

SCRAPIE INFORMATION FACT SHEET

- Scrapie is an infectious disease caused by a prion which is transmitted through placental tissues and fluids.
- The presence of Scrapie can be detected only in the brain and lymph tissue, including tonsils and third eyelid tissue, but not in blood.
- Genetic testing called Codon 171 indicates whether sheep are resistant or susceptible to the scrapie prion.
- Codon 171 classifications (hereinafter referred to as genotype) are RR, QR and QQ.
- Sheep with RR and QR genotypes are resistant to scrapie. Those with QQ are susceptible to scrapie only if exposed to the scrapie prion.
- There has never been a diagnosed case of scrapie in North America in a sheep with an RR or a QR genotype.
- Ewes with a QQ genotype can only have lambs with a QQ or QR genotype.
- QQ ewes infected with scrapie may transmit scrapie to their QQ fetuses but not to their QR fetuses.
- Since the scrapie prion is present in placental tissues and fluids of scrapie-infected ewes, scrapie can be transmitted to other QQ ewes or lambs at lambing time.
- Since scrapie is transmitted through placental tissues and fluids, the possibility of rams transmitting it is extremely unlikely regardless of genotype.
- Unfortunately there is not presently a uniform application of policy in dealing with scrapie infected flocks.
- Before Codon testing, most flocks with an infected sheep were entirely eliminated.
- Most officials now recognize the Codon testing and are currently excluding those sheep from elimination which have the RR or QR genotype.
- Further, in some instances QQ genotypes with a negative third-eyelid test may not be eliminated if moved to a location separate from the RR and QR genotypes. In that instance, the QQ ewes are bred to RR rams.

PROBABILITY OF GENOTYPES

	R	R
Q	QR	QR
Q	QR	QR

100% QR
0% RR
0% QQ

	Q	R
Q	QQ	QR
R	QR	RR

50% QR
25% QQ
25% RR

	Q	R
Q	QQ	QR
Q	QQ	QR

50% QR
50% QQ
0% RR

	R	R
Q	QR	QR
R	RR	RR

50% QR
50% RR
0% QQ

NOTE: The above charts represent the genotypes of the progeny when mating the above genotype combinations. The percentages would be definite if an infinite number of matings were made but will not be exact* for individual matings and should not be used in lieu of codon testing.

* However, zero percentages will *always* remain at zero.