

Understanding Maedi-Visna

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The Maedi-Visna virus (MVV) is a virus affecting both sheep and goats and can be a major source of economic loss. Maedi-Visna is closely related to the caprine arthritis encephalitis virus (CAEV) of goats, and these viruses are related to the human immunodeficiency virus (HIV).

This virus can cause four chronic disease states in sheep including mastitis, pneumonia, arthritis, and encephalitis. In sheep, however, pneumonia and mastitis are the most common symptoms¹. Since mastitis is one of the main disease symptoms, the virus is transmitted directly to the newborn lamb through the colostrum and milk, but it can also be transmitted through nasal secretions and sexual transmission is also possible².

There is currently no treatment or vaccine, and animals remain infected for life³, so producers must turn to management strategies to combat this infection. MVV tends to be widespread around the world, however despite this widespread nature, very little is known about how this virus behaves once it has infected an animal. However, OSMA has recently teamed up with researchers at the University of Guelph to work on a project that investigates the immune responses to Maedi-Visna virus infection.

Before treatment therapies, or an effective vaccine can be developed, it is first necessary to understand how the virus behaves and how the immune system reacts to various stages of infection. Since MVV causes chronic inflammation in various tissues, it is likely that the immune system is responding inappropriately to the viral infection.

This research project will investigate how MVV alters the function of the cells it infects, but will also investigate other disease interactions. *Mycobacterium avium* subsp. *paratuberculosis* (MAP), the causative agent of Johne's disease, is also widespread in Ontario flocks and it is possible that sheep will harbor more than one infection. Understanding these disease interactions is very important for improving diagnostic tests and vaccine development. It is also important to understand how one disease may affect susceptibility to other infections. This two-year project began in September and is scheduled to wrap up by December of 2015. For more information regarding this and other OSMA projects please visit www.ontariosheep.org.

References

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