



# FROM THE *flock*

VOLUME 7 • ISSUE 11

## IN THIS ISSUE:

- 1-2 Value Chain Round Table
- 3 Lamb Eating Quality
- 4 RFID Management
- 5 Food Safety Program
- 6 Scrapie Canada
- 7 CFIA Transportation Regulations
- 8-10 Malignant Catarrhal Fever

## Value Chain Round Table

This year at the 2010 Canadian Sheep Federation's Annual General Meeting, Board members from across the country participated in a new Value Chain Round Table. The Value Chain Roundtables (VCRTs), coordinated through Agriculture and Agri-Food Canada, were launched in 2003 as part of a shared vision between industry and government to enhance Canadian competitiveness and profitability. The value chains bring together key industry leaders from across the chain – input suppliers, producers, processors, food service industries, retailers, traders and associations – with federal and provincial government policy makers. The focus of this year's Value Chain Round Table for the sheep industry was supply. This is not new topic to the industry, but one we have talked about for some time. The repetitive nature of the issue became apparent when many participants of the round table, sheep producers and processors alike, made references to the issue being around for many years past.

The numbers reported in a presentation I made at the value chain spoke to the continued persistence of this issue – supply continues to lag drastically behind demand. With the January 1, 2010 Statistics Canada numbers, the national ewe flock continues to decline, down another 2% from 2009 to 517,100 ewes. Only 2 provinces saw increases in their provincial ewe flock, while the remaining eight saw a decline. However, we continue to import increasing numbers of slaughter lambs in from the U.S. to help fill the demand. In 2008, Canada imported 26,069 feeder/slaughter lambs that increased 22% in 2009 to 33,461. The number of lambs processed in Canada has also been decreasing. In 2009, 741,800 lambs were processed, which was a slight increase of 2600 lambs processed the year before, but was down from the 775,200 processed in 2004. The lambs processed in 2009 also included the 33,461 slaughter lambs imported from the United States.

Canadian production of sheep and lamb products continues to lag behind the demand. In 2009, Canadian producers only supplied 47% of the domestic demand. The remaining 53% was meat products imported mostly from New Zealand and Australia. Of that 53% imported in, 55% was imported into Ontario and 39% into British Columbia. One might expect the growing demand for lamb to be linked to the increasing ethnic populations in major urban centers such as Vancouver and the Greater Toronto Area. These ethnic populations have lamb and sheep products as day to day protein sources.

Congratulations to CSF Executive Director Jennifer MacTavish, and her husband John, who welcomed their first child on November 4th, 2011. Rory MacTavish was born at 7:13 p.m. in Cambridge, Ontario, weighing 8lbs, 4 oz. We wish Jennifer and her family all the best. While Jennifer is on maternity leave, operations at the Canadian Sheep Federation continue as usual.



## Round Table continued

There has been some pushback on the growing emphasis from organizations like the Canadian Sheep Federation to grow the national ewe flock. One of the major concerns is that, while we are currently seeing record prices for lambs, we are also seeing record prices for major farm inputs like labour and feed. There is a great deal of fear from the industry that increasing production could flood the market and decrease price. However, a new concern should also be realized – that of countries importing lamb into Canada also seeing decreases in their national ewe flocks. Conditions have not been overly favourable in countries who import lamb into Canada, and crops of lambs have suffered. In 2007, devastating cold weather hit New Zealand (NZ) and killed newborn lambs in the hundreds of thousands. There was an expected significant effect on lamb production going into 2011 and beyond. As a result, it is possible there will be a decreasing amount of lamb available for Canada to import in order to meet our own demand. With the European Union providing relatively higher returns to New Zealand producers compared to other markets, lamb exports are likely to be directed away from lower value markets.

The unavailability of lamb to import into Canada could mean one of two things for Canadian producers. First, it could mean there is insufficient lamb available to fill the demand. If lamb is unavailable, infrastructure could be lost. Retailers, unable to get lamb to fill supermarket shelves will stock those shelves with another protein source. Consumers, unable to purchase the lamb they seek, will look to provide an alternate protein source to their families.

Even ethnic populations, as they move towards generations born and raised in Canada, may also move away from lamb. Once markets are lost, regaining them is difficult.

However, the alternate to this is that Canadian producers capitalize on the opportunity that is opened up by lack of imports to fill the domestic market.

In 2009, over 21 million kg of lamb was imported worth over \$131 million. That's \$131 million that has gone into supporting, in one way or another, importing sheep industries and their infrastructure. As we grow the national ewe flock, it becomes easier to realize economies of scale with resources such as feed and identification technologies. The Canadian market and its products become more appealing to retailers, processors, drug companies, and others.

The lack of supply was a major focus for discussion at the Value Chain. With a formalized Sheep Value Chain Round Table in place, solutions to this and many other issues plaguing this industry can move front and center for all those along the value chain and allow a collaborative approach to find viable solutions. While it is still early to assess if the newly assembled chain will find a solution to this long withstanding issue, its creation should stem new hope that a solution can be sought that benefits the entire chain and further establishes the Canadian sheep and lamb industry as a viable and profitable option for in agricultural production.

# The factors influencing lamb eating quality

Scientists have gained special insight into how lamb production and processing factors can influence the key quality attributes important to consumers: tenderness and colour.

By basing their work on the Sheep CRC's Information Nucleus flock, which is distributed at eight locations in 5 states across Australia, researchers have been able - for the first time - to separate environmental and genetic components of meat quality. The study was conducted jointly by Robin Jacobs of DAFWA, Janelle Edwards of SARDI and Robyn Warner of DPI Victoria, who says in the first year of the project, data from more than 2000 lambs was accumulated. "We all know that consumers expect premium quality and value from their lamb meat purchases, and both of these are influenced by environmental and genetic factors.

"This work will deliver ways of improving meat yield, quality and nutritional value, and will be applicable to different breeds, regions and lamb management systems across Australia."

Dr Warner, who was also part of a team that won a 2010 Museum of Australia Eureka Prize for science, says the study came to a number of key conclusions. "For tenderness, the level of Intramuscular fat (IMF) and processing conditions are most important, as indicated by the chemically measured fat in the meat, and the ultimate pH and the rate of pH fall. The majority of lamb loin meat was acceptably tender after five days of ageing. "The most important determinant of fresh colour appears to be ultimate pH. Most of the lamb loin meat was acceptable in terms of fresh meat colour.

"We also found that IMF and mineral content affect the browning of meat during retail display, hence playing a role in shelf-life management. "Overall, the breeding and management practices that increase muscle IMF levels and the processing practices that optimise muscle pH post-slaughter do most to improve the tenderness of lamb. "The confounding factor is that extension of retail colour stability may be antagonistic to traits associated with tenderness, particularly IMF level and the rate of pH decrease, though more work will help us to unravel this area," she said.

## MAIN RESULTS IN DETAIL:

**MEAT COLOUR:** The majority of samples would be considered to have acceptable redness by 95% of consumers. Older lambs have more pigment, a darker colour and a higher level of myoglobin pigment than younger lambs. Carcasses from lambs finished using high-energy pelleted diets have less redness compared with those from lambs fed low-energy diets and pasture. Results suggest that colour stability during retail display has moderate heritability and that it is likely to be responsive to genetic selection.

**TENDERNESS:** On day 1 post-slaughter, the proportion of acceptable tenderness among flocks ranged from 0.5% for flock 1 to 58% for flock 8. On day 5 post-slaughter (i.e., after 5 days of ageing), most flocks produced acceptably tender meat (71–95% of samples were acceptable). Females produced meat that had a lower shear force on days 1 and 5 post-slaughter and had a lower shear force difference than wethers, although, while the difference was significant, it would most likely not be detected by the consumer.

**INTRAMUSCULAR FAT:** Australian lamb contains 4–5% IMF, and studies have demonstrated that this level of fat is required to achieve consumer satisfaction in Australia. An IMF content of less than 3% has a particularly detrimental effect on palatability. A new finding is that tenderness depended on IMF content and increased with IMF. Over the range of IMF in the flocks, the shear force at 5 days would be 10N lower from lambs with higher IMF. This means that a consumer eating the meat from lambs with higher IMF would require less 'bite' power to chew through the meat.

**BREED EFFECTS:** In general, Merinos take more time to reach slaughter weight than other breeds at given nutritional regime and thus will generally be older than other breeds at slaughter and have darker meat.

**SOURCE:** [farmonline.com.au](http://farmonline.com.au)

# RFID management tools working for our flocks and the Canadian Sheep and Lamb Industry: PART 2

In the last issue of From the Flock, we introduced three RFID systems that producers can utilize on their sheep and lamb operations. The article focused in tagging as a beginning or start point. Beyond the tag, where do we go from there? There are many tools available and they all can play a part in flock management. These tools come often with a significant investment cost, so in continuing on from last month's article, we will look at the cost differences in a very simplistic manner of labour savings in a system comparison.

## HANDLING SYSTEM COST COMPARISON

It has always been my firm belief that if an animal needs a tag we first need to be able to handle the animal so we can apply a tag with minimal stress to the animal's ear. The question that surfaces is: Can a handling system work for my operation and how much will it cost?

"Handling facilities are essential if producers expect to find any savings in labour and efficiencies in the management of their sheep", comments Anita O'Brien, one of the CSF Technical Extension Team working with producers on the RFID pilot project. So let's look at advanced management systems and the general costs associated with the handling component. Fully capable automatic pneumatic electronic systems are rapidly becoming a new norm for large sheep production systems. Investment in such systems is greater as compared to basic or midline manual handling systems. The investment cost, however, seems more reasonable when scaled over the entire flock. For example, an estimated \$20,000 system over a flock size of 500 is a cost of \$9.49/year/head over 5 years at 6% interest.

A Basic system with an estimated \$5,000 over a flock size of 500 is a cost of \$2.37/year/head over 5 years at 6% interest. This means we need to find an additional benefit of approximately \$7.12/year/head between Basic and Advanced systems.

Advanced systems have shown to be capable to handle, weigh and sort a sheep in less than 8 seconds/head (2 operators,) approx 500 head/hr. Basic systems often handle, weigh and sort sheep in the 20-50 second range/head (2 operators) Assuming a flock size of 500 sheep with an average handling occurrence of a minimum four times per year and an approximate labour rate of \$20/hour, the advanced system would save 15.6 hrs of labour, which translates into a \$3.12/year/head savings. Simply on labour savings alone, we have now brought the \$7.12 discrepancy between the advanced and basic systems down to a \$4/head/year difference. If we went further to look at areas of animal handling stresses, operator stress and fatigue, data collection accuracy, data recording speed, data storage, and more, we could easily find several more areas of cost savings that begin to translate into potential dollars generated.



## Food Safe Farm Practices Program

By Barb Caswell

I have used a number of articles to talk about the process that the Canadian Food Inspection Agency (CFIA) uses to assess Canadian on-farm food safety programs, a process referred to as Technical Recognition. As a result of the Canadian Sheep Federation's (CSF) recent review of the Food Safe Farm Practices Program completed by our Technical Committee of producers, veterinarians and staff, the Canadian Sheep Federation took CFIA's advice to reapply for Technical Review Part I. Reapplying would be much less demanding on human and financial resources, in contrast to submitting each individual edit for on-going review. Most of the program edits related to a need for clarification on practices and reducing the duplication and, as a result, the length of the Food Safe Farm Practices Producer Manual. The Technical Committee, while all in agreement that the program that has been developed over the past decade is of high caliber, has moved towards a focus over the past two years and into the future of fine tuning the program to increase ease of implementation for producers.

As part of reapplying for Technical Review Part I, I participated in a five day face to face meeting on November 15th to 19th with a Review committee assembled from CFIA and provincial governments. The Committee had some excellent comments, which resulted in a list of changes required to complete Phase I of the Technical Review process. The suggestions from the Review Committee related both to the items that had been changed as a result of CSF's latest review, as well as some changes related to updating the language and clarity of the Hazard Analysis Critical Control Points Generic Model and Producer Manual. Staff feel confident all program changes will be positive with minimal increases to the requirements on the producers during implementation of the program. Staff are currently working on the necessary changes, with the expectation to have them back to CFIA by the end of 2010.

Pending acceptance of the changes by CFIA, the CSF On-Farm Food Safety Technical Committee and the CSF Board, staff are hopeful to have an updated Food Safe Farm Practices Producer Manual available to producers early in 2011.

CSF would also like to welcome Niki Petrie of Agrapoint, who will be helping with the Food Safe Farm Practices program over the upcoming months.



## Why There is no Live Test for Scrapie

By Courtney Denard, National Scrapie Coordinator

To date, researchers have not been able to develop a live animal test for scrapie. This means, the only 100% proof test for diagnosing scrapie in sheep or goats is the ELISA test, which is performed on the animal post-mortem. Producers often ask why a live test, like a blood test, has not yet been developed for scrapie. To answer this question, one must understand the nature of disease.

Scrapie belongs to the group of diseases known as Transmissible Spongiform Encephalopathies (TSEs). TSEs occur in a number of different animals, for example, Bovine Spongiform Encephalopathy in cattle and Chronic Wasting Disease in cervid.

The TSE diseases are extremely unique in the nature of the disease process, and although many of them have been around for a long time, it has only been since the early 1990s that the agent has been identified. The TSE agents are usually host specific and do not cause disease in another animal species.

The TSEs are transmissible (as the name suggests), however, they are neither a virus nor bacteria nor any other living form of transmissible agent that has been known to exist. The TSEs are caused by a protein-only agent, called a prion protein.

All sheep have normal prion proteins in their body that are produced and broken down by the body's normal systems. In this case, the animal is healthy. If a sheep picks up a scrapie prion protein (generally through ingestion), it acts as a template to cause normal prion proteins to mis-fold into a configuration that the body can no longer destroy. This leads to an accumulation of the scrapie prion protein in the animal.

It is this accumulation of the scrapie prion, in the brain, that leads to the death of brain cells and the clinical signs of scrapie, and then ultimately leads to the animal's death.

There is no known treatment or prevention for the TSE diseases. All of the TSE prion proteins, including scrapie, are very difficult to isolate and although a lot of research has gone into developing a live animal blood test for TSE agents, there has not been one found to date.

Scientists are getting closer to developing a live animal test, and it is hoped that in the near future, they will succeed. Until they do, a 100% accurate scrapie diagnosis on an individual sheep or goat can only be confirmed through the ELISA test.

## Government of Canada Cracks Down on Livestock Transport Violators: New Regulations More Than Double Fines

OTTAWA, ONTARIO - The Government of Canada is cracking down on those who mistreat and improperly transport livestock by more than doubling current fines - the first increase in over 10 years. Effective immediately, administrative monetary penalties (AMPs) of up to \$10,000 can be imposed, more than doubling the previous maximum penalty of \$4,000, on those who violate the Health of Animals Act.

"The agriculture industry knows that a healthy farm and processing business begins with healthy animals and while the majority handles and transports animals safely, a few need to do better," said Agriculture Minister Gerry Ritz. "Our Government is providing the Canadian Food Inspection Agency with the tools it needs to impose tougher fines and improve animal welfare."

The CFIA will now be able to impose fines up to a maximum of \$10,000 instead of \$4,000. The CFIA will retain the ability to increase fines by up to 50% of the maximum fine for repeat offenders. The CFIA will now also have the ability to look back into the past five years, instead of three years, of the offender's history. For example, if an offender commits his second very serious violation within five years, the CFIA will now have the ability to impose a fine of up to \$15,000, instead of the previous maximum of \$6,000.

**SOURCE:** <http://www.inspection.gc.ca/english/corpaffr/newcom/2010/20101027e.shtml>

MALIGNANT CATARRHAL FEVER - SEE  
PAGES 8-10

SOURCE: SASKATCHEWAN  
GOVERNMENT, MINISTRY OF  
AGRICULTURE

<http://www.agriculture.gov.sk.ca/Default.aspx?DN=8f2ce17f-8496-40ea-9e25-18314800f75c>

# MALIGNANT CATARRHAL FEVER

## LIVESTOCK

### **What is Malignant Catarrhal Fever (MCF)?**

MCF is a fatal viral disease of bison. Other ruminant animals such as cattle, deer and moose are also susceptible to MCF.

### **What causes MCF?**

MCF is caused by the ovine (sheep) herpesvirus-2 (OvHV-2). Although many sheep are carriers of OvHV-2, the virus does not cause clinical disease in sheep.



### **How does the virus spread from sheep to bison?**

The virus is shed in the nasal secretions of carrier sheep. It can be spread to bison through direct contact with carrier sheep; however, the virus also becomes aerosolized (airborne) and can travel long distances in the air. MCF has been documented to occur up to five kilometres from large sheep feedlots.

### **Is MCF passed from bison to bison?**

No. Several studies have shown that bison with MCF do not pass the virus on to other bison.

### **What are the symptoms?**

Bison may be found dead without symptoms, become ill and die in seven to 10 days, or develop a chronic form in which they are ill for months before they die. Symptoms in bison sometimes are very subtle and may be missed or misdiagnosed, as bovine viral diarrhoea virus (BVDV), respiratory virus, or a bacterial infection.



## Symptoms

The following are some of the most common symptoms:

- Depression – head down, animal separates from herd, reduced or loss of appetite.
- Cloudy/ulcerated eye – slightly gray to totally white, may be in one or both eyes. In more extreme cases, the eye could bulge, or even rupture.
- Weeping eye – tearing from a slight bit to two to four inches of wet hair under the eye.
- Snotty nose – watery discharge to white (milky) mucous strands from one or both nostrils (more severe in cattle than in bison).
- Salivating – clear watery mucus dripping from the mouth.
- Erosions/ulcers – small sores or open lesions in the mouth which can extend into the throat and esophagus.
- Fever – up to 42.5 C, but the temperatures can vary over a wide range.
- Swollen joints – may be seen 10 to 12 days prior to onset of any other symptoms.
- Difficult urination – frequent, painful urination, or bloody urine.
- Other symptoms – coughing, aborted fetus, dehydration, diarrhea, tremors or circling.



### **Is there a treatment for MCF?**

No, there is no effective treatment available for MCF in bison. Bison which become clinically ill will invariably die.

### **Are there times during the year when MCF occurs more often?**

MCF can occur any time throughout the year. It appears to be more prevalent during the winter months, which is when lambs come of age (between six to nine months). This group of sheep may shed more virus. It is also possible that the virus survives better in the cold winter season. Carrier sheep shed more virus and bison are more susceptible during times of transportation, handling, birth and weaning.

### **Does the virus survive in the environment?**

The virus can survive up to 72 hours in the environment, but may survive up to 13 days if the environment is moist.

### **Is MCF preventable?**

In general, increasing the distance between sheep and bison reduces the risk. Information has changed in recent years as to the distance that should be kept between bison and sheep. Currently, there is still no definitive science on what is considered a safe distance. This is because the risk of MCF varies depending on many factors besides distance, such as the age of the sheep; the size of the flock; climate; wind; and temperature.

### **What is the prevalence of OvHV-2 in the Canadian sheep flock?**

The prevalence of OvHV-2 in the Canadian sheep population is unknown. Studies conducted in the USA suggest that OvHV-2 may be very prevalent in North America. Research specific to the Canadian situation is required.

### **Is there a vaccine for MCF?**

There is no vaccine to prevent MCF in bison, nor is there a vaccine for the virus in sheep.

### **What do I do if I think an animal has MCF or has died of MCF?**

If you suspect your animal has MCF, contact your local veterinarian. Tests can be done on live or dead animals to determine if they are infected with the virus. If the animal has been found dead without prior symptoms, it is important that other causes of sudden death, such as anthrax, are ruled out.

If MCF is found in your herd, your veterinarian can advise you on appropriate biosecurity measures you can take to minimize the potential for future incidents.

### **For more information:**

- Contact Dr. Wendy Wilkins, Disease Surveillance Veterinarian, Saskatchewan Ministry of Agriculture, Livestock Branch, at (306) 798-0253; or
- E-mail [wendy.wilkins@gov.sk.ca](mailto:wendy.wilkins@gov.sk.ca)