



# ISBONA NEWSLETTER

Icelandic Sheep Breeders of North America

Fall 2013 Volume 17 Issue 4



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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!

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*Cover photo by Roger Twitchell and Ellyn Hutson, Caney Branch Farm*  
[www.caneybranch.com](http://www.caneybranch.com)

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.



## ***From the President***

Good day to you all, ISBONA members.

I always enjoy the late fall and early winter. The hay is baled and (mostly) gathered in; harvest is complete and grain bins are bursting; fat cows and healthy calves are coming off of late pasture; and in the sheep yard fat lambs reward us for the hard spring and summer that came before.

If it weren't for the off-farm job, I would spend my days waiting for the snow to fly and the rhythm of chores - pot o' tea - chores - dinner to set in.

But, like most of you, I find I've plenty to keep me busy even at this time of year.

Between haying, harvest, teaching, and helping raise a wee laddie, I've spent the past few months learning the ropes as your acting President. And believe me, there's a lot to learn. Names to remember; positions to memorize; past, present, and future issues to understand. There are geographic and time-zone issues to overcome and the great challenge of communicating through email without insult or misunderstanding.

Luckily for me, I get to work with ISBONA and ISBONA board members who are more than willing to help out, give advice, and tackle the challenges that face us.

And we certainly face many challenges. Of current importance to the Board is the challenge of ensuring that we represent and serve you, the members, to the best of our ability. To that end we are establishing more effective communication to ensure we

address the concerns that are brought to us in a timely and effective manner.

But there are other challenges as well. The challenge of promoting the breed comes to mind. ISBONA members understand the rewards of keeping Icelandics, but we often waste our energy talking about this amongst ourselves instead of spreading the word. In my opinion, every hillside deserves its own flock of Icelandic sheep, and I'm sure you agree. As an association we must do a better job of advertising our breed.

Another challenge that comes to mind is ensuring that information provided to members is timely and relevant. We must provide information that helps breeders throughout North America find continued success and enjoyment with their flocks. Too often we find our conversations dominated by a small number of topics of concern to some, but not all, association members. As acting president, I hope to fix that, and I hope you'll help me achieve this goal.

This is where I need your help. ISBONA members: get involved. If you see information that needs to be communicated or have knowledge to share, contact our Newsletter Editor and submit an article. If you have thoughts about how to promote the breed or ideas about how to better serve members, contact a board member so it can be brought to our attention and properly discussed.

I am excited to work with all of you to help our association move forward. May the coming months find you well amongst your friends, family, and flocks.

Kind Regards,  
*Stuart Somerville*

### **BACK BY POPULAR DEMAND!**

**FREE BUSINESS CARD SIZE ADS IN THE  
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**SEND JPG, PDF OR PUBLISHER FILES TO  
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**3.5" x 2"**

**If you need help creating your ad, please email Elaine at the address above.**



**PARASITES!** This is a troubling word for most sheep people. How do we protect our flocks from becoming overburdened by them? Here, on our certified organic farm, we employ many different strategies. Recently, I received my quarterly newsletter from Agri-Dynamics, a leader in natural healthcare products and mineral supplements for livestock. The cover article just happened to be titled "Parasites-Uninvited Dinner Guests". It is a very good article by Jerry Brunetti, the founder of Agri-Dynamics. As I read through the article, I began thinking that the IS-BONA members would benefit from seeing the article. I called Jerry to ask him if we could reprint the article and he was very agreeable. I have successfully used many of Jerry's products, including ACV, Aqua-Nox, PC Premix, Vermi-tox and Neema-tox, Ectophyte and Desert Dynamine plus several other of his products that aren't mentioned in the article. I would highly recommend Jerry's products. Visit the Agri-Dynamics website to learn more about the company and for more information on the complete line of products. Jerry also hosts a monthly conference call on a variety of topics. The upcoming schedule is printed here, below the parasite article. In addition, Jerry and I recently had a long conversation about developing a sheep specific mineral, so he is about to set to work on that and we can look forward to that in the near future!

From Kathy Taft Boyden, Kind Horn Farm

## PARASITES—UNINVITED DINNER GUESTS

Internal parasites are part and parcel of the animals ecosystem, or its "body ecology." Wild ungulates are continually moving, leaving their parasite loads behind where they desiccate in the sun or just plain run out of nourishment before the animals return to the pasture. However, animals that are subjected to pasture or loafing areas without adequate rest, will build up parasite loads, especially on humid landscapes, where moisture and temperature are conducive to their growth and reproductive cycles. Young animals and those with weakened immune systems are most vulnerable, and this includes pregnant and lactating animals. Never allow your stock with parasite challenges to become underweight.

The first and most important component in parasite management is "landscape management" by employing sound rotation practices. This includes not only the adequate amount of time for the rest period between rotational grazing, but also grazing height management. Most worm larvae crawl up the plant only one to two inches from the ground. Thus, allowing livestock to graze pastures too short increases the numbers of parasite larvae that they ingest. The wetter the weather, the higher the larvae will climb. Larvae also seldom migrate more than 12 inches from a manure pat. If one is mob grazing it's therefore important to recognize that more manure pats are deposited in a given area, thus the proper plant height and adequate animal movement over time is essential to minimize parasitical larvae ingestion.

Biodiverse pastures populated with plants rich in "plant secondary metabolites" (PSM's) is a must. One of the PSM's that is a natural "wormer" found in many species is tannins. Plants like chicory, birdsfoot Some Band-aids to the Rescue

Fortunately there are practices and products that can contribute to the "systems approach" needed to keep the farm or ranch parasite-free (at least clinically).

1. Apple Cider Vinegar (ACV) or acetic acid: is a great tonifyer because a healthy rumen which ferments fiber produces adequate amounts of it to provide fast acting energy, and healthy pH in the G.I. tract and lymphatic fluids. One cup of 50-60 grain (5%-6% acidity) to 20 gallons of drinking water is a good ratio. Or, if using fresh drinking water, put out a 50/50 mix of 50-60 grain ACV with water as a free choice supplement. (Organically acceptable).



2. Aqua-Nox Stock Saver™: As a prevention, a mere one ounce in 100 gallons of water can really help, not only with parasites, but G.I. tract integrity as a whole. If livestock are compromised, two to four ounces per 100 gallons of water is in order. To treat individual animals, one teaspoon to 60 cc (2 oz) per 150 lbs of body weight of water in a large syringe and drench daily for several days. (Organically acceptable).
3. PC Pre-Mix™: is a high copper, sulfur and herbal mix that can be put out free choice for livestock. However, always insure that livestock have other complete pre-mixes in their diet included as a free choice option. Additionally, if supplying as a free choice to sheep, cut PC Premix™ 50/50 with salt while insuring they have loose salt by itself and free choice minerals. (Organically acceptable).
4. Grazier's Essentials™ are comprehensive pre-mix formulas that can be provided free choice or force fed as per nutritional recommendations. Balanced macro elements (Ca, P, Mg, S, Si) and trace elements (B, Zn, Cu, Co, Mn, Se, I, Cr, Vn Ni) are rounded out with Dyna-Min™, kelp, pre-biotics, probiotics, enzymes and fat and water soluble vitamins. (Organically acceptable).
5. Native Lick™ and K-N-S (Kelp-Native Lick-Salt): Native Lick™ is a blend of 5 prehistoric sea bed minerals (including Dyna-Min™) and some producers found that blending 1/3rd salt, 1/3rd Native Lick™ and 1/3rd kelp does wonders for both worms and protozoic parasites like coccidiosis and cryptosporidia. (Organically acceptable).
6. Vermi-Tox™ and Neema-Tox™ are both drenches to treat afflicted animals with a) worm infestations; b) cocci/crypto and c) bacterial scours. Vermi-Tox™ can be used in all three challenges. Neema-Tox™ is used for cocci/crypto and bacterial challenges. (Organically acceptable).
7. Hydrogen Peroxide (35% H2O2 Technical/Food Grade): This has been utilized for overall herd health in Pennsylvania at least since the 1980's. Apparently 8 oz per 1,000 gallons of drinking water can help prevent outbreaks. Higher doses are needed for treating afflicted animals. (Organically acceptable).
8. Dyna-Min™: a mined colloidal clay minerals that is typically fed at 4 oz/head/day (1,000 lbs of body weight) as well as free choice. (Note: if animals are new to it, for some it may be a "novel" feed supplement- Mix 50/50 with salt to introduce it to "picky eaters" (Organically acceptable).
9. Nematode-Trapping Fungus (*Duddingtonia flagrans*): This fungal spore is fed to livestock and the fungus germinates in the dung, killing the critical Stage 3 larvae. Not yet commercially available. Stay tuned. (Organically acceptable?)
10. Basic H: a non-ionic surfactant (not organically approved) that is added to the sole source of drinking water at 1 cup of Basic-H to 100 gallons of water. Animals need to be confined to the water source for two days. Treatment is repeated 6 times yearly.
11. Diatomaceous Earth: is an 89% silica compound from the diatoms skeletons from fresh water deposits. It acts via dehydration of the parasites and should probably be force fed at 2-4 oz/head/day (1,000 lbs of body weight) as well as free choice.

NOTE: When implementing worming (drenching and supplemental) strategies, is it traditionally recognized to dose when the moon is "waxing", i.e. 3-5 days before the full moon.




The short note on these critters is that lice and mange tend to show up when:

1. Nutrition is inadequate leading to immunosuppression especially trace elements and fat soluble vitamins
2. Animals are crowded and/or too confined
3. Inadequate sunlight
4. Poor Genetics- more susceptibility

Follow the same "Back-to-Basics" ground rules written above. Try some of the same "Band-Aids" (especially Flies-Be-Gone™ Premix).

Utilize an effective organic "pesticide" like Ecto-Phyte™ to kill both mange and lice. Mix at one part Ecto-Phyte™ to four parts mineral oil (we like Pure Spray Green- it's organic and water soluble). Apply every 7-10 days to break the hatching cycle as the nits are protected in a thick lipid layered egg.

**Reprinted by permission of Agri-Dynamics, Jerry Brunetti.** [www.agri-dynamics.com](http://www.agri-dynamics.com)

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## Jerry Brunetti (Agri-Dynamics) Conference Calls

Our new conference call line which is dedicated to Agri-Dynamics conference calls only is: 610-200-5367. There is no need to enter a conference id. You will be connected directly into our conference call line. You will still need to use \*6 to mute or unmute yourself (please only unmute yourself to ask a question to reduce the echo on the line) and \*5 to raise your hand to ask a question.

All calls start at 7:30pm EST

April 29th Funny Protein, BUN's and MUN's = Health & Production Failures

May 27th Grazing for the Long Haul: Creating High Octane Forages

June 24th Flies-Be-Gone - Tools and Tactics

July 29th Water, water, water: Quality & Quantity

August 26th Soil Biology: The Ultimate Buffer

September 30th Parasites: Worms, Lice & Mange

October 28th Dyna-Min: The normalizer of MUN, Acidosis, Mold & Mycotoxins

November 25th Kelp, Native Lick & Aqua Nox: Why they work

December 30th Macro and Micro Elements Revisited

**Missed a conference call? Download the recording by clicking on the Health & Education banner and drop down to Conference Calls!**

**(Ed. Note: most of these call dates have already passed, but recordings are available from the website: [www.agri-dynamics.com](http://www.agri-dynamics.com) )**



## Surnames from Sheep

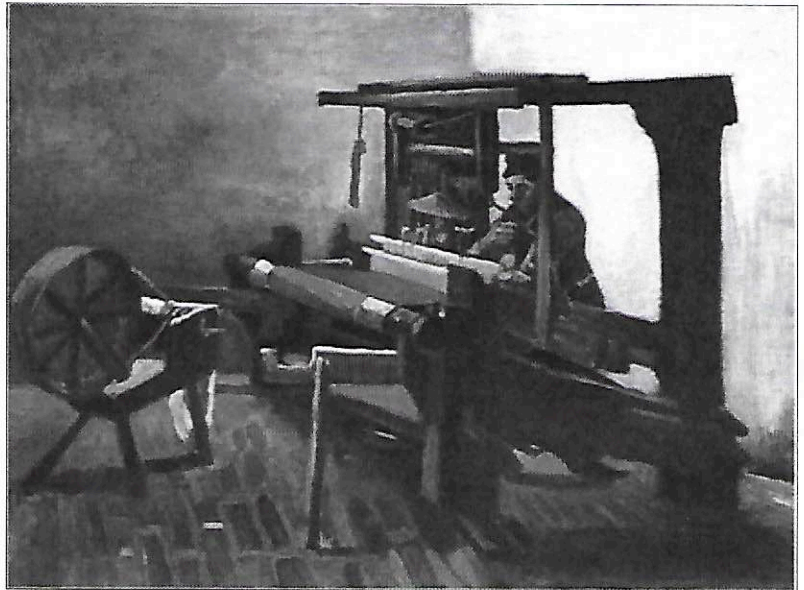
by *Thomas W. King*

This begins our fifth year with our fiber flock of registered Icelandic sheep. A pleasant madness, indeed. We reflect on how much we have learned from them, and from the kind, smart, creative people we have met because of our sheep.

One of the curiosities we have noticed is the number of last names in our western culture that may directly or indirectly derive from sheep and wool. My goal here was to quickly list ten such sheep-based surnames. I came up with 18, presenting them in random order below.

See what you think. Are there others?

Let me know what you find out. I will compile them for a future ISBONA issue. Please email me at [RunHikeSkiNow@gmail.com](mailto:RunHikeSkiNow@gmail.com)



1. **Weaver, Weever**
2. **Shepherd, Shepperd, Shepard, Shephard, Sheperd**
3. **Spinner**
4. **Spinster (female spinner)**
5. **Shearer, Sheerer**
6. **Lamb (Lambe, Lambert)**
7. **Wool**
8. **Woolworth**
9. **Woolsey, Wolsey**
10. **Horner**
11. **Hoover**
12. **Skinner**
13. **Tanner**
14. **Farmer**
15. **Muttoone**
16. **Loomis**
17. **Webster (female weaver)**
18. **Currier (dressed hide or leather after tanning)**
19. **More?.**

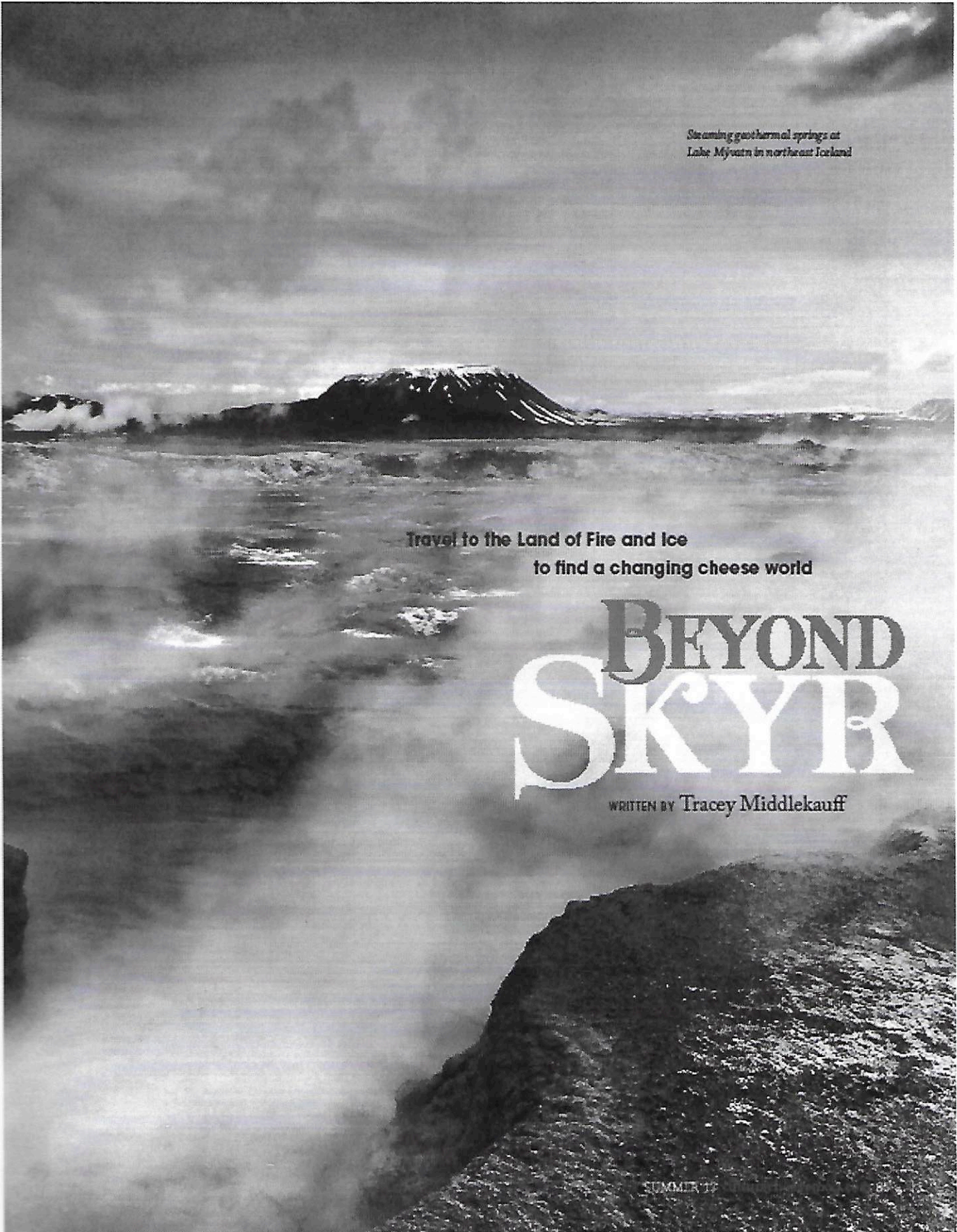
*Thomas W. King  
Sunny Cove Registered Icelandic Sheep  
Douglas County, Wisconsin*

*Thomas and Debra King tend a hardy fiber flock of registered Icelandic sheep at Sunny Cove, their primitive northern farm in rural Douglas County, Wisconsin, overlooking western bays and harbors of Lake Superior*



*Reprinted with permission from Culture: the word on cheese (2013); [culturecheesemag.com](http://culturecheesemag.com)*





Steaming geothermal springs at  
Lake Myvatn in northeast Iceland

Travel to the Land of Fire and Ice  
to find a changing cheese world

# BEYOND SKYR

WRITTEN BY Tracey Middlekauff

SUMMER '13



THIS PAGE: Eirny Sigurdardóttir in her cheese shop, Búrið, in downtown Reykjavik; OPPOSITE PAGE: Ljotur cheese from MS Iceland

*Iceland's dairy-mad population manages to consume more cheese, butter, and milk per capita than most Western cheese-loving nations, including the United States.*

I first met Icelandic curd connoisseur Eirny Sigurdardóttir on an intensely blustery afternoon in her cozy cheese shop, Búrið, located in a small shopping center just off a main drag in downtown Reykjavik. Though a native Icelander, Sigurdardóttir spent her formative years in England and Edinburgh, as evidenced by her lilting Scottish burble, punctuated every so often with a colorful British colloquialism. While living in Edinburgh, Sigurdardóttir ran a catering company and taught students about cheese at the School of Food and Wine. "I got a reputation for always serving my customers the best cheeses," she says. But after 17 years abroad Sigurdardóttir returned to her native Iceland and in 2008 opened Búrið.



I had come to the shop at her invitation to attend a regular Friday *míni* market, a gathering of a handful of regional farmers and producers. Along with tasting free-range pork, smoked lamb, and grass-fed beef, Sigurdardóttir had predicted that on that day “we will be in a Raclette mood.”

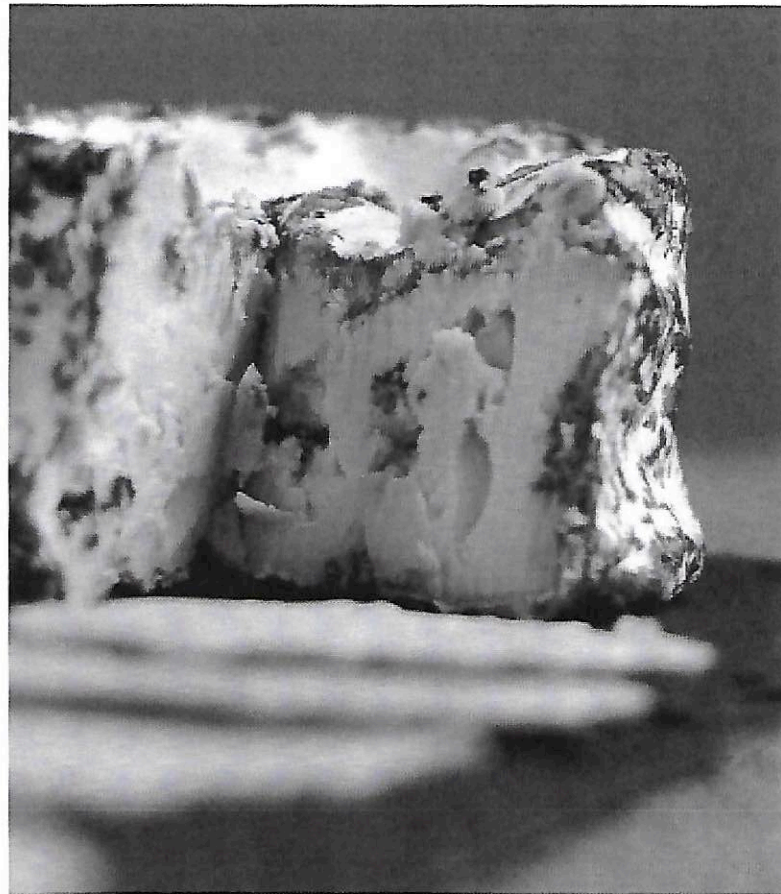
Unfortunately, that mood was never to be confirmed. An unseasonably intense, yet typically fickle, Icelandic storm—with winds so fierce that salt from the sea was flung violently throughout the city, finding its way into eyes and mouths and onto shop windows, where it would stick for days—prevented the producers from making the drive into Reykjavik, so the market was canceled.

By way of apology, Sigurdardóttir showered me with an assortment of Icelandic cheeses to take back to my hotel: *Ísbúi*, a washed-rind cow’s milk cheese; a black-rind Gouda; and a deep-veined Danish-style blue. To complete my Icelandic cheese tasting, she also tasked me with picking up three white bloomy-rinded, soft-ripened supermarket cheeses: *Stóri Dimon*, *Gulloster*, and *Kastali*. Then she proposed we meet for a late dinner at the popular restaurant *Grillmarkaðurinn* (Grill Market), to discuss my tasting notes and where, Sigurdardóttir promised, “I will attempt to explain the strange thing that is the Icelandic cheese industry.”

## Controlling Curd

Iceland is home to roughly 300,000 people, yet the dairy-mad population manages to consume more cheese, butter, and milk per capita than most Western cheese-loving nations, including the United States. And the lion’s share of that product comes from one company: MŚ Iceland Dairies, which holds a whopping 97 percent of the country’s dairy market share. A cooperative monopoly, MŚ Iceland is owned by the nation’s 700-odd dairy farmers; each hands over a predetermined quota of milk each year to be turned into consumer product.

To a large extent MŚ Iceland has shaped the cheese tastes of the nation. In the 1950s the outfit looked to the United States and fermentation methods for its cheesemaking model and set about convincing its customers to eat the resulting bland cheeses with nearly every meal. And it worked: A mild Gouda



type, known as “family cheese,” remains the company’s biggest seller.

Until the 1980s many foreign cheeses were banned from importation, so mild cheese became the norm, an odd development when one considers that Icelanders’ Viking ancestors once subsisted on the likes of pungent fermented shark.

Once the ban on foreign cheese was lifted, people gradually became acquainted with more complex cheeses, such as Brie, blues, and cheddars. A recent MŚ Iceland rebranding campaign is both a response to evolving tastes and an effort to help foster an interest in the wider world of cheese. Case in point: *Ljotur*, “the Ugly One,” is an aptly named pungent blue with such an off-putting appearance

that, according to MŚ Iceland marketing manager Guðný Steinsdóttir, people are often afraid to taste it during in-store demonstrations.

MŚ Iceland has also helped make *slyr*, an iconic Icelandic dairy product mentioned in Viking sagas from the year 1000, into a popular convenience food. Low in fat and high in protein, it has the consistency of a Greek yogurt, though it’s technically cheese. Until recently, eating it straight out of the container was not an option.

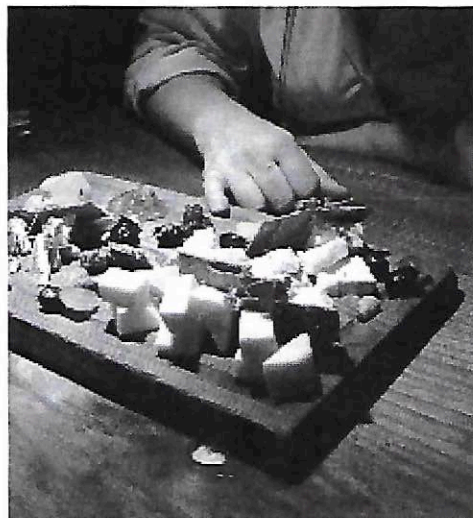
“It was inedible in the old days,” Sigurdardóttir recalls. “It was a solid mass, and when I was a kid, you had to mix in cream and sugar and, if you were really lucky, blueberries.”

Today tubs of fruit-flavored MŚ Iceland



“For such a small country . . . we have an amazing quality of raw materials to work with, especially the milk from our Viking cows.”

**THIS PAGE, CLOCKWISE FROM TOP RIGHT:** A bowl of skyr, served here with peaches; Skeyr Konfekt, the skyr-filled candy, shaped like a cow's teat; Firny Sigurdardóttir describes the cheese plate at Grillmarkaðurinn (Grill Market); **OPPOSITE PAGE:** Smálar-sauðfe, the native Icelandic sheep, generally raised for meat rather than dairy, were originally brought to Iceland by the Vikings.



skyr are available in any supermarket; many Icelanders eat it for a quick lunch. Skyr also shows up in a number of imaginative ways in restaurants around town, particularly in desserts and cheesecakes.

### Taste of Independence

MS Iceland cooperative farmers are free to do what they like with their surplus milk, but strict industry regulations make it tough for small producers to make and sell their own product. In fact, as of this writing, two of the five independent dairy producers in Iceland had ceased operations.

The three remaining independent producers include Bio-bú, Iceland's only organic dairy; Fjóshomid (Cowshed Corner), in eastern Iceland, where summer visitors can purchase yogurt, feta cheese, beef, and what Sigurdardóttir calls “the best skyr in Iceland”; and Erpastadir Farm, about 90 miles north of Reykjavik.

“Small independent producers are challenged by the very strict regulations we have in Iceland,” says Erpastadir Farm's cheesemaker and farmer Þorgrímur Einar Guðbjartsson. “For example, we are not allowed to produce and sell

unpasteurized milk products. This makes it very difficult for small producers to make cheese because they cannot afford to buy a pasteurizer. [It's] quite sad.”

Guðbjartsson has managed to buck the trend, thanks in part to the variety and quality of his products. Along with ice cream and skyr, he makes a number of cheeses (which Sigurdardóttir stocks when available), including Framdi, a Camembert-style cow's milk cheese; his best-selling Kumenoster, a Gouda-style semisoft cheese that has a subtly sweet quality when young, thanks to the addition of wild cumin; and Galti, one of Sigurdardóttir's favorite Icelandic cheeses.

“It's a small bloomy-rind based on the French Chaource,” she says. “It is gorgeously runny near the rind, with a dense, chalky center. The flavors are buttery mushroom,

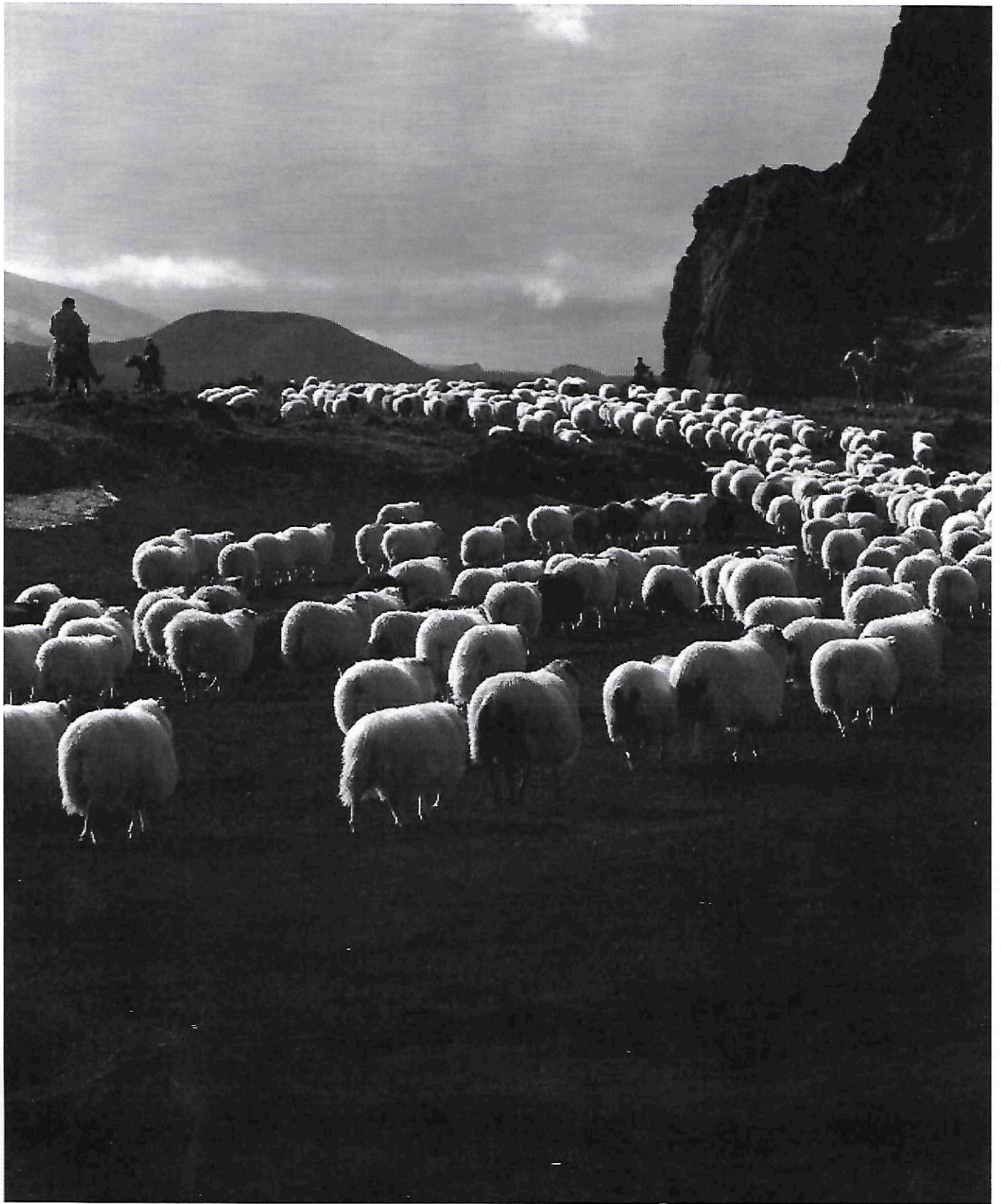
white pepper, and a slightly lemony yogurt tang Yum.”

Guðbjartsson also produces what is arguably one of the quirkiest dairy confections ever made: Skeyr Konfekt. Purposely shaped like a cow's teat, it is white-chocolate-covered skyr that tastes sweet and cheesecake-like. It's surprisingly good, given its novelty shape.



PHOTOS: THIS PAGE: CLAUDE COOPER; SKYR: SKYRDELICIOUS.COM; RIGHT: © RAGN TH. SIGURDARSON/WWW.ICING.COM







## Restaurants

### Bajarins Beztu Pylsur [btp.is](http://btp.is)

There's usually a line at this unassuming hot dog stand, and it's no wonder: the offerings make a cheap and tasty lunch or snack. Order a lamb dog with the works ("eina með öllu" in Icelandic): ketchup, sweet mustard, fried onion, raw onion, and remolaði, a mayonnaise-based sauce with sweet relish.

### Saegröfinn [saegröfinn.is](http://saegröfinn.is)

The "Sea Baron" has become a bit of a tourist draw since being featured in U.S. travel programs, but don't let that stop you from visiting. The lobster soup is everything it's cracked up to be: a buttery tomato broth flecked with bits of seaweed and loaded with juicy, tender chunks of fresh Icelandic lobster.



### Dill [dillrestaurant.is](http://dillrestaurant.is)

Chef Gunnar Karl Gíslason's New Nordic restaurant is an essential pilgrimage for the traveling gourmand. The seasonal menu is always inventive, featuring unique ingredients you won't find anywhere else, such as sea buckthorn, pine, and vintage angelica.



### Islenski Barinn [islenstikarinn.is](http://islenstikarinn.is)

This cozy spot specializes in traditional Icelandic comfort food. Standout dishes include hearty lamb stew, seafood stew with dark bread, and an unbelievably juicy lamb sandwich. Wash it all down with a Viking beer, natch.

## Hotels

### Snorri's Guesthouse [guesthousesreykjavik.com](http://guesthousesreykjavik.com)

Cozy, clean, affordable, and friendly, Snorri's is located a short walk from Reykjavik's main shopping street. Each morning, host Magnus sets out a complimentary traditional Icelandic breakfast of bread, fruit, ham, and, of course, cheese.

### Icelandair Hotel Reykjavik Marina [icelandairhotels.com/hotels/reykjavikmarina](http://icelandairhotels.com/hotels/reykjavikmarina)

The newest Icelandair Hotel location has more to offer than just an excellent position overlooking the docks. Slipbarinn, or Slipp Bar, boasts an extensive menu of innovative, well-balanced cocktails, a rarity in Reykjavik.

### Kex Hostel [kexhostel.is](http://kexhostel.is)

Forget what you think you know about dingy, depressing hostels. Kex, housed in an old biscuit factory in downtown Reykjavik, is lively and trendy. Along with dorm rooms, the facility features a café and bar, gym, guest kitchens, free WiFi, and a heated outdoor patio.

### Arnarhvöll [centrhotels.com/our-hotels/hotel-arnarhvoll](http://centrhotels.com/our-hotels/hotel-arnarhvoll)

Request a room on a high floor facing the water at this hidden gem. It's directly across from the Harpa Reykjavik Concert Hall and just a five-minute walk to downtown. Oh, and be sure to unwind after a long day of adventures in the hot soaking pool.



## A Table Tour

When I met Sigurdardóttir at Grillmarkaðurinn, we began the meal with a plate of rustic rye bread, coarse Icelandic black sea salt, and daffodil-yellow Icelandic butter, its deep hue a result of beta carotene in the grass ingested by free-roaming Viking cows. It's subtly sweet, and I was sure that I could taste a hint of the fresh Icelandic grass.

As we worked our way through the courses—paper-thin beef carpaccio with yuzu, a bright-green salty dried fish, achingly fresh grilled red fish with snow crab, tender Icelandic lamb—Sigurdardóttir and I discussed my hotel-room cheese tasting. Of the three soft white-mold cheeses that I purchased, the nutty Stori Dimon is my top pick. Isbúi, an MS Iceland cheese made in the north and laced on Danish Danbo, is my favorite from Búrið. Sigurdardóttir concurs, citing its slightly springy texture and mellow, herby-citrus flavor.

"For such a small country," she says, "we have an amazing quality of raw materials to work with, especially the milk from our cows."

Our cheese plate arrives, and thanks to Sigurdardóttir, I'm already familiar with two offerings, Isbúi and the Danish-style blue. There is also creamy MS Dalu Brie from Búardalur, accompanied by Búrið apple-rosemary jelly, pickled apricots, and fig-apple-halsamic jam. At this point my memory becomes a bit hazy, as our server

continued to pour generous amounts of 30-year port, Sauternes, and Björk, an Icelandic birch liqueur. While this particular array is not on the Grillmarkaðurinn menu, a Sigurdardóttir-curated cheese board of some kind is always available.

Indeed, most of the finer restaurants around Reykjavik offer some version of an Icelandic cheese platter. But eating out day after day is an expensive endeavor. Luckily, there are a handful of shops stocking ingredients for an authentic Icelandic meal, as well as popular souvenir foods such as local honey, tea, and dried fish.

Of course, having Sigurdardóttir guide me through the world of Icelandic cheese made my experience infinitely richer than it would have been otherwise. Fortunately, visitors to Reykjavik can benefit from her expertise, too: As part of her Búrið Cheese School, Sigurdardóttir offers 90-minute classes on Icelandic cheeses, twice weekly in the summer. In addition to learning about the history of dairy production in Iceland, students sample an assortment of cheeses and other goodies during this lunchtime class.

"I'm very excited about it," she enthuses. "It's basically a history of my little country, how we've progressed, and how, in this harsh landscape, we've survived." ☺

Tracey Middlekauff is a food and travel writer, recipe developer, sometime professional cook, and blogger at [TastyTrix.com](http://TastyTrix.com).



THIS PAGE, CLOCKWISE FROM TOP LEFT: Fried camembert with raspberry sauce at Scandinavian Smørrebrød & Brasserie; Björk (birch liqueur) at Grillmarkaðurinn; the Northeast town of Husavík, during the July festival of Maerudagar (candy days); OPPOSITE PAGE: Hallgrímskirkja church in Reykjavik at sunset; CLOCKWISE FROM TOP LEFT: Icelandic lamb dog at Barjarns Beztu Pylsur; potato and mussel salad at Dill restaurant; classic Icelandic comfort food of leg of lamb with sugar-coated potatoes and vegetables, served at Íslen ska Barinn; lobster soup at Sagreifinn (Sea Baron)

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PHOTOS: LEFT, ICE: IYR/ANDRÉ RAGNAR TH. SIGURDARDOTTIR; RIGHT, TH. SIGURDARDOTTIR; COURTESY OF DILL RESTAURANT; COUNTRY OF ICE RESTAURANT; COURTESY OF DILL RESTAURANT; THE PAGE CHEESE, EXCEPT HUSAVÍK © RAGNAR TH. SIGURDARDOTTIR; www.eric-images.com

ICELANDIC SHEEP AND SHEEP FARMING IN ICELAND  
IN THE CONTEXT OF SUSTAINABILITY

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**North Atlantic native breed**

The Nordic settlers of Iceland brought with them sheep, horses, cattle, goats, pigs, poultry and dogs 1100 years ago. Of these breeds large numbers of sheep, horses and cattle are still kept while only small numbers of goats, poultry and dogs remain but the landrace pigs were extinct centuries ago (1). The Iceland Breed of Sheep, the only breed of sheep kept on the island, belongs to the North-European short-tailed group of sheep breeds. It is a genuine landrace, by far the most numerous purebred population of North European short-tailed breeds, accounting for almost 60% of the world total (2). The most closely related sheep are the native breeds in Norway, the Faroe Islands, the Shetland Islands, the Orkney Islands, the Hebrides and St.Kilda (2,3).

In Iceland, a country of ice and fire, the hardy Icelandic sheep have always been and still are, of great economic and social importance. Historically, it is often claimed that without the sheep, providing meat, wool, skins and milk, the isolated human population would not have survived centuries of hardship and poverty. Their numbers have fluctuated substantially over time, fairly stable at present, now numbering a total of 480.000 winterfed sheep. Since the first livestock census in Iceland was carried out in 1703 the lowest recorded sheep number in the country was only 50.000 in 1784 due to the consequences of a major volcanic eruption in 1783. Within-breed selection for decades have yielded good results in terms of genetic gain and productive performance without crossing with foreign breeds (4). Overseas, Icelandic sheep are mainly found in Greenland, Canada, the USA, the UK, Denmark, Germany and Switzerland. In Norway Icelandic sheep have been involved in a Spælsau breeding programme, mainly in recent years.

**Great genetic diversity**

While some 80% of the Icelandic sheep are white they exhibit a wide range of colours and their fleece is double-coated. Some 70-75% are horned, rams as well as ewes, as horn inheritance is not sex-linked. Four-horned animals do also occur. Body weights average 60-70 kg for mature ewes and 90-100 kg for mature rams. Icelandic sheep are early sexually maturing, prolific with 1.7-1.9 lambs born per ewe and multiple births (3-6 lambs) occur increasingly, mainly in ewes carrying single genes for high fecundity, the Thoka and Loa genes, respectively. Icelandic ewes are good milkers and the lambs grow fast. (4,5,6). The unique leadersheep strain within the Iceland breed possesses certain genetically based behavioural abilities. This has recently been demonstrated in trials comparing leaders (ewes, rams and ewe lambs) with other Icelandic sheep. They express greater intelligence than other sheep, have long been known for leading the flock and have an unusual ability to find their way in bad weather. Most of them are coloured and horned, looking more like the primitive ancestors than the modern Icelandic meat sheep. Leadersheep are bred in small numbers, even only one or two, on some sheep farms, and their distribution is facilitated by AI. The total population of leadersheep, pure and crossbred, was documented at 1422 winterfed animals in 2011. No comparable sheep are found elsewhere in the world. (7,8).



## Wool and skins valuable by-products

Although sheep meat, mainly lamb both for the domestic market and for export, is the most important product (90%, 9.900 tons) both wool and skins are valuable by-products (10%) in terms of farm income.

It is well documented that the wool was of much greater economic value in former times (9). Both the wool and the skins are still well known high quality products. Now 750 tons of washed wool and 530.000 lamb-skins are produced annually. Only one company, ÍSTEX Ltd., is responsible for wool washing and most of the wool processing ([www.istex.is](http://www.istex.is), [istex@istex.is](mailto:istex@istex.is))

Due to the great genetic diversity of several characteristics of the Iceland breed of sheep a great variation in colours is maintained. Thus some 20% (90.000) of the breeding sheep in Iceland are non-white, namely coloured with both well known and rare colour patterns (10). Although the wool industry is more interested in white than coloured fleeces there is always a strong demand for natural colours such as black, brown and grey for knitting or for other methods of making handicraft items. Another important quality aspect of Icelandic wool is its double-coat, namely long, glossy, water-repellent outer fibres (21 cm) and short, fine, soft, highly insulating inner fibres (6 cm). Thus garments such as “lopi” sweaters, caps and mittens are known for their excellent qualities of warmth and breathability of the twin-fibre Icelandic wool. While the long fibres are as such of carpet quality the short fibres are of fine-wool quality (9). The mean Bradford Count is 56 (under 46 to over 70) and the mean fleece weight is 2 kg.

Traditionally the shearing time in Iceland was late June – early July, just before the hay-making season. In the 1960s winter-shearing (February-March) became common in Icelandic farms but since the late 1980s – early 1990s shearing twice yearly has become a general practice in most flocks. Thus the sheep are shorn at the beginning of housing, mainly in November, and again late in the winter (February-March). The autumn wool is of the highest quality but good housing conditions and adequate feeding must be ensured (11).

Although wool and skin prices are generally low, and the value of wool to the farmers often just covers little more than the cost of shearing, the economic value of these products is increasing again. The Icelandic wool is regaining its popularity, not least in Iceland, especially since the beginning of the economic/bank crisis in 2008, and there is a growing market for knitted articles. Furthermore, artificial fibres competing with wool depend highly on fossil fuel energy, namely oil, which is becoming more expensive. Thus in view of “peak oil” and measures to counteract “global warming” grassland based sheep products, such as sustainably produced wool, may show a more rapid “come-back” than anticipated at the end of the 20<sup>th</sup> century. Similar may apply to sheep skins (12).

## Sustainable rangeland utilization

It is of historical interest to note that some ancient, traditional practices still remain in the keeping of sheep in Iceland, such as communal rangeland utilization, gathering and sorting of sheep (réttir) in autumn, also on a communal basis, and the use of earmarks for all sheep in the country (13,14).

Iceland, an island of 103.000 km<sup>2</sup> bordering on the Arctic Circle, with a human population of 320.000, is better known internationally for its volcanic activity, glaciers and mountainous landscapes than for its grassland-based agriculture. However, natural rangeland pastures are amongst the most valuable resources of the country providing summer grazing for 1 million sheep and a small goat population, as well as sustaining considerable horse, cattle and reindeer grazing. The short-tailed Iceland sheep are well adapted to the traditional, extensive grazing system applied which is characterized by free-range browsing for 5-6 months (June-November) followed by housing with silage/hay feeding for 6-7 months (November-May). Thus the economic contribution of rangeland utilization is substantial, especially to the sheep sector, amounting to approximately half of the annual roughage consumption of sheep (15).

The diverse vegetation of the rangelands is characterized by hardy grasses (Gramineae) and sedges (Cyperaceae) as well as by dwarf shrub heaths and mosses. There is also a great variation, partly seasonal, in plant quality, selection, intake and nutritive value as well as in vegetation cover and soil condition (15,16). These sustainable pastures, which do not receive any fertilizers, thus have extremely variable



land carrying capacity. Expressed as ewes with lambs (mainly twins) per hectare this could range from 0.4-2.0 on lowlands and 0.4-0.8 on uplands, at a moderate grazing pressure.

### **Quality control**

In the Quality Controlled Sheep Production Scheme, initiated in 2003 and now including over 90% of the sheep production (17), the guidelines expressed as hectares needed per ewe with lambs aim for 2.5-8.0 on rangelands below 400 m above sea level, assuming stocking rates which ensure light or moderate grazing pressure. Lambs raised under such rangeland conditions are free from parasitic infections and are generally healthy. They grow fast, lamb losses are minor and the meat is tender and palatable with an excellent consumer image. The EUROP classification results show clear trends towards greater muscularity and less fat while the national average carcass weight is fairly stable, around 15.5 kg. Breed improvements have been enhanced by most of the sheep being individually recorded, by a widespread application of ultrasonic scanning and artificial insemination of some 10% of the adult ewe population. Sheep AI is in fact more common in Iceland than in any other European country except France.

Genetic selection has been mainly directed towards meat characteristics and there is ample historical evidence to indicate that traits such as non-white colour were selected against until 10-15 years ago. However, apart from the normally coloured leaderrams and four-horned rams, some high ranking coloured rams, selected on the basis of meat production criteria, are now available in the AI services (18). This helps the conservation of colour diversity.

The Quality Controlled Sheep Production Scheme is linked to support payments and in addition to obligations relating to individual identification and recording and both rangeland management and conservation, there are requirements concerning housing and feeding in winter, welfare generally, and recording of all inputs (17). Thus the scheme is a useful flock management tool.

### **Organic sheep production for a growing niche market**

While the total number of sheep flocks in the country is 2600 at present, including part-time and hobby farmers, only 10 flocks have organic certification. This development began 20 years ago and has been slow for various reasons. Only two of the eight sheep slaughterhouses in Iceland are certified to organic standards.

There is clearly a considerable potential for developing organic sheep farming in Iceland and in other North Atlantic countries, especially where sheep farming is still based on native, free-range, hardy breeds well adapted to local conditions, and where the sheep are raised on grassland and grassland products with a minimum of external inputs. The fast growing spring born lambs in Iceland need no concentrate feed supplementation, the climate is cool, pollution is negligible and relatively few diseases in plants and animals contribute to the clean and fresh image of the products. Old, native short-tailed breeds certainly fit well into organic farming practices in Iceland as elsewhere in the North Atlantic region (19).

While a generally high standard of animal welfare can be maintained in the Icelandic sheep system, and most of the requirements of organic sheep husbandry standards can be fulfilled without difficulties, however, certain bottlenecks restrict conversion (20). Thus, for example, shortages of organic fertilizers for hayfields and the construction of floors in sheep houses, in the absence of straw and other suitable bedding materials, are major challenges. Shredded paper may be used to a limited extent but in most cases there is a need for slatted floors in sheep houses. Supplies of straw are very limited or not available at all. There is no scientific evidence that welfare is compromised by keeping sheep on slats in winter when let out daily, weather permitting (21,22). Advisory and certification bodies, now obliged to work within the framework of the European Union legislation, feel that little attention has been paid to marginal, Nordic conditions, where both cereal and legume growing is limited by the harsh climate and where a longer conversion period is needed than on the Continent of Europe. However, amongst the positive aspects in Iceland are individual recording, rearing of lambs on the farm from birth to slaughter, absence of some well know diseases, no need to use anthelmintics or other drugs on extensive summer ranges, high standards



of hygiene and supervision in abattoirs and EUROP meat classification. Winterfodder supplies may be boosted in some Icelandic sheep flocks by meadow hay (carex species) without the use of fertilizers, by supplementing fish meal and by seaweed foraging on certain coastal farms (23). Waste from fish processing plants, now used on a few organic farms, could become a major source of organic fertilizers.

Although organic sheep farming is still in its early stages of development in Iceland, it seems likely that there will be a continued growth in the market for organic sheep products in the future due to the strong environmental and quality image of lamb, wool and other such commodities. Moreover, the positive links between sheep farming and both environmental management and the maintenance of rural communities can strengthen sustainable social and economic development and counteract the trend towards the industrialization of agriculture. However, it is clear that organic lamb must compete in the meat market mainly as a safe, high quality product, and under Icelandic conditions this development is likely to be slow due to the high reputation of conventionally produced lamb. Marketing of organic lamb, wool and skins is a great challenge and higher costs need to be covered by higher product prices, particularly if no or little conversion support is available (24).

## Conclusions

In a world of increasing demand for food and fibre for a growing global population there is a need for sheep products from environmentally sound systems. The grassland-based, native short-tailed sheep breeds adapted to North Atlantic conditions have a special role to play in this context. They can contribute to food security in a sustainable way and help to strengthen rural development, e.g. through tourism. Moreover, the main emphasis must be placed on **quality products** which relate clearly to both **local integrity** and **cultural heritage**. Last, but not least, we must conserve the **diversity** of our sheep breeds and their products.

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The next North Atlantic Native Sheep and Wool Conference will be held in Iceland 4-8 September 2014. I am on the organizing committee and will send further information in due course. An excellent opportunity to visit Iceland, see our sheep and learn about the prospering sheep sector. We will include visits to a wool mill, a slaughterhouse, sheep farms and sheep round-ups where thousands of sheep are sorted. The devalued Icelandic currency makes it more economic than ever for foreigners to visit the country. If you have questions, Dr. Dýrmundsson may be reached at: <ord@bondi.is>



### Origin

The Icelandic sheep is a triple-purpose breed that can be used for meat, milk, and wool. First brought to Iceland from Northern Europe by Vikings around the late eighth century, the sheep are good foragers with large rumens (stomach compartments), which made them valuable for their ability to withstand harsh Icelandic winters and survive on a thin pasture. The efficiency and vitality of Icelandics also made them an economical option for poor farmers who couldn't provide a steady supply of hay or other feed for their animals.

### Leadership

Icelandic flocks have natural leaders, aptly named "leadership," who possess keen survival instincts, a high level of intuition, and a strong sense of direction. In Iceland, leadership were invaluable to shepherds because they could be trusted to lead other sheep to safety in unpredictable weather.

### Appearance and Temperament

Icelandics are sturdy, medium-size sheep with short tails and stocky bodies. Females weigh about 130 to 160 pounds and males about 175 to 220 pounds. Their fleece consists of two parts: a soft undercoat and a coarser overcoat. Their wool varies widely in pattern and color and is used to produce lopi, a fiber popular with wool craftsmen.

Icelandics are generally very alert animals. They can be easily spooked and will sometimes become aggressive when agitated. However, with a firm but sensitive upbringing, they can be friendly and even affectionate, says Deborah Pikovsky of Star Thrower Farm in Minnesota, an all-Icelandic sheep dairy with a flock of 700.

### Milk and Cheese

Compared to other dairy sheep breeds such as Friesians, Icelandics provide a small amount of milk. But what they lack in quantity they make up for in quality. "I don't think I can find a richer, more beautiful milk to make farmstead cheese [with] in the US today than Icelandic," says Pikovsky, noting that Icelandics' milk is relatively high in fat, with a naturally sweet flavor.

The milk can be used to make a variety of cheeses and specialty dairy products, including Iceland's traditional yogurt cheese, Skyr. Star Thrower Farm produces many farmstead cheeses, such as Camembert-style wheels, aged tommes, ricottas, and blues. These products are creamy and rich and often exhibit flowery notes from the sheep's diet of grass, plants, and legumes.

## Icelandic Sheep

*This hardy breed is valued for its resilience and versatility*

WRITTEN BY NATALIE GARDINO

Natalie Gardino is a freelance writer based in Boston, Massachusetts.

PHOTO: Anubandhu/Shutterstock.com



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# ISBONA CALENDAR

## SPRING

### April

- ☼ April 1 – deadline for ads in Spring Newsletter
- ☼ Enjoy your sheep (and lambs)!
- ☼ Reminder for membership renewal
- ☼ April 15 – deadline for articles being submitted for the Spring Newsletter
- ☼ Deadline for nominations of BOD candidates to be received by secretary

### May

- ☼ May 15 - Tentative date for Spring BoD meeting
- ☼ Consideration of annual dues and fees

### June

- ☼ Enjoy your sheep!

## SUMMER

### July

- ☼ July 1– deadline for ads in Summer Newsletter
- ☼ July 15 – deadline for articles being submitted for the Summer Newsletter
- ☼ BoD candidate introductions re-published in Newsletter
- ☼ BoD election ballots go out in Newsletter

### August

- ☼ August 15 - Ballots due back to membership secretary
- ☼ Yahoo group call to Membership to begin planning next AGM

### September

- ☼ Enjoy your sheep!

## FALL

### October

- ☼ October 1 – deadline for ads in Fall Newsletter
- ☼ October 15 – deadline for articles being submitted for the Fall Newsletter
- ☼ Final reminder for membership renewal
- ☼ Newsletter call to Membership to begin planning next AGM

### November

- ☼ Nov. 1 - Tentative date for Fall BoD meeting
- ☼ Target date for AGM proposals
- ☼ Yahoo! group call to General Membership to nominate candidates for new BoD

### December

- ☼ Enjoy your sheep!

## WINTER

### January

- ☼ January 2— deadline for ads in Winter Newsletter
- ☼ January 2 – Tentative date for Winter BoD meeting
- ☼ January 15 – deadline for articles being submitted for the Winter Newsletter
- ☼ Newsletter call to General Membership to nominate candidates for new BoD

### February

- ☼ Enjoy your sheep!
- ☼ Work on fiber projects

### March

- ☼ March 15 deadline for nominations for BoD to be received by secretary



## Emergency Sheep Music

by Thomas W. King

A recent issue of ISBONA had an excellent article on preparing for sheep emergencies. We took that article to heart, and formed a local network of about a dozen neighbors and friends, plus veterinarians, who will help us at Sunny Cove in weather disasters and other challenging times.

Participants came to an initial training and pizza lunch at our little farm to learn procedures and to meet each other. Also, they all received an electronic package of our emergency network and care information via email, and as a four-page print handout encased in plastic page protectors for rainy or snowy days. All are enthused to help. We update them regularly on changes.

Some of our backup team asked about the "strange-sounding" Icelandic names for each of our sheep, saying they could not remember them. So, each got a copy of this song parody we wrote for them. It seems to help. All ages find it fun to sing.

Ten Little Sunny Cove Sheep!

(Sing to tune of "One Little, Two Little, Three Little.....")

Verse 1

One little, two little, three little sheeppers.  
Four little, five little, six little sheeppers.  
Seven little, eight little, nine little sheeppers.  
Ten Little Sunny Cove Sheep!

Verse 2

There are... Grete and Ari and Torgeir and Tryggvi.  
Thorhallur, Bjorne, and Honna and Gefjon.  
And our newest little lambs living at Sunny Cove,  
Haakon and Ingaborg!

(Repeat both verses.)

Thomas W. King  
Sunny Cove Registered Icelandic Sheep  
Douglas County, Wisconsin

*Debra and Thomas King raise Icelandic sheep at their small primitive Sunny Cove farm, overlooking the western bays of Lake Superior. Their tough, hardy Icelandics inspire and mentor them in this rugged, variable hot-cold climate. Tom and Debbi keep on learning, along with sheepdogs, Sonja and Scotty, their smart, strong sled pullers who help move feed, water, and gear in all weather.*

### *From the Editor*

With this issue, we come to the end of another year. I hope and trust that it has been a happy and satisfying one for all, with lots of bouncing lambs, fat ewes ready for another go at it, and rams that are totally eager for a bit of excitement. With all the joy (and sometimes heartache, alas) that our sheep bring us, we must not forget about all the wonderful people who cross paths with us in this enterprise: the other members of ISBONA who are so willing to share their expertise when a problem arises, and to give moral support and even comfort; the shepherds who start their flocks or expand existing ones with animals we have loved and nurtured; customers who have come to us for one or more of the triple purposes of the Icelandics – for their meat, wool, or milk; those that have just come to farm or fair to admire our animals.

To all of you, my fellow shepherds, I wish a most Merry Christmas and Happy New Year!

Margaret



## Restoring and Maintaining Health

by Alethea Kenney

The first thing that catches most people's eye when they look at a flock of Icelandic sheep is the beauty. The sheep are so majestic with their long flowing locks, gentle eyes and lovely natural colors. That beauty is more than just skin deep, it starts with proper digestion, nutrition and pasture management. Without those things, sheep quickly become ragged, unthrifty, with low fecundity, difficult lambing, poor milk production and weight loss/poor gain. Parasites move in and invite all their friends. All of these problems contrive to make the life of the shepherd a nightmare of management chores. Many shepherds assume these issues are part of raising sheep, just par for the course and something that must be dealt with. Fortunately, that is not the case. Issues like poor wool quality, hoof conditions, low lambing percentages and difficult births, poor weight gain and milk production, diseases and parasites are all related very closely to health of the animal and underlying nutritional issues. I would like to give a brief explanation of the importance of minerals in restoring and maintaining health in sheep and ways to get those minerals into the sheep in a bioavailable, easily digested form.

### Mineral Primer:

Since sheep are herbivores, their nutritional needs are met mostly with hay and forage. Like all living things, sheep also need minerals, the building blocks of the body. They can take in much of their mineral needs from their feed although almost every shepherd offers some type of mineral supplement to their sheep. In an ideal world, soils would provide most of the mineral needs for the flock through the pasture and hay, but many factors come into play in mineral availability in soils. Many farms have soils deficient in several key minerals, have applications of chemical fertilizers that bind up trace minerals making them unavailable for use by plants (and therefore grazing animals) or have excessive pH causing some minerals to become less available. Weather may cause plants to either uptake more of or less of certain key minerals.

Problems in health can occur when the mineral supplements do not contain enough of a particular needed mineral, contain it in a form that is not particularly available to the body for digestion and absorption, or don't contain the needed mineral at all. On some farms, excesses of certain minerals in soils, water or feed may throw off the balance of related minerals or bind up other trace minerals. Supplemental mineral mixes may not contain enough of the needed mineral to offset those local conditions.

Minerals are generally divided into trace (or micro) and macro minerals. Trace minerals are those that are needed in very small amounts, but this is not to say they are not critical to health. They may be the limiting factor in life or death! Macro minerals like calcium, magnesium and phosphorus are needed in large amounts. They are also critical to health and life; without the proper amounts of these minerals in proper balance with each other, sheep will eventually die. Thankfully, many mineral imbalances do not cause death, at least not immediately. Low level deficiencies often lead to the above-mentioned problems and contribute to loss of production in a flock. Those types of deficiencies cost a shepherd a lot of time and money.

### Increasing Needs:

Situations that produce stress in a flock can change mineral needs and upset rumen balance. Stress increases need for minerals like selenium (and related vitamin E), magnesium and copper. Heat and humidity, travel, illness and parasites can all increase mineral needs (and may show mineral deficiencies and imbalances). Tetany from travel (stress), grass low in magnesium or lactation are symptoms of low magnesium, for instance. And white muscle disease that may occur in heat-stressed adults or show up as weak lambs and retained placentas at birth is a selenium deficiency. Most mineral mixes cannot compensate for these situations and shepherds need to be prepared to change their supplement strategies depending on weather, time of year and increases in stress.

Pregnancy and lactation increase need for minerals. If a ewe is not getting what she needs for proper reproductive health before breeding, she will not produce as many lambs (or may not cycle at all) and rams may produce inferior sperm. Weight loss is an issue and is related not only to mineral intake but to quality of feed. Once a ewe is bred, she needs enough minerals in proper ratio to meet not only her maintenance levels but to grow lambs and prepare for



birth and lactation. Her needs increase as the fetuses grow and after lambing, need for some macro minerals (like calcium and magnesium) increase tremendously to meet the demands of lactation.

Lambs born deficient in some minerals may not thrive and may even die before reaching maturity. Selenium and copper deficiency can lead to weak lambs (for different reasons: low selenium is associated with white muscle disease and weakness, while low copper is associated with poor nerve function and "swayback disease"). If lambs survive (usually after much intervention from the shepherd), they may grow poorly and can even die spontaneously from things like copper deficiency. Selenium also relates closely to immune function and fertility and acts as an antioxidant (important in protecting red blood cells) so is important during more than just lambing. Copper is important throughout life for immune health, ability of the body to use iron (and therefore make hemoglobin in the blood), wool production, bone growth and reproductive health.

### **Parasites:**

Many shepherds consider parasites part of raising sheep and attack them as the enemy. While parasites can certainly be detrimental (and in some cases, deadly), it is not reasonable to try and eliminate all parasites. Healthy sheep will not maintain high levels of parasites, making the shepherd's job much easier. Restoring and maintaining health is paramount to dealing with parasites, and minerals play a huge role.

Copper is one of the first minerals to be considered when talking about parasites because of its use as copper oxide wire particles (COWP) to kill some parasites. However, copper is needed for much more than just killing parasites in the rumen and the copper oxide is not a particularly well-absorbed form. It is likely that flocks needing the COWP have other underlying mineral imbalances contributing to higher parasite levels.

Selenium's role in immune health translates to importance in building up immunity to parasites and recovering from parasite infections.

Studies done on cobalt show that lambs getting adequate cobalt had lower levels of parasites and better weight gain than those lambs getting no cobalt but regular dewormings. These three are not the only minerals important to health but their lack can definitely increase susceptibility to parasite damage.

### **Disadvantage of Mineral Blocks:**

Sheep have different needs than other herbivores and humans even though all mammals require essentially the same minerals for proper health. Because sheep don't have upper and lower front teeth, they don't make good use of mineral blocks. Mineral blocks also have the disadvantage of containing salt. Since sheep self limit salt intake, this keeps sheep from overeating the block but it also means they will not make good use of mineral or trace mineral blocks if they have severe deficiencies.

Mineral in blocks is also not in a very absorbable form. Blocks often contain the elemental forms of minerals that are not as easily digested. Mineral blocks and loose supplements contain high levels of salt and also contain flavor enhancing additives and preservatives. The flavor enhancers ensure sheep eat the mineral, but they don't contain needed nutrients and can often be detrimental. Things like molasses add sweetness and may increase susceptibility of the sheep to internal and external parasites and insects and disrupt proper rumen function.

### **Availability:**

The form minerals are in is important. Elemental forms of minerals are not as easy for mammals to digest in many cases. Soil bacteria and fungi assist plants in taking the elemental minerals and changing the form to something useful for growth and much more digestible for sheep. Mineral supplement manufacturers make use of this knowledge to create minerals that are bound to amino acids and therefore more available for digestion and absorption. These minerals are called chelated. Chelated minerals have several advantages such as better availability for digestion and palatability. Because chelated minerals are so easily digested (sometimes close to 100% useable by the body), they can help offset situations where other minerals bind to the needed mineral so the body is unable to use that mineral. This interplay occurs for all minerals and is a problem when one mineral becomes completely unavailable due to the extreme excess of another antagonistic mineral. Examples are molybdenum completely binding up copper or iron

binding up selenium. Other mineral interactions become a problem if minerals are out of balance with one another. Excess salt will deplete potassium (or the reverse) and excess calcium not only binds up trace minerals, it throws off the balance with magnesium and phosphorus. Several of the more common trace minerals (and some macro minerals) are now available in a chelated form for supplementation, making it easier to get a proper amount of those minerals into a sheep.

### **The Importance of Natural:**

I am always surprised to hear from shepherds who spend a lot of time giving injections, particularly when those injections are to try and meet mineral needs (or compensate for deficiency that leads to vitamin deficiencies). BoSe, Bovine Selenium injectable is used to treat selenium deficiency in pregnant ewes (although this is extra label), prevent white muscle disease/weakness in newborn lambs and treat low level signs of white muscle disease in adults. From my point of view, injecting minerals to compensate for the lack of available minerals in a supplement (or soils and forage) is not the best way to tackle the problem. Not only is this an unnatural way to get a mineral into a sheep, it is costly, time consuming and can have side effects, in the extreme case death from anaphylactic shock. A better way to meet selenium needs would be to use a chelated product like Selplex (made by Alltech). This product has the advantage of crossing into the placenta, meaning lambs are born strong and running, crossing into milk, meaning lambs continue to get selenium from their mother after birth and being bioavailable, meaning it is easily digested and not going to bind up with antagonistic minerals. Prevention really is worth a pound of cure when working with minerals.

In addition to chelated mineral products, things like kelp contain needed minerals (both trace and macro) in an easily digested form that is palatable. Herbs, brush and trees can be used to provide minerals in individual cases and as part of a grazing program. Since tree roots reach deep into the subsoil and bring up trace minerals otherwise not available in the pasture, sheep may eat bark to try and meet trace mineral needs otherwise lacking in the supplementation program.

Improving soil health by reducing use of chemicals that can kill off beneficial bacteria, fungi and insects improves availability of minerals and nutrient content of forage. Restoring minerals through applications of compost and fertilizers (preferably not the conventional) also improve mineral availability.

It is important to remember that everything needs to work together for a sheep to be healthy and one of the first steps is proper digestion. Without this, a sheep cannot make use of any other nutrient that it takes in. All minerals interact with one another, in soils, in plants and in the body. While minerals are discussed separately, in reality, they cannot be so easily divided.

### **Digestion:**

No matter how much quality feed is provided, if a sheep is unable to digest it, the nutrients are worthless. Herbivores, and ruminants in particular have very elaborate digestive systems, designed to take plant material and use it to meet the nutritional needs of the animal. Ruminants can make use of roughage completely indigestible to other mammals, as long as their rumens are fully functional. Minerals play a huge role in maintaining the health of the bacteria in the rumen that are the basis for digestion and assimilation of nutrients.

Cobalt is a mineral I consider the base of the pyramid. Although it is a trace mineral, it is vital to the rumen bacteria health and ability to assimilate nutrients. It is also used to make vitamin B 12 (cobalamin) and is important in folate metabolism. Lack of cobalt results in rumen bacteria dying, associated lack of appetite and weight loss (referred to as chronic wasting disease). Other symptoms include coldness, poor wool production/loss and pernicious anemia, which is indistinguishable by sight from iron-deficient anemia. Iron-deficient anemia can be related either to low iron or low copper making iron unusable. Low cobalt also can cause tearing from the eyes. Sheep can pull cobalt from stores in the liver to make vitamin B 12 but they cannot use cobalt stored in the liver to put back into the rumen to support bacteria health. Cobalt must be taken in orally on a regular basis for sheep to survive. Cobalt toxicity is much less a concern in ruminants than other mammals. Sheep tolerate high levels compared to needs, although lambs who do not yet have fully functioning rumens should not be fed extremely high amounts of cobalt.



Sulfur is also critical to digestion, a macro mineral needed for amino acid and protein production. It is important for wool, skin and nervous system health. Without proper amounts of sulfur, sheep lose appetite and have poor quality wool growth. They may become susceptible to external parasites (like lice), salivate and have tears from the eyes. Excess sulfur will bind up trace minerals like copper, reduce rumen function and result in breath that smells like sulfur.

Many other minerals are important in digestion, including salt. Deficiencies and excesses will disrupt rumen bacteria and lead to poor health and possibly death.

### **Vitamins:**

Walk into any pharmacy or big discount store and you will see aisles of vitamin supplement products. The array is dizzying and leads one to believe we would never survive without some bottle or liquid product. In both sheep and humans, there are certainly cases where supplementing vitamins is critical, such as when digestion is disrupted and the ability to make and absorb vitamins is diminished. In times of stress or illness, increasing need for vitamins makes supplementation a wise choice. However, restoring digestive function is the first step and reducing underlying causes of deficiencies should be next.

Sheep make and absorb their B vitamins and vitamin C if they are healthy, with properly functioning digestive systems. This should meet their nutritional needs unless something changes substantially. During situations where digestion is poor (disease, parasites, stress), working on digestion while injecting vitamins is the quickest way to restore health. This is one of the only times I use injections; since the animal is not digesting properly, feeding the vitamins is a waste of time.

Vitamins A, D and E are fat soluble, meaning they are stored in the body, unlike vitamins B complex and C, which are easily flushed from the body and needed on a daily basis. Vitamin E, while fat soluble, is often considered more like a water soluble vitamin because it is not stored as well as A and D, and may be needed on a fairly regular basis for health. Fortunately, forage usually meets the vitamin E needs of sheep. However, stored hay loses vitamins rather quickly and supplementation may be necessary during periods of prolonged hay feeding.

Vitamin D is made by the body in the skin and sunlight is needed for proper amounts. During long winter months or prolonged periods of confinement in buildings, sheep will need additional vitamin D. Vitamin D is critical for sheep to be able to use related minerals, like calcium, magnesium and the trace mineral boron. Vitamin A is generally adequate in forage but again, hay feeding means supplementation is necessary.

For short term oral supplementation of vitamins A and D, cod liver oil is a good source. Human-grade vitamin gel caps for vitamin E can be used and B complex or C capsules or liquid can be fed. Herbs containing high amounts of these vitamins are also a good way to get quality, easily-digested forms of the vitamins into sheep. Rose hips (*Rosa* spp), dandelion leaves (*Taraxacum officinale*), parsley (*Petroselinum crispum*) and nettles (*Urtica* spp) are all good sources of several key vitamins and minerals. Ideally, sheep should be healthy enough to make their own B vitamins and a mineral supplement can provide the fat soluble vitamins needed during winter.

### **Icelandic Sheep Needs:**

Icelandic sheep come from Iceland, and this fact may present some unique differences between nutritional needs and tolerances in this breed and other breeds of sheep. Iceland, being a volcanic island, has soils high in trace minerals compared to much of North America. Icelandic sheep have been bred and evolved to tolerate and need higher amounts of several trace minerals. Selenium, copper, cobalt, zinc and manganese are often not found in high enough amounts in mineral mixes to meet nutritional requirements of Icelandics. This can depend on availability of these minerals in soils and feeds and presence of antagonistic minerals that may be interfering with absorption of the needed trace minerals. Some Icelandic breeders in North America are supplementing with at least a percent of goat mineral to try and increase levels of one key mineral, copper. A better option might be to include chelated minerals in the mix, as needed, for each farm situation.

### **Finding the Right Mix:**

For over a decade, I have tried different organic mineral products in an effort to maintain health in my flock of Icelandic sheep, goats and llamas. As a naturopath and herbalist, I'm not content with products that do not meet nutritional needs or contain ingredients that are artificial and detrimental. As a shepherd, I am not willing to compromise on health and safety that lead to time, money and emotion lost on a flock of unhealthy animals.

I became frustrated after looking at label after label and not finding minerals that met the needs of my flock, farm and beliefs. I eventually began to mix my own minerals, using kelp, chelated minerals and vitamin supplementation, as necessary. I quickly realized that finding these products in small amounts to use for mixing was nearly impossible. After much discussion with some local mineral suppliers, I was able to source what I needed and get those products available to other shepherds who were unable to find what they wanted locally. For more information, and to order trace mineral supplements, see the list of suppliers below. Also consider asking your local feed and mineral dealer to order the mineral supplements you are interested in.

HyView Feeds, LLC (animal nutritionist Kit Vandemark)  
40928 Cty 18  
Mabel, MN 55954  
507-493-5719  
hyview@mabeltel.coop  
hyviewfeeds.com

North Central Feed Products, LLC (ask for Zena)  
70 Alice St. PO Box 12  
Gonvick, MN 56644  
218-487-6040 or 877-487-6040  
ncfp@gvtel.com

### **Putting It All Together:**

After years of mixing my own minerals and helping other shepherds formulate a mineral plan that would work for them, I decided to have North Central Feeds produce and offer my mineral formula "Back in Balance" for sale. The mineral will be available in a goat formula that contains chelated copper and is appropriate for Icelandic sheep in most cases and a sheep mineral that has no added chelated copper. Horse mineral will also be available.

### **Benefits of Back in Balance Mineral Formulas:**

- Conveniently premixed in proper balance for most farms
- Available in amounts as small as 1 pound or whatever amounts are needed to meet your livestock nutrition needs
- Can be approved under certified organic programs and use ingredients that are nonGMO
- Contain no artificial preservatives, flavor enhancers or molasses
- Contain chelated minerals needed for healthy growth, lambing, wool and milk production and reproductive health in the ewe and ram
- Contain sulfur for proper rumen function, healthy fleece and hooves
- Contain chelated cobalt for better rumen health, mineral absorption and digestion, improved growth, better fleece quality and less trouble with parasites
- Contain chelated copper for proper nerve function, lamb health, fleece quality/color and immunity
- Contain chelated selenium for proper immune health, reproduction, muscle health, healthy lambs and ewes during birth and lactation



- Contain kelp for natural trace minerals, palatability, natural source of iodine critical to thyroid health and all functions in the body
- Contain calcium and magnesium in proper ratios for health and growth
- Contain essential oils for palatability, better rumen function, antioxidant, antifungal (reduces yeast and mold counts), antibacterial and antiparasitic properties
- Contain vitamins A, D and E for proper mineral utilization, even during times of confinement or hay feeding

If you are interested in more information about the mineral mix, availability or ingredients, please contact me or North Central Feeds.

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Alethea Kenney spends her time outsmarting her livestock on Reedbird Farm, a holistic Icelandic sheep farm in northern Minnesota. She also assists others in their search for more natural ways to live and raise their animals. You can learn more about her on her websites: [www.reedbird.com](http://www.reedbird.com) and [www.borealbalance.com](http://www.borealbalance.com)



# Introduction to Assessing AI Rams

*The AI Corner*

Flock improvement. In one way or another, that's what we are all striving for. We have animals that are triple purpose – meat, wool, and milk – and depending on our goals, we will focus on one or more of these. Meatier animals, perhaps, or animals with thicker thel and softer tog, or maybe ewes that give more milk *and* stand still on the milking stand. Many of us add a goal of better resistance/tolerance to barberpole.

We Icelandic breeders are most fortunate that we have a source of flock improvement that has been cut off for many other breeds. As Iceland is not a part of the EU, semen importation from Iceland is still allowed.

Why is this importation important? There are a number of reasons. First and foremost, it makes available to us the best genetics that are available to the shepherds in Iceland: rams that are selected primarily for their meat characteristics as demonstrated in their progeny, and for the profligacy and milking abilities of their daughters. In doing this, we can also keep the Icelandic flocks of North America abreast of the ever-improving flocks of Iceland – we are not setting up a separate “North American Icelandic.” The Icelandic flocks are continually improving – and this can be seen in comparing the AI rams over time - AI also helps to preserve the rare genetics, for example, of the leadersheep, and allows us the ability to “breed up” to higher percentage leaders.

This Newsletter has featured articles over the years by Guðmundur Jóhannesson (Mundi), who has organized the semen export to the United States. The following is the first in a series that will focus on specifics of the rams whose genetics have been imported into the US flock. Below you will find, excerpted from the Southram catalog and website, information on judging and a dictionary of important terms, and how these terms are used (viewed in a ram comparison chart and with the description of Hot-tur, one of our featured rams). Also included are the English translation pages of two of the rams whose genetics have been imported this year. These are new rams, available for the first time, both for Icelandic and American shepherds.

To view the latest rams, go to: <http://www.rml.is/static/files/saudfjarraekt/hrutaskra/hrutaskra2013.pdf>

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## **Judging info**

The sires are evaluated and judged according to FAI judging standards. Points are given for individual body parts in following order:

**Points:** Head – neck and shoulders – chest and conformation – back – loin – gigot – wool – feet – harmony.

Score of 80.0 points is good for a breeding ram and 85.0 points can be considered as excellent.

**Ultrasound:** Ultrasound measure of eye muscle thickness in mm and of back fat in mm – eye muscle shape score (1-5).

**(H)** Dutch ultrasound scanner, the type used by SOUTHAGRI.

**(S)** Scottish ultrasound scanner – which measures about 2mm lesser eye muscle thickness than the Dutch scanner.

This difference is not corrected in individual figures.

**Eye muscle shape:** In autumn 1999 eye muscle shape grading started. The grading of the eye muscle describes how well the muscle keeps its thickness out over the backbone. The shape is graded from 1 to 5. The scale is following:

1. Poorly shaped eye muscle.
2. Fairly shaped eye muscle.
3. Adequately shaped eye muscle.
4. Well shaped eye muscle.
5. Excellently shaped eye muscle.



## **Basic dictionary**

A basic dictionary for the printed version of Southram's sire catalogue which is in Icelandic. Here you can find translation and/or explanation of the tables and graphs in the sire list.

**Lambhrútaskoðun:** Evaluation of ram progenies performed in September/October.

*The following items refer to the evaluation of the ram's progenies:*

**Fjöldi:** Number of evaluated ram lambs

**Pungi:** Average weight of evaluated ram lambs

**Fótleggur:** Average canon bone length of evaluated ram lambs

**Læri:** Average score for gigot muscling (highest possible score is 20; 16 is good; 17 is very good; 18 is excellent)

**Ull:** Average score for wool (8.0 refers to good wool quality and no tan fibers)

**Ómvöðvi:** Average thickness (depth) of the eye muscle in mm

**Ómfita:** Average fat thickness on the eye muscle in mm

**Lögun:** Average score for eye muscle shape (1 is poorly shaped muscle and 5 is excellently shaped muscle)

*Following explanations refer to the graph for each ram.*

**Kynbótamat:** Breeding value index (based on information from the sheep recording in Iceland. 100 is average)

**Gerð:** Meat qualities based on the carcass grading

**Fita:** Leanness based on carcass grading

**Kjöttgæði:** Meat quality index (MQI), calculated from meat qualities (40%) and leanness (60%)

**Frjósemi:** Prolificacy of the daughters (for the young rams with few daughter records this index is mostly based on pedigree)

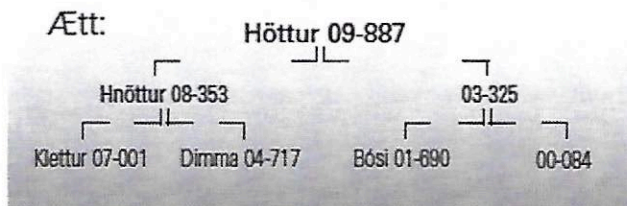
**Mjólkurlagni:** Milking abilities of the daughters (for the young rams with few daughter records this index is mostly based on pedigree)

Hrútar 2012-13, lambhrútaskoðun og kynbótamat 2012

Númer	Nafn	Ommæling					Lambhrútaskoðun										Kynbótamat (BLUP)													
		Fjóðh	Bungl	Vöðvi	Fla	Lagun	Fóti.	Haus	HH.	B+Ú.	Bak	Malir	Lærli	Ull	Fætur	Samr.	Alls	Fla	Gerð	Kjötgeði	Íngjúkurlagni	Frjósemi	Heild	Stöð 2012-13						
06-806	At	104	48,2	28,9	3,3	4,0	109	7,9	8,1	8,4	8,3	8,4	17,4	7,9	8,0	8,3	82,8	118	129	122	98	109	110	Fallinn						
06-807	Púki	218	49,4	28,6	3,2	3,9	111	8,0	8,0	8,4	8,3	8,6	17,3	7,8	8,0	8,3	82,7	123	107	117	108	113	113	Laugard.						
06-831	Stáli	98	46,2	28,9	2,9	3,9	110	8,0	8,2	8,5	8,4	8,6	17,6	7,8	8,0	8,2	83,3	137	117	129	112	105	115	Laugard.						
06-833	Grábotni	544	49,2	29,5	3,0	4,1	110	7,9	8,2	8,5	8,5	8,6	17,5	7,9	8,0	8,3	83,5	125	127	126	111	113	117	Varahr.						
06-841	Hukki	126	47,9	29,1	3,0	4,1	109	8,0	8,3	8,5	8,5	8,5	17,4	7,8	8,0	8,1	83,1	118	118	118	112	117	116	Fallinn						
06-864	Prófastur	223	47,8	28,5	3,1	4,0	109	8,0	8,2	8,5	8,3	8,5	17,5	8,0	8,0	8,2	83,1	114	113	114	108	105	109	Borgarnes						
07-808	Fannar	100	45,8	30,9	3,1	4,2	109	8,0	8,4	8,5	8,7	8,7	17,4	7,9	8,0	8,2	83,6	109	126	116	99	102	106	Fallinn						
07-835	Sokki	172	47,7	28,7	3,1	4,0	108	7,9	8,3	8,6	8,4	8,7	17,7	7,8	8,0	8,2	83,6	108	133	118	104	104	109	Fallinn						
07-836	Hrói	70	50,4	29,6	2,3	4,0	109	8,0	8,0	8,4	8,5	8,5	17,4	7,9	8,0	8,4	83,1	144	105	128	97	113	113	Fallinn						
07-837	Hriflon	119	47,1	30,9	2,7	4,3	109	8,0	8,1	8,4	8,7	8,6	17,6	8,1	8,0	8,3	83,7	147	123	137	108	102	116	Fallinn						
07-842	Bátur	100	47,4	28,5	3,1	3,9	108	8,0	8,1	8,5	8,3	8,5	17,4	7,9	8,0	8,2	82,8	120	124	122	104	107	111	Fallinn						
07-844	Jökull	123	46,9	29,3	3,0	4,0	109	8,0	8,1	8,5	8,4	8,5	17,5	7,7	8,0	8,3	82,9	123	130	126	95	99	107	Laugard.						
07-845	Gandur	7	50,6	29,0	2,8	4,1	112	8,0	7,8	8,6	8,9	8,8	17,6	8,0	8,0	8,3	83,9	126	116	122	99	115	112	Fallinn						
07-847	Lagður	118	48,1	29,4	3,0	4,0	111	8,0	8,1	8,4	8,4	8,4	17,3	7,9	8,0	8,3	82,9	120	123	121	101	102	108	Fallinn						
07-865	Blakkur	303	47,3	29,1	3,0	4,0	110	8,0	8,2	8,5	8,3	8,5	17,4	7,8	8,0	8,2	82,9	120	122	121	101	110	111	Laugard.						
07-866	Kvistur	111	47,3	30,2	2,7	4,2	109	8,0	8,3	8,5	8,6	8,6	17,6	7,8	8,0	8,2	83,6	118	125	121	106	105	111	Borgarnes						
07-867	Snaer	56	47,4	30,0	2,6	4,1	111	8,0	8,2	8,4	8,5	8,5	17,5	8,0	8,0	8,3	83,4	128	115	123	109	98	110	Borgarnes						
07-868	Knapi	84	49,0	28,6	2,4	4,0	109	8,0	8,1	8,4	8,4	8,4	17,3	7,8	8,0	8,2	82,6	136	121	130	108	115	118	Borgarnes						
07-876	Skugga-Sveinn																	105	122	112	111	121	115	Laugard.						
08-838	Borði	286	48,1	31,8	3,0	4,3	109	7,9	8,3	8,6	8,9	8,8	17,8	7,8	8,0	8,3	84,4	117	139	126	109	92	109	Laugard.						
08-840	Kjarkur	86	45,9	29,9	3,0	4,1	109	8,0	8,2	8,5	8,5	8,6	17,5	7,8	8,0	8,2	83,2	119	113	117	121	113	117	Borgarnes						
08-869	Guffi	174	48,4	30,2	3,0	4,0	109	8,0	8,0	8,4	8,5	8,5	17,4	7,9	8,0	8,3	83,1	119	124	121	99	110	110	Laugard.						
08-870	Hergill	284	46,7	29,8	3,1	4,1	109	8,0	8,2	8,5	8,6	8,6	17,6	8,0	8,0	8,2	83,7	101	145	119	102	94	105	Borgarnes						
08-871	Próttur	50	47,3	29,5	3,1	4,1	109	7,9	8,1	8,5	8,4	8,6	17,6	7,6	8,0	8,4	83,1	124	132	127	99	104	110	Laugard.						
08-872	Pristur	48	47,5	29,6	2,9	4,2	110	8,0	8,1	8,3	8,4	8,5	17,4	8,0	8,0	8,2	82,9	114	107	111	101	114	109	Borgarnes						
08-873	Tenór	105	48,8	30,3	2,5	4,2	110	8,0	8,2	8,5	8,7	8,7	17,5	7,9	8,0	8,3	83,7	143	115	132	105	108	115	Borgarnes						
09-849	Máni	147	47,1	31,1	3,1	4,3	108	8,0	8,4	8,6	8,8	8,7	17,6	7,8	8,0	8,3	84,1	114	128	120	108	95	108	Fallinn						
09-850	Gosi	466	47,6	31,3	2,8	4,2	110	8,0	8,2	8,5	8,7	8,6	17,6	7,7	8,0	8,3	83,7	136	124	131	108	92	110	Fallinn						
09-851	Kostur	58	45,4	30,4	3,2	4,0	108	7,9	8,3	8,5	8,5	8,5	17,3	7,8	8,0	8,0	82,9	105	122	112	106	91	103	Fallinn						
09-874	Seiður	161	48,3	29,4	3,1	4,0	109	8,0	8,0	8,4	8,4	8,5	17,4	8,0	8,0	8,3	83,0	132	120	127	106	93	109	Laugard.						
09-877	Ás																	122	130	125	101	103	110	Laugard.						
09-878	Bassi																	122	132	126	101	111	113	Laugard.						
09-879	Gaur																	128	119	124	117	105	115	Borgarnes						
09-880	Gumi																	121	98	112	115	118	115	Laugard.						
09-881	Rafall																	116	118	117	99	107	108	Borgarnes						
09-882	Partur																	103	122	111	106	99	105	Borgarnes						
10-885	Soffi																	123	113	119	106	99	108	Borgarnes						
10-875	Snaevær	341	46	31,1	3,2	4,1	109	8,0	8,2	8,5	8,6	8,6	17,5	8,0	8,0	8,2	83,6	109	127	116	107	102	108	Laugard.						
10-883	Stakkur																	143	118	133	111	108	117	Laugard.						
10-884	Grámann																	118	123	120	111	102	111	Laugard.						
10-893	Birkir																	129	133	131	107	98	112	Laugard.						
11-895	Drifandi																				101	103		Borgarnes						
11-896	Prúður																				108	114		Borgarnes						
Kollóttir																														
06-820	Vöðvi	42	47,5	27,8	3,3	3,9	111	7,9	8,1	8,2	8,0	8,4	17,3	8,0	8,0	8,2	82,1	118	103	112	97	105	105	Fallinn						
07-826	Skrauti	34	48,4	28,2	4,0	3,8	111	7,9	8,3	8,3	8,2	8,3	17,2	7,9	8,0	8,2	82,2	105	109	107	105	100	104	Fallinn						
07-854	Sómi	14	48,5	27,1	2,6	3,6	112	8,0	8,3	8,3	8,1	8,5	17,3	8,3	8,0	8,1	82,9	131	104	120	113	96	110	Fallinn						
07-855	Steri	225	48,1	29,5	3,2	4,0	110	7,9	8,3	8,5	8,4	8,6	17,6	8,1	8,0	8,2	83,6	97	138	113	117	100	110	Borgarnes						
08-856	Brjänn	17	48,9	28,2	3,3	3,9	111	8,0	8,2	8,4	8,1	8,6	17,4	8,2	8,0	8,2	83,1	109	119	113	97	106	105	Borgarnes						
08-857	Ári	6	49,3	27,7	3,1	4,1	111	8,0	8,4	8,3	8,2	8,4	17,3	8,2	8,0	8,2	83,0	107	124	114	113	91	106	Fallinn						
08-858	Fórði	92	50,3	28,6	3,5	3,9	112	8,0	8,3	8,4	8,3	8,5	17,5	8,4	8,0	8,2	83,5	130	114	124	106	111	114	Borgarnes						
08-859	Ljúfur	202	49,9	28,5	3,6	3,8	110	8,0	8,1	8,3	8,3	8,4	17,2	8,4	8,0	8,4	83,1	124	115	120	110	108	113	Laugard.						
09-860	Sigurfari	214	48,8	28,7	3,7	3,8	108	8,0	8,3	8,5	8,3	8,6	17,5	8,1	8,0	8,3	83,5	111	121	115	102	102	106	Laugard.						
09-861	Dalur	179	50,6	29,3	3,2	3,9	111	7,9	8,2	8,3	8,4	8,5	17,3	8,4	8,0	8,4	83,2	139	106	126	113	100	113	Laugard.						
09-887	Höttur																	108	125	115	103	112	110	Borgarnes						
09-888	Glæsir																	126	124	125	112	106	114	Borgarnes						
09-891	Strengur																	122	116	120	114	105	113	Borgarnes						
09-892	Dolli																	144	102	127	108	130	122	Borgarnes						
10-862	Svali	169	47,4	29,8	3,1	4,1	109	7,9	8,3	8,4	8,4	8,5	17,5	8,4	7,9	8,3	83,7	99	134	113	106	102	107	Laugard.						
10-889	Baugur																	137	117	129	108	99	112	Laugard.						
10-890	Kroppur																	104	138	118	108	101	109	Laugard.						
Meðaltal:		6076	48,0	29,4	3,0	4,1	110	8,0	8,2	8,5	8,5	8,6	17,5	7,9	8,0	8,3	83,4													
Fallnir hrútar 2011-12 - ástæður																														
06-806	At	Felldur, fullnotaður										07-842	Bátur	Felldur, fullnotaður										06-820	Vöðvi	Felldur, fullnotaður				
06-841	Hukki	Felldur, heilablóðfall v/slagsmála										07-845	Gandur	Drapst, meinsemd í liðum										06-853	Valur	Felldur, ígerð í fæti				
07-808	Fannar	Felldur, fullnotaður										07-847	Lagður	Felldur, fullnotaður										07-826	Skrauti	Felldur, fullnotaður				
07-835	Sokki	Drapst, afvelta										09-849	Máni	Felldur, fullnotaður										08-857	Ári	Felldur, lélegt sæði				
07-836	Hrói	Felldur, fullnotaður										09-850	Gosi																	

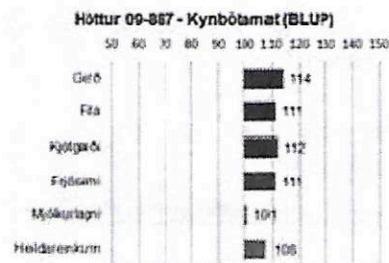
# Höttur

frá Húscvík, Steingrímsfirði.



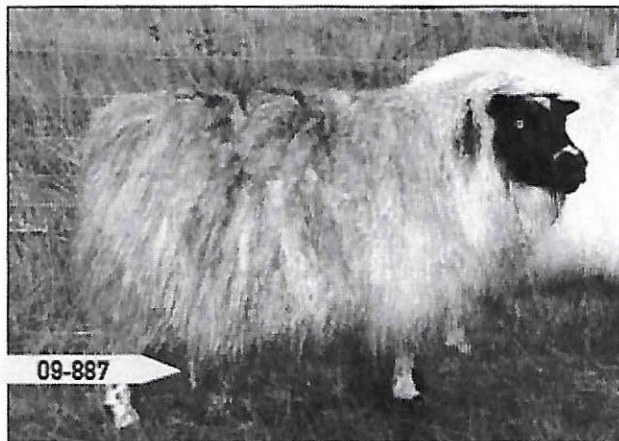
MFFF: Boli 99-874.

Höttur 09-887		2013
LAMBERÚTASKOÐUN	Fjöldi	97
	Þungi	474
	Fótleggur	111
	Læri	173
	Ull	7,9
	Ömviðvi	274
	Ömfiti	3,2
	Lögun	3,7



**Lýsing:** Svartfleckkóttur, kollóttur með þróttlegan og breiðan haus. Herðar breiðar og vel fylltar, bringan breið og útdögur miklar. Breitt og sterkt bak ásamt breiðum, vel fylltum mölum. Góð lærahold, lærvöðvinn mjög þykkur. Virkjamikill og bollangur hrútur.

**Ullarlýsing:** Svartir dropar um allan bol. Mjög ullarmikill og reyfið þykkt, nokkuð togmikið og togjð fremur gróft.



**Reynsla:** Höttur 09-887 var fenginn á stöð sumarið 2012 á grunni góðrar reynslu á heimabúi og er því að hefja sinn annan vetur á sæðingastöð. Hann var mikið notaður síðasta vetur og allstór hópur afkvæma hans kom til skoðunar nú í haust. Þetta voru kostamikil lömb, væn og falleg á velli. Bakvöðvamælingar þeirra voru aðeins undir meðallagi en mörg afkvæma Hattar eru með afbragðs mala- og lærahold. Lita fjölbreytileiki þeirra var einnig mikill og hentar hann því vel þeim sem vilja halda í sem flesta af grunnlitum íslenska sauðfjárkynsins.

Takmörkuð reynsla er komin á Hött sem ærföður. Dætur hans eru allar enn á heimabúi en þar hafa þær sýnt góða frjósemi ásamt því að vera góðar afurðær. Kynbótamat hans fyrir þá eiginleika er honum hafgælt.

**Litaerfiðir:** Undan Hetti má vænta allra grunnlita sauðfjárstofnsins leyfi móðurætt slíkt þar sem hann hefur auk tvílitar, erfðavísi fyrir mórauðum lit.

**Arfgerðargreining v/riðusmits:** Hlutlaus.

**Mál og stígun:** 2009-47-106-28/3,0/4,0(H)-8,0-8,5-8,5-8,5-17,5-8,0-8,0-8,5=84,0 stíg



## Höttur 09-897

Black spotted and polled with vigorous and powerful head. Broad and well-muscled shoulders, good rib shape and wide chest. Broad and muscled back. Very good rump and gigot muscling. Strong feet. Long bodied and powerful ram. Black spots all over the fleece. Wool quantity well above average. Thick fleece. Lot of rather coarse tog.

Höttur was bought for AI in 2012 after good results at his birth farm. He is also little related to AI rams that have

been used recently. His progenies are very mature resulting in good dressing weight. They are well muscled with good leanness.

AI sires in the pedigree of Höttur: none.

Höttur's daughters are prolific ewes with more than average milking abilities.

**Meat qualities:** Carcass Grading: 125 Fat Grading: 108

**Daughters:** Prolificacy: 112 Milking Abilities: 103

**Score 2011:** 84.0 points

**Ultrasound 2011:** Eye muscle thickness 29.2 mm, back fat thickness 2.5 mm, muscle shape 3.7 (S)

**Color inheritance:** Höttur carries spotted as his color indicates as well as moorit. Therefore all colors can be expected on his progenies depending on the mother.

## Drifandi 11-895

Black and horned with very good looking head. Muscular shoulders, wide chest and very good rib shape. Very well muscled back. Broad and well muscled rump. Excellent leg muscling. Very good looking and muscular ram.

Wool quantity well above average and thick fleece. Little bit of grey hairs in the fleece. Curly, medium fine and even thog.



Drifandi was bought for AI in 2012 after progeny testing at Hestur experimental farm resulting in very good eye muscle depth and shape as well as good dressing weight. His progenies have very good meat qualities, especially leanness as the sheep from Hestur is known for.

AI sires in the pedigree of Drifandi: At, Grani, Kveikur

Drifandi's daughters' abilities are yet to be discovered but his indexes are promising concerning prolificacy and milking abilities.

**Meat qualities:** Not yet measured with offspring.

**Daughters:** Prolificacy: 103 Milking Abilities: 101

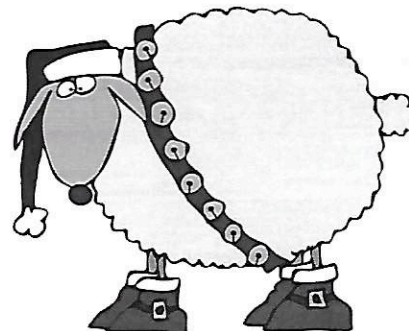
**Score 2011:** 86.5 points

**Ultrasound 2011:** Eye muscle thickness 30 mm, back fat thickness 1.9 mm, muscle shape 4.0 (S)

**Color inheritance:** Drifandi is homozygous black. Carries neither moorit or spotted.

The next  
North Atlantic Native Sheep and  
Wool Conference will be held in  
Iceland 4-8 September 2014.

I am on the organizing committee and will send further information in due course. An excellent opportunity to visit Iceland, see our sheep and learn about the prospering sheep sector. We will include visits to a wool mill, a slaughterhouse, sheep farms and sheep round-ups where thousands of sheep are sorted. The devalued Icelandic currency makes it more economic than ever for foreigners to visit the country. If you have questions, Dr. Dýrmundsson may be reached at: <ord@bondi.is>



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Alan Leighton



## With Deep Gratitude

I now feel like a complete shepherdess.

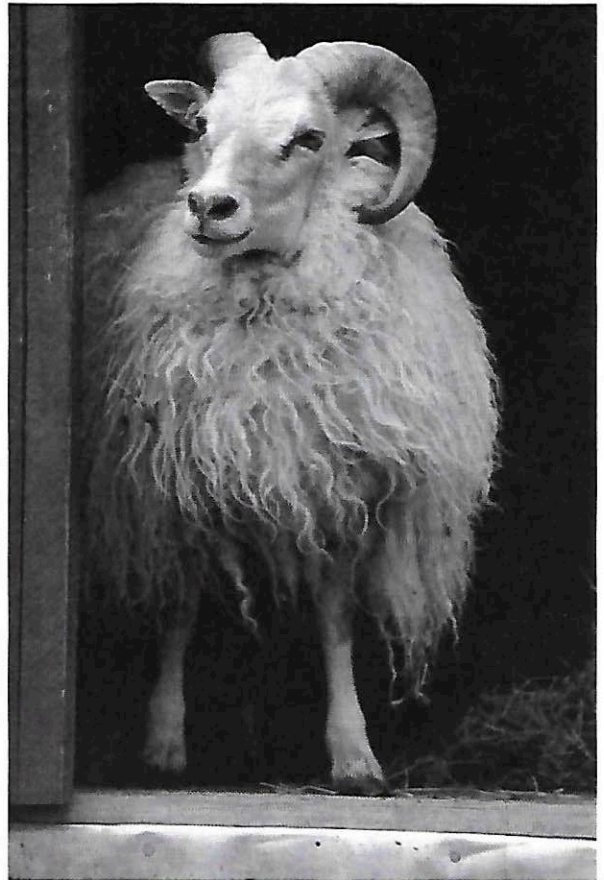
I bought my flock in Spring of 2012 and in that flock was Buddy.  
I love him for what he gave me in this first year.

I learned how to give CDT shots without fainting, FAMACHA, deworming, trimming hooves, spinning yarn with the wool he gave me and the most important lesson was the knowledge that, "Yes I can do this, I can be a shepherd!"

Yesterday I took him to the butcher, or like my friend Sue likes to call it, Freezer Camp. I didn't want to go into the holding area with him but I knew I had to see it to the final stage. I knew that I couldn't do this final chapter in his life but the person who did, would do it respectfully. Cheers to you Buddy and thank you.  
Your loving Shepherdess.

*Cassie Petrocelli  
Ledge Hill Farm  
Mechanic Falls, ME*

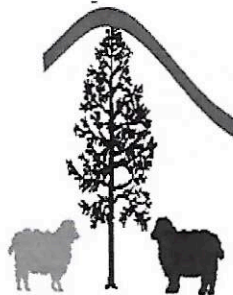
*Ledge Hill Farm overlooks a valley in Central Maine. Our family farm has a small flock of Horned Icelandics that we raise for meat, fiber and breed-stock for others to enjoy.*



## Tamarack Farm

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**Ram & Ewe Lambs for Sale**

### Ode to the Two Jerks in the Field at 6 This Morning by Cassie Petrocelli

Rams are awesome  
Rams are fun  
Rams make you get nothing done.

Rams are focused  
Rams are smart  
Ram's love is true to heart.

Rams bust fences  
Rams chase ewes  
in the spring it should be good news.

Chasing, chasing in my pjs  
swearing, swearing in my pjs  
contemplating getting gun  
because these rams are so much fun!

*Cassie Petrocelli  
Ledge Hill Farm  
Mechanic Falls, ME*



*Photo by Karen Witt*

**E. Cassie Petrocelli**  
**ISBONA Membership Secretary**  
**253 North Street**  
**Mechanic Falls ME 04256**

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