MONTHLY NEWSLETTER FOR THE CANADIAN SHEEP INDUSTRY

FROM THE flock

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IN THIS ISSUE:

RECOGNITION

Funding for the Canadian Sheep Identification Program and the Canadian Sheep Federation's Food Safe Farm Practices Program, has been provided by Agriculture and Agri-Food Canada through the Canadian Integrated Food Safety Initiative under Growing Forward.

Funding for the Voluntary Scrapie Flock Certification Program has been provided through Agriculture and Agri-Food Canada's (AAFC) AgriFlexibility program.

Opinions expressed in this document are those of the Canadian Sheep Federation and not necessarily those of AAFC.

Timelines towards Mandatory RFID Tags are adapted to meet industry and government needs

Discussions around traceability for the Canadian Sheep Industry have been and continue to be a major focus of the Canadian Sheep Federation's Board of Directors and staff.

In June 2010, the Canadian Sheep Federation approved a motion to move the sheep industry towards mandatory RFID tags. This decision was given a great deal of consideration. Not only does an RFID system help sheep producers meet anticipated traceability requirements, it also gives producers an opportunity to move the industry forward.

Government continues to support a mandate to phase in the necessary infrastructure to allow for the tracing of products and food animals from the point of origin (the farm) to the consumer starting in 2011. As such, the sheep industry, in conjunction with other species that have either chosen to move forward and/or were considered one of the priority species with sheep (i.e. beef, swine and poultry), continue to discuss with government what mandatory traceability will look like. With the necessary infrastructure in place, identified commodities will continue to negotiate with government what the regulations will look like to facilitate a 'farm to fork' traceability system.

As such, the Canadian Sheep Federation still feels confident that a move towards mandatory RFID tagging will best position our industry to discuss with government what the future of traceability will look like for our industry, in addition to protecting our industry and remaining competitive with importing countries such as Australia, New Zealand and the United States. Currently, Canadian producers only supply 47 per cent of the lamb that Canadians consume. We have a market ready and waiting for Canadian lamb and an RFID system gives us one of the tools we need to increase production to fill that demand.

As primary producers, implementation of new technologies by those further down the value chain requires having animals equipped with RFID tags in order to test and use those technologies. In the end, all those along the value chain will be required to comply with new regulations once in place.

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Mandatory RFID Tags

CSF remains committed to working closely with provincial organizations to provide them with timely communication, information and education required to make sure the RFID system provides a positive return for the industry.

We strongly believe that this continues to be the right decision for our industry. And we're confident it will play a key role in helping us realize our tremendous potential. If you have any questions or concerns, please contact Barbara Caswell, Interim Executive Director, at barbara@cansheep.ca or 1.888.684.7739, or the National ID Coordinator, Daniel Dion at daniel@cansheep.ca

Timeline

As we continue forward with the timelines that were approved by the CSF Board of Directors in June 2010 to move towards mandatory RFID tags, the Canadian Sheep Federation has felt it necessary to add some further clarification around the timelines to best address producer concerns and facilitate a smooth transition for the industry. As such, please note the following:

July 1, 2011

- Ketchum Kurl lock # 3 and Allflex dangle tags will no longer be available for sale from the manufacturers, Ketchum and Allflex, as Canadian Sheep Identification Program (CSIP) tags;
- Retailers will have until October 1, 2011 to sell any remaining stocks.

January 1, 2012

- Producers are encouraged to tag all animals born or tagged after this date with CSIP approved RFID tags (Shearwell Data Ltd SET tag or Allflex RFID Button Tag).
- Producers need to carefully monitor their stocks and use up inventory of the Ketchum Kurl lock #3 and Allflex dangle tags before December 31, 2012.
- If you tag an animal which will still be in the population as of January 1, 2013 (i.e. breeding stock) with a non-RFID tag, that animal will be non-compliant after January 1, 2013. As a result, you will be required to retag the animal with a CSIP approved RFID tag and cross-reference with the old identification number if the animal is to leave the farm after January 1, 2013.

January 1, 2013

- Ketchum Kurl lock #3 and the Allflex dangle tags will be officially removed from the list of approved tags for the CSIP and will no longer be accepted from this date forward at sales, abattoirs or by the Canadian Food Inspection Agency (CFIA) for shipping, transfer or sale of sheep in Canada.

What's New in TSE Research?

The 2011 Prion Conference was held in Montreal earlier this year, showcasing some of the encouraging new studies and findings taking place in TSE research and we thought it a great opportunity to share some of these finding with you.

Transmissible spongiform encephalopathies (TSEs) are infectious, chronic, progressive and fatal neurodegenerative disorders that affect different species. TSEs vary amongst species and the exact mechanisms of transmission and infection remain largely unclear. One fact that does hold true is that TSEs are linked to a type of protein called Prions, self-propagating forms of protein found in cells within the body. There is much on-going research into the control of TSEs including those causing Scrapie and Chronic Wasting Disease. Scrapie and CWD TSEs are slightly unique from others in that they are transmitted horizontally through direct animal contact or contact with an infected environment, and they manifest as endemic infection (confined to a particular area) as opposed to the epidemic infections (extremely prevalent and widespread) associated with BSE.

Wathne et al (2011), suggest that oral transmission, for example through saliva?, of scrapie is the most common route of infection and lesions to the skin or mucosa will facilitate this transmission. The findings of Denkers et al (2011) concurrently with those of Seelig et al (2011) support this theory and propose that as part of their natural foraging nature, cervids likely experience minor oral lesions and abrasions that impact their susceptibility to prion entry and subsequent infection. Haley et al (2011) claim that infectious prions of cervids shed through saliva, urine and feces lending to their contamination of commonly inhabited environment. In scrapie research in sheep and goats, Lowe et al (2011) theorize that prions can replicate to higher levels in olfactory neurons in the nasal mucosa because of the neuron-rich environment of that sensory epithelium, and that any later damage to the mucosa as the result of injury, inflammation or infection can accelerate prion release into nasal secretions. The development and use of a new protein misfolding cyclic amplification (PMCA) technique is allowing for prion detection in various tissues and secretions such as milk, feaces, urine, saliva, mucous and blood at much lower levels of infection than could previously be detected. Perfection and recognition of this technique could become a useful tool for disease detection in the future.

Research into prion contaminated environments continues with some fairly consistent findings. Kuznetsora et al (2011) claim that soil can serve as a stable reservoir for infectious prion proteins and that soil types like clay based earth can enhance prion infectivity where soils like quartz sands bind PrPSc (abnormal prion protein associated with TSEs) less avidly. Smith (2011) supports the finding of lasting prion contamination of soil with very little reduction in titre over time but added that there is also very little migration of TSE through the soil. Nagaoka et al (2011) disagree slightly with these findings, having found a decrease in soil PrPSc levels over a 6 month period. Both camps agree that more research is necessary for the sake of accuracy.

Beyond the on-going research into prion transmission and mechanism of infection, much work is being done on the immunity or resistance to TSEs in sheep, goats and cervids.

The facile horizontal transmission of these diseases and the clear agreement that natural shedding and environmental contamination are commonplace beg the question; why have the diseases not completely taken over the industry? Although no natural immunity to prion exposure has been found, existing and emerging research shows an influence of genotype on the effect of the disease. The identification of specific scrapie-

TSE Research

resistant genotypes in sheep are quite clearly defined and commonly used in disease control programs throughout the world including some pathways in Canada's Voluntary Scrapie Flock Certification Program. A study by Hurtado et al (2011) suggests that statistical analysis of data has shown a protective role of certain genotypes of goats against classical scrapie. Fast et al (2011) support the influence of the goat genotype on the susceptibility to a TSE infection and further claim that there is a clear influence of the goat genotype on the susceptibility to BSE, with K222 genotype goats being far less susceptible. The European goat-BSE consortium is using these genotype tools to further eradicate the disease by breeding for TSE resistance in goats (Langeveld et al, 2011). Similar cervid based research has shown that certain homozygous genotype white-tailed deer have a 4 time greater risk of CWD infection where their heterozygous genotype counterparts survive CWD infection 49% longer, living an additional 8.25 months on average. Common to all of the TSE diseases is the realization that prion variation influences the susceptibility to and progression of the disease in an individual. Gonzalez et al (2011) suggest that natural scrapie agents consist of a mixture of strains that are differentially propagated in sheep of varying genotypes, further lending to the complexity of genotype resistance.

One common thread through all branches of TSE research is that a quality disease control program will be multifaceted. While breeding for TSE resistance can be a useful tool in controlling infection rates, there is of yet no full-proof genetic method of eliminating disease. Eradication of TSE can be obtained while maintaining a certain level of all genotypes, thereby allowing the continuance of genetic diversity (Langeveld et al, 2011). Limiting exposure to infectious animals and environment are fundamental in controlling the spread of the disease but are further complicated by the lengthy incubation period and opportunistic nature of the prion.

Long term disease control commitment and monitoring continue to be pivotal in TSE disease control and eradication.

References

Denkers et al, 2011. Minor Oral Lesions Facilitate CWD Infection. Proceedings from Prion 2011. Montreal.

Haley et al, 2011. Detection of CWD Prions in Urinary, Salivary, and Intestinal Tissues of Deer: Potential Mechanisms of Prion Shedding and Transmission. Proceedings from Prion 2011. Montreal.

Hurtado et al, 2011. Prion Protein Gene Polymorphisms in Spanish Goat and Their Association with Classical and/or Atypical Scrapie. Proceedings from Prion 2011. Montreal.

Kuznetsova et al, 2011. Soil Properties as a Factor in CWD Spread in Western Canada. Proceedings from Prion 2011. Montreal.

Langeveld et al, 2011. State of the Art and Perspectives for Genetic Eradication of TSEs in Sheep and Goats. Proceedings from Prion 2011. Montreal.

Lowe et al, 2011. Accelerated Prion Shedding Following Damage to the Olfactory Epithelium. Proceedings from Prion 2011. Montreal.

Nagaoka et al, 2011. Sensitive Detection of Scrapie Prion Protein in Soil. Proceedings from Prion 2011. Montreal.

Seelig et al, 2011. Identification of PrPCWD in the Salivary Gland Epithelium of White-tailed Deer: Novel Insights Into Mechanisms of CWD Horizontal Transmission. Proceedings from Prion 2011. Montreal.

Smith. A, 2011. High Survival Rates of TSE Infectivity Buried in Two Soil Types. Proceedings from Prion 2011. Montreal.

Wathne et al, 2011. Involvement of Skin DC Subsets in TSE Transmission. Proceedings from Prion 2011. Montreal.

Helpful Hints from the Updated VSFCP National Standards & Accredited Veterinary Manual

The newly published National Standards and Accredited Veterinarian's Manual for Scrapie Flock Certification Accreditation have been released by the CFIA. New to both documents are some very helpful tools for producers.

The updated National Standards should be read by all producers and are available in section 7.9 Appendix 3 of the Accredited Veterinarian's Manual at: http://www.inspection.gc.ca/english/anima/heasan/man/avmmva/avmmva_mod7_a3e.shtml

Those wishing to enrol in the Voluntary Scrapie Flock Certification Program often have questions regarding enrolment requirements based on individual circumstances on farm. The flow chart on page 7 (from Section 7.4 of the Accredited Veterinarian's Manual) is quite useful in interpreting entry level requirements.

Further to the varying entry requirements is a mandatory cleaning and disinfecting step, only for farms starting a new flock that wish to apply for advanced enrolment status, but who have (or uncertain if they have)a premise that has housed small ruminants within the past 10 years. The CFIA has established an approved cleaning and disinfecting protocol in section 7.4 of the Accredited Veterinarian's Manual which needs to be done under the supervision of your accredited veterinarian where applicable. The approved cleaning and disinfecting protocol calls for sanitation of all interior and exterior structures that have contained small ruminants as well as birthing areas. Bedding, manure and degradable waste material from containment and birthing areas needs to be buried or composted for 6 months and disposed of in a location not accessible to small ruminants.

Where birthing areas are located on soil, remove soil to 1-2 inches below disturbed surface and bury it or dispose of it in an area not accessible to sheep and goats. Solid surfaces (such as cement, metal, wood etc), need to be stripped of organic debris and sanitized in accordance with the sanitary precautions and proper use of disinfectants for scrapie protocol as described in section 7.9 Appendix 2 of the Accredited Veterinarian's Manual.

For both safety and effectiveness, it is recommended that the chemical disinfection agents of sodium hypochlorite and sodium hydroxide be made and used as per the instructions in section 7.9 Appendix 2 and section 7.4 respectively of the Accredited Veterinarian's Manual, under the supervision of the accredited veterinarian.

*"**Note:** Other traditional disinfectants such as VIRKON are NOT effective against prion agents. Disinfection of instruments must be done with either sodium hypochlorite or sodium hydroxide."*

(CFIA_ACIA-2603316-Accredited Vets Manual-7.9 Appendix 2, November 2010)

Remember when dealing with the collection of brain samples to use appropriate precautionary measures.

"Scrapie is not considered to be a human pathogen; however, normal sanitary precautions against a possible range of pathogens should be taken. Wear protective clothing, gloves and face protection when collecting brain specimens. Always avoid direct contact with brain tissues. Personnel at tissue harvesting sites should take precautions to avoid ingestion of the agent."

(CFIA_ACIA-2603316-Accredited Vets Manual-7.9 Appendix 2, November 2010)

Updated VSFCP National Standards & Accredited Veterinary Manual

For both safety and effectiveness, it is recommended that the chemical disinfection agents of sodium hypochlorite and sodium hydroxide be made and used as per the instructions in section 7.9 Appendix 2 and section 7.4 respectively of the Accredited Veterinarian's Manual, under the supervision of the accredited veterinarian.

Section 7.9 Appendix 1E: List of Laboratories provides a list of laboratories conducting various Scrapie-related testing and can be found at: www.inspection.gc.ca/english/anima/heasan/man/avmmva/avmmva_mod7_a1e.shtml#e

The list of labs performing various Scrapie-related testing sees some address and contact information changes in CFIA approved labs performing BioRad ELISA testing on obex (brain) samples, and also the addition of information on the CFIA-approved lab that is available for third eyelid and RAMALT testing for this program. Please check the above link for the updated lab information.

As always, we remain available to help you with all of your inquiries regarding the Voluntary Scrapie Flock Certification Program and can be reached by any of the following means:

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Toll Free: 1-866-534-1302
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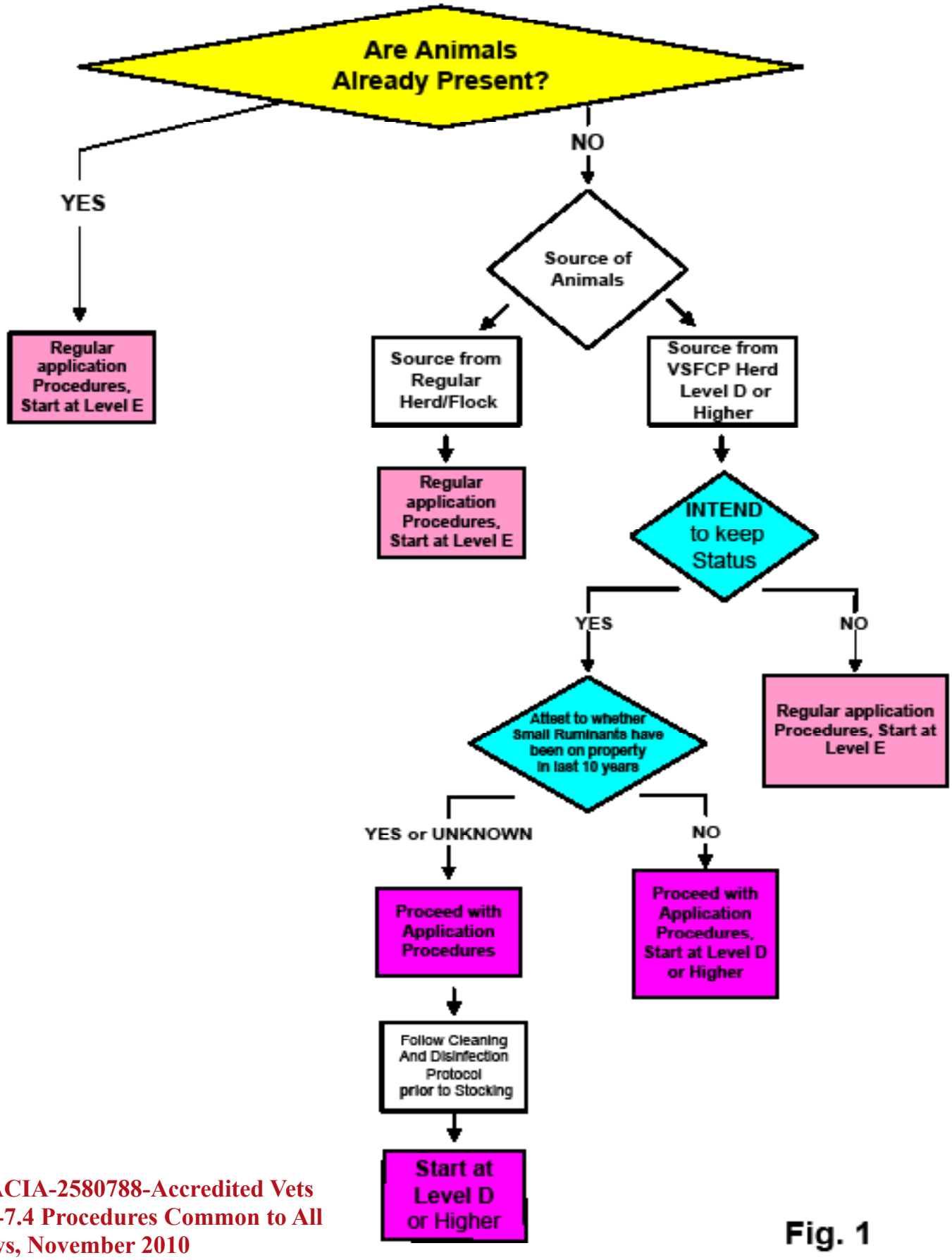

CFIA_ACIA-2580788-Accredited Vets Manual-7.4 Procedures Common to All Pathways, November 2010

Fig. 1