



# **Cleon's Corner**

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## **Scrapie**

Scrapie is slowly progressive disease of sheep and goats. It is a disease that causes a degeneration of the central nervous system. The disease was first described in sheep in Great Britain and Western Europe over 250 years ago. Scrapie was introduced into the United States in 1947 from Great Britain via Canada. Scrapie has had a significant impact and financial loss to the entire US sheep industry. Over 900 flocks have been diagnosed with scrapie since its introduction in 1947.

### **Introduction**



Scrapie belongs to a group of similar diseases known as transmissible spongiform encephalopathies (TSE). These diseases affect man and some animals. Creutzfeldt-Jacob Disease (CJD) and the new variant (nv) CJD are the two most publicized TSE's of man. Chronic Wasting Disease (CWD) affects wild deer and elk. Transmissible Mink Encephalopathy is a rare degenerative nerve condition in captive mink. Bovine Spongiform Encephalopathy, a degenerative disease affecting the central nervous system of cattle, was first diagnosed in Britain in 1985. Commonly known as "mad

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cow disease" BSE was first found in the United States in 2003. A form of TSE has been identified in domestic and wild members of the cat family and in captive wild ruminants. To date, there is no scientific evidence that these diseases are transmissible between species.

## **Nature of the Transmissible Agent**

Scientists report that the causal agent is very complex form of a prion protein that reacts with the normal prion protein of the host. Certain genes of the host react with the agent, which determines the resistance or incubation period. The current view is that clinical scrapie results from the interaction of one or more strains of the infectious agent with one or more host genetic factors. Testing for genetic resistance has been promoted.

## **Transmission/Incubation**

Transmission appears to be primarily from dam to offspring early in life. It is thought to be spread most commonly from ewe to offspring and to other lambs through contact with the placenta and placental fluids. Signs of the disease usually do not appear until 2-5 years after the animal is infected. The ram does not seem to play a major role in transmission as the agent has not been found in the seminal fluids or sperm. Transmission from sheep to goats has been reported, therefore, lateral transmission is possible.

## **Clinical Signs**

Scrapie is an insidious disease of sheep and goats without fever. The clinical course is usually one to six months. The clinical signs start with a slight change in behavior. An animal may become nervous or aggressive, and separate itself from the rest of the flock. The animal may appear normal until startled or moved causing the animal to tremor and often go into convulsions. When forced to move there is a characteristic "bunny hop gait". Incoordination of the hind limbs is progressive as the disease

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continues. Extreme itching may cause the animal to rub the wool from its sides and rear quarters, bite and/or chew on themselves or others in the flock. The appetite remains normal but the animal continues to lose body condition. The clinical signs may vary. Some may not rub the wool while others may not show incoordination. Ovine progressive pneumonia, listeriosis, rabies, external parasite and toxins may have some of the same clinical signs.

## **Diagnosis**

Current diagnosis is based on a clinical history, histopathological changes in the brain and immunohistochemical detection. A live animal test is available utilizing a portion of the third eyelid.

## **Prevention**

Maintain a closed flock. Purchase animals from flocks that have been enrolled in the "Voluntary Scrapie Free Certification Program" for at least 3 or more years to reduce the risk of introducing the disease. Enroll in the "Voluntary Scrapie Free Certification Program."

*Prepared by Cleon V. Kimberling, Gerilyn A. Parsons, Jay Parsons, Anita Dennison, Terry Teraska, and Laurie Martinson*

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