratio was always in excess of 4. The Mo amounts available may be insufficient for the cultivation of certain plants and the Mo concentrations in forage of sheep were usually in the low normal range. The Mo concentrations did not differ significantly between farms in the various scrapie categories.

- *Selenium* concentrations varied about fifteenfold (6-96 µg kg<sup>-1</sup>). Symptoms of Se deficiency (white muscle disease) occur ubiquitously in lambs, and to some extent in heifers and foals, in spite of prophylactic use of injections of selenite and tocopherol (vitamin E). When the ewes are rounded up and gathered from the highlands in the autumn the Se levels in blood are sufficient but border on deficiency when they are in the pregnant state in the following spring after they have been kept in sheds for months and fed on forage from the cultivated home fields. The mean values did not differ significantly between farms in the various scrapie categories.





• *Cobalt* concentrations varied fiftyfold (41-2010  $\mu\text{g kg}^{-1}$ ). In about 12% of the samples the Co concentration was less than 100  $\mu\text{g kg}^{-1}$ . The mean concentrations did not differ significantly between farms in the various categories.

• *Zinc* concentrations were in the range of 14-85 mg kg<sup>-1</sup>. In only a few samples (7%) did the Zn concentration exceed 50 mg kg<sup>-1</sup>, indicating that the Zn load in sheep might be rather low. A symptom of Zn deficiency, parakeratosis in cattle and sheep, has been observed a few times in Iceland. The mean Zn concentration was significantly higher in forage samples from scrapie-free farms in scrapie-free areas than in samples from farms in the other categories.

• *Iron* concentrations varied almost twenty-fivefold (57-1379 mg kg<sup>-1</sup>). The mean Fe concentration in samples from scrapie-free and scrapie-prone farms was significantly lower than in scrapie-afflicted farms where it was in excess of 300 mg kg<sup>-1</sup>. The high Fe concentration in samples from scrapie-afflicted farms bordered on toxic levels for iron in plants and was reciprocated in the low Mn concentration found in samples from these farms.

It was concluded from this research that: 1) the low levels of Se in the forage should be amended by general measures, e.g. by use of Se fertilizers; 2) the levels of Mo, Co and Zn in forage of sheep may on occasion be too low and the same might also apply to Mn and Mo for the cultivation of certain plants; 3) the Cu status of plants and sheep is considered sufficient; 4) the highest amounts of Fe in forage samples from scrapie-afflicted farms may border on toxic levels for plants; 5) the Fe concentration was lowest in forage from scrapie-free farms whereas the opposite was the case for Mn (and to some extent for Zn); 6) high Mn concentration in forage from scrapie-free farms may indicate a protective impact on the occurrence of clinical scrapie; 7) high Fe concentration in forage from scrapie-afflicted farms may, due to suppression of Mn, be provocative of the disease; 8) detailed studies on Fe and Mn (and preferably aligned with studies on Cu and Zn) in the soil and forage on sheep farms might contribute towards a better understanding of why scrapie is repeatedly found on certain sheep farms but not on other farms, even not on those in close proximity to the afflicted farms.

#### REFERENCES

Jóhannesson, T., Eiríksson, T., Björg Gudmundsdóttir, K., Sigurdarson, S., & Kristinsson, J. (2007). Overview: Seven trace elements in Icelandic forage. Their value in animal health and with special relation to scrapie. *Icelandic Agricultural Sciences (IAS)*, 20.

Vanessa Riva, our historian writes about her farm:

Stark Hollow Farm is a small farm producing healthy, sustainable farm products from animals whose quality of life is our passion. We raise registered pure bred Icelandic sheep, registered pure bred Tamworth pigs, and heritage breed layer chicks in Danville, Vermont. We place an emphasis on the conservation and symbiotic aspects of agroecology, raising heritage and primitive breed animals in synch with nature and focusing on animal welfare rather than high production.



## THE COLORS AND PATTERNS OF THE ICELANDIC SHEEP

Need an attractive addition to your walls? Need a great way to show customers the wonderful range of colors and patterns in the Icelandic Sheep? ISBONA has just the thing for you, direct from Iceland: **The Icelandic Breed of Sheep**. This is a very high quality, very thick poster with a gloss finish, which can be seen in greater detail at Shop Icelandic:

<http://tinyurl.com/m3ey5mv>

Price: \$30 plus shipping. Please contact Connie Millard for shipping cost.

Email: [dutchdog@eightpondfarm.com](mailto:dutchdog@eightpondfarm.com)

# NATIVE SHEEP *and* WOOL CONFERENCE IN ICELAND

by Jane Hutchins

---

September's "North Atlantic Native Sheep and Wool Conference," held in Blonduos, Iceland, attracted more than eighty participants interested in primitive sheep breeds and their wool. Many came from the Nordic and northern countries, with Australia and South Africa represented as well.

The local organizing committee created a five day program of lectures, tours, and visits that introduced the range of northern sheep breeds as well as sheep management in Iceland. Presenters from Norway; Iceland; Greenland; the Shetland, Faeroe, and Orkney Islands; the Isle of Man; Germany; and the United States spoke in the formal sessions. Several lectures addressed wool and processing—felting, home processing, and the history of weaving—while others concerned sheep management in northern climates and color genetics. One of the highlights of the trip was the opportunity to see part of the annual roundup of Iceland's one million sheep, when the sheep are gathered from the inland ranges of each district and herded by horsemen and -women to local gathering places. The first weekend sees mobs of about 15,000 sheep brought to circular pens in different districts. Each sheep has a colored, numbered tag that identifies its district and owner, as well as the more traditional notched ear. Families move their own sheep from the mob into a pen and truck them home. To prevent the spread of disease between districts, any animal with a tag from another district is slaughtered.

Stragglers are rounded up the following weekend, and after that, a plane and spotter go up to make sure that all the sheep have been moved down to their home farms.

Slaughter animals are shipped almost immediately, unshorn. The conference toured the Blonduos slaughterhouse. Icelandic slaughterhouses are owned by the Farmers' Cooperative, and they slaughter sheep, horses, cows, and pigs, with seasons when each predominates. Triple decker trucks full of sheep move in and out of the loading area during September and October, and in the facility we visited, 2,000 to 2,500 sheep were slaughtered every day. One hundred employees—including three veterinarians—work there during the peak season, with a year-round staff of forty. Brain and spinal material are taken to special depots and burned. The rest of the animal is sorted in the facility: horns for buttons, pelts for tanning, meat scraps for headcheese. The cost of slaughtering and butchering a sheep is about US \$30 per animal. Farmers may store their meat in the freezers, taking it home to consume or sell at their convenience.

The efficiency and thrift of the slaughterhouse was mirrored at the family-owned tannery, where pelts from Icelandic animals and fish are processed. Sheepskins and horse skins were widely available as skins, garments and furnishings. Fish skin, tanned and dyed, is used in shoes and accessories.

Shearing takes place in March and again in November, with the country's wool washed in Blonduos at a facility owned by the Farmers' Cooperative. The work here is seasonal, and had not started at the time of the conference. We did visit the Cooperative's spinning mill, Istex, outside of Reykjavik. The equipment there is designed to handle fibre that is up to 10 " (25 cm) long, and we saw the washed, unseparated fleece dyed and spun into Lopeya yarn, the pencil roving for which Iceland is famous. These lofty, lightly twisted rovings are paired and knit into the famous Icelandic sweaters we know as Lopi.

A side trip to the Agricultural University of Iceland included a presentation by the botanist responsible for the naturally dyed Hespera yarns. In the gift shop of the Wool Centre located there we found yarn, knitted goods, fleece, buttons, and more unusual items, such as key chains on a hoof and buttons made of small bones that had been dyed and drilled. There was a concert in the old dairy barn, and we met the three women who knit the colorful covers for a ram's horns as a promotion for a local knitting circle: [https://www.facebook.com/westiceiland/photos/a.52262226777176.1073741833.490193807686689/616703535035715/?type=1&relevant\\_count=1](https://www.facebook.com/westiceiland/photos/a.52262226777176.1073741833.490193807686689/616703535035715/?type=1&relevant_count=1)



The Icelandic hospitality was varied and generous. We toured museums and churches, stitched on a Bayeux Tapestry-inspired embroidery of the history of the Vatnsdalur Valley south of Blunduos, danced at a party after a roundup, and enjoyed meals ranging from a specially prepared Viking feast to an afternoon tea of traditional Icelandic pastries.

The opportunity to leave the tourists and talk to farmers was exceptional. Their familiarity with a breed that has been raised locally for a millennium is enviable, and we were grateful for the chance to ask questions and compare observations. A summary of the conference may be found at <http://textilsetur.com/2014/03/11/4th-north-atlantic-native-sheep-and-wool-conference/>. The 5<sup>th</sup> North Atlantic Native Sheep and Wool Conference will take place next September in the Faeroe Islands.

Olafur Dyrmondsson and Johanna Palmadottir, in addition to being part of the conference organizing committee, were kind enough to read this article.

*Jane Hutchins  
Tideview Farm*

*E. Sooke, BC*

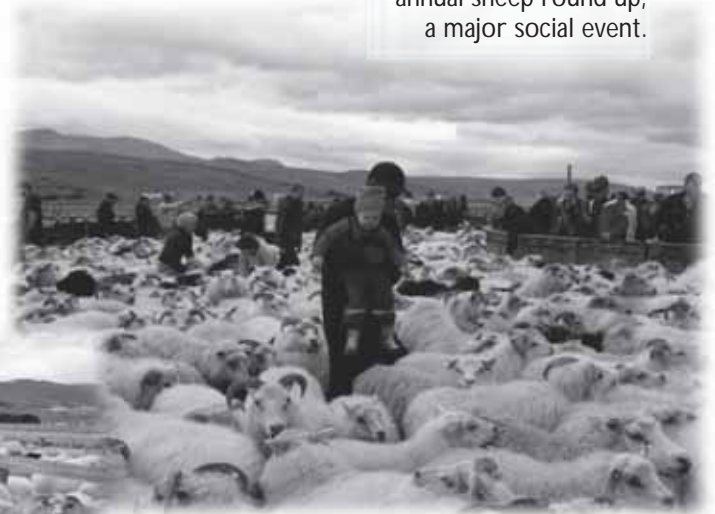
*[www/TideviewFarm.net](http://www.TideviewFarm.net)*

*Jane Hutchins and Robert Byers raise grass-fed registered Icelandic sheep on southern Vancouver Island, B. C. near Victoria. The farm, a rare piece of flat open ground with topsoil, has been farmed since the mid-19th century and currently carries Icelandic sheep, fruit trees, and mixed vegetables. The original flock of Icelandics came from Yeoman Farm, with new rams from Le Biscornu. Raising sheep has provided an unusual dimension to Jane's professional interest—as a textile conservator and fibre scientist—in wool*



At least one person from each farm is required to help at the annual sheep roundup, and many families included three generations.

All ages participate in the annual sheep round up, a major social event.



Some of one farm's sheep, sorted at the Vatnsdalur round up. Approximately 30% of Iceland's sheep are white, 30% black or black and white, 30% grey, and 10% moorit.



Icelandic Sheep  
We are like a  
SNOWFLAKE  
All different in  
their own  
beautiful way.

