

# Kleebachtal

## Clover Creek Valley



- Klaus Textor
- Veterinary Practitioner
- Burgstrasse 11
- Germany 35428 Langgoens- Niederkleen
- [www.spiderlamb.textor-online.de](http://www.spiderlamb.textor-online.de)

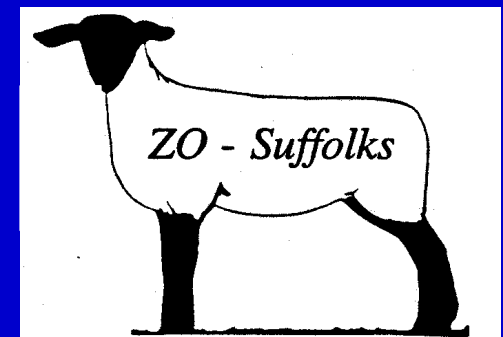
# Spider Lamb Syndrome



in Sheep

# Report about a case of Spider Lamb Syndrome in 2004, in a herd of Suffolk sheep in Hessen-Germany

- 8 ewe's, 3 tested spider positiv „gray“, **NS**
- 1 ram tested spider positiv „gray“, **NS**
- 16 lambs born, they where tested as follows
- 4 „Spiders“, **SS**
- 6 carriers (gray) **NS**
- 6 normal (white) **NN**



# ZO Suffolks Niederkleen Germany



Spider- Lamb- Syndrome = SLS

Ovine hereditary chondrodysplasia = OHC

- defines a monogene, autosomal, rezessive genetic defect in sheep, with deformations of the skeleton in young lambs. The defect is semilethal, depending a lot on the environmental conditions for the newborn lamb.
- the defect is first described in the late 70's in the USA for the Suffolk breed . It is thought to be found first as a Mutation in the late 1960's. It is found mostly in the blackfaced breeds in North America.

- 75% in Suffolks

- 24 % in Hampshires

- 1 % in Columbia

North Dakota State University 54 Lambs  
from 1981- 86

(because of crossbreeding with Suffolk)

(Southdowns and Oxfords are affected in small numbers)

# „Spider Lamb Syndrom“

SLS

# „Ovine hereditary chondrodysplasie“ OHC

- The Gene is controlled on a locus with two Allels.

- Allel X can have the value **-1 (N)**, Allel Y the value **1 (S)**

- Allel X = **N** for Normal

- Allel Y = **S** for Spider

- The following Genotyp-classes are possible

- XX = **NN** > Normal Normal >> Healthy

- XY = **SN** > Normal **Spider** >> Carrier

- YX = **NS** > **Spider** Normal >> Carrier

- YY = **SS** > **Spider Spider** >> Clinicle Spider „ill / sick“ !!!

# Spider Genetics

monogene, autosomal, recessive

Carriers are homozygous

Phenotypically / clinically looking like a Spider

A yellow square with a red border containing the letters 'SS' in red.

Noncarriers are heterozygous

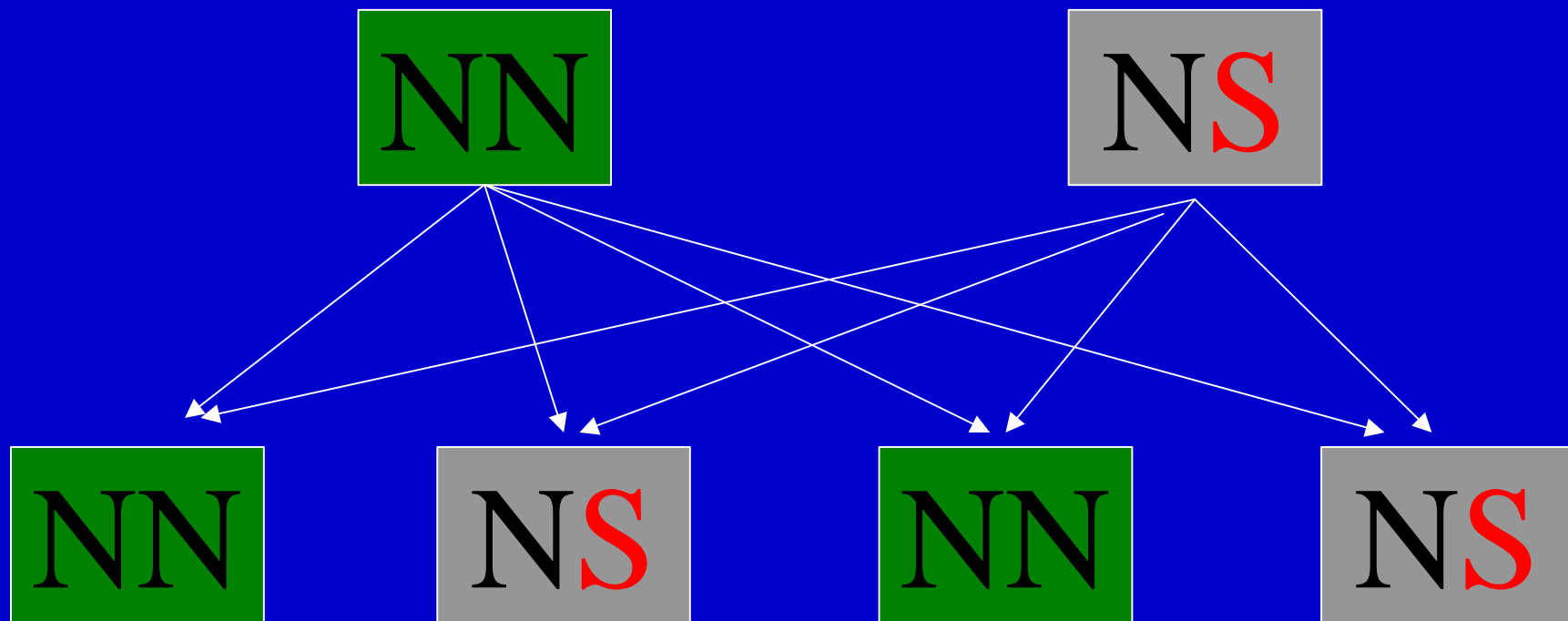
Phenotypically / clinically **not** looking like a Spider

A grey square with a black border containing the letters 'NS' in black.

Healthy animals are signed likewise  
they are homozygous normal

A green square with a black border containing the letters 'NN' in black.

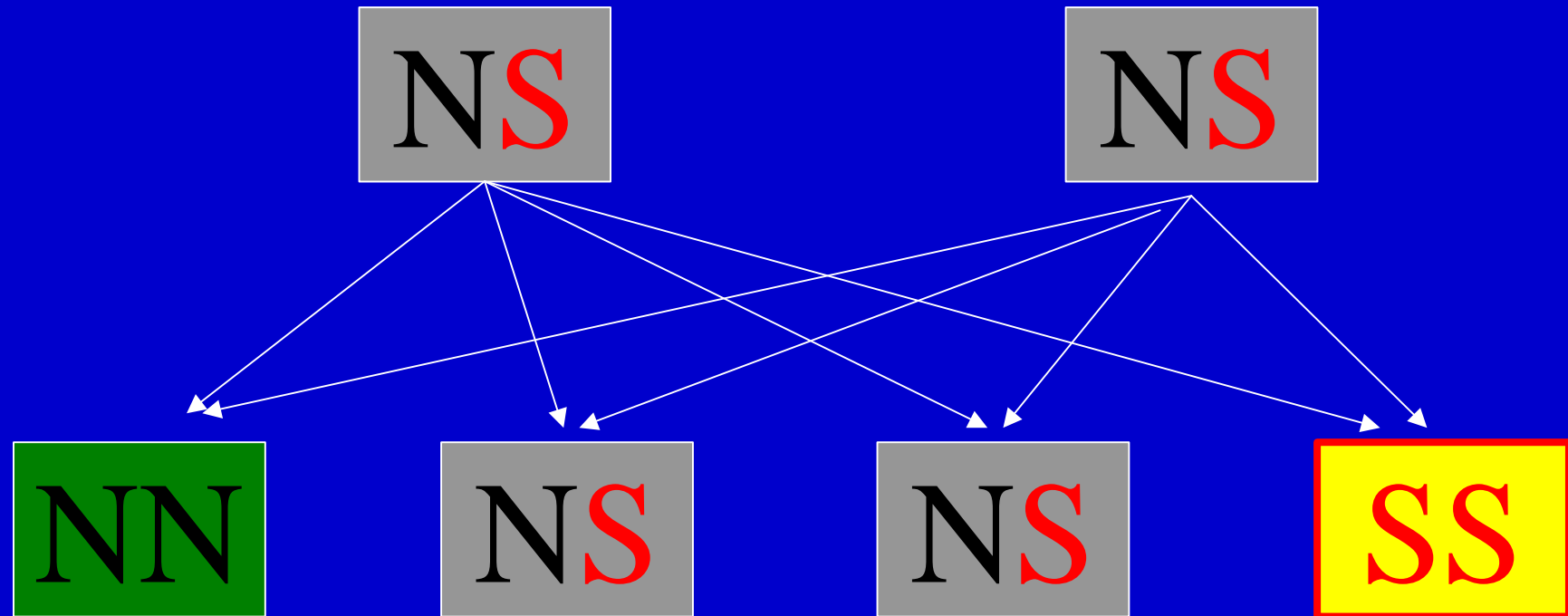
# Ovine hereditary chondrodysplasie „OHC“



NN = Normal / NS = Carrier / SS = Spider



# Ovine hereditary Chondrodysplasie „OHC“



NN = Normal / NS = Carrier / SS = Spider

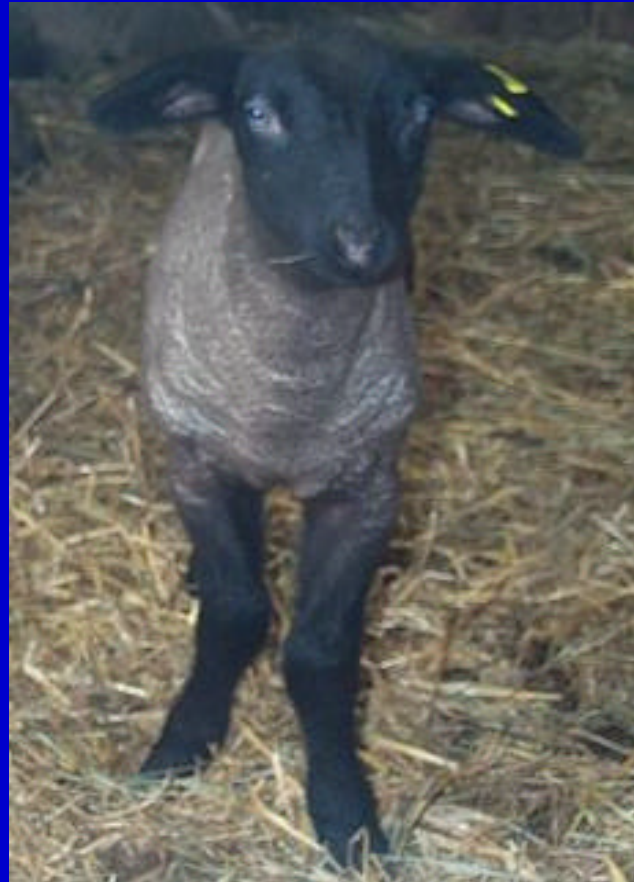
# Clinicle Signs

- Long bent limbs (above of Carpus or Tarsus) valgusform up to 30-45 °, like spiderlegs, sometimes very thin, sometimes like splayed leg in piglets .
- Skoliosis and or Kyphosis of the Spine >twisted spines .
- flat / narrow chests and rib cages/ abnormal long necks.
- roman nose .
- skull deformation.
- deformation of the legs, begins sometimes as late as 17 weeks after birth.
- eventually thin fur like in lambs born to early .
- partly born death/ or unable to stay alive, at birth.

# „SLS“ Spider Lamb Syndrom



Lamb 101-086



Lamb 709-5-003



Lamb 051



# Lamb 101-086 at 4 month of age



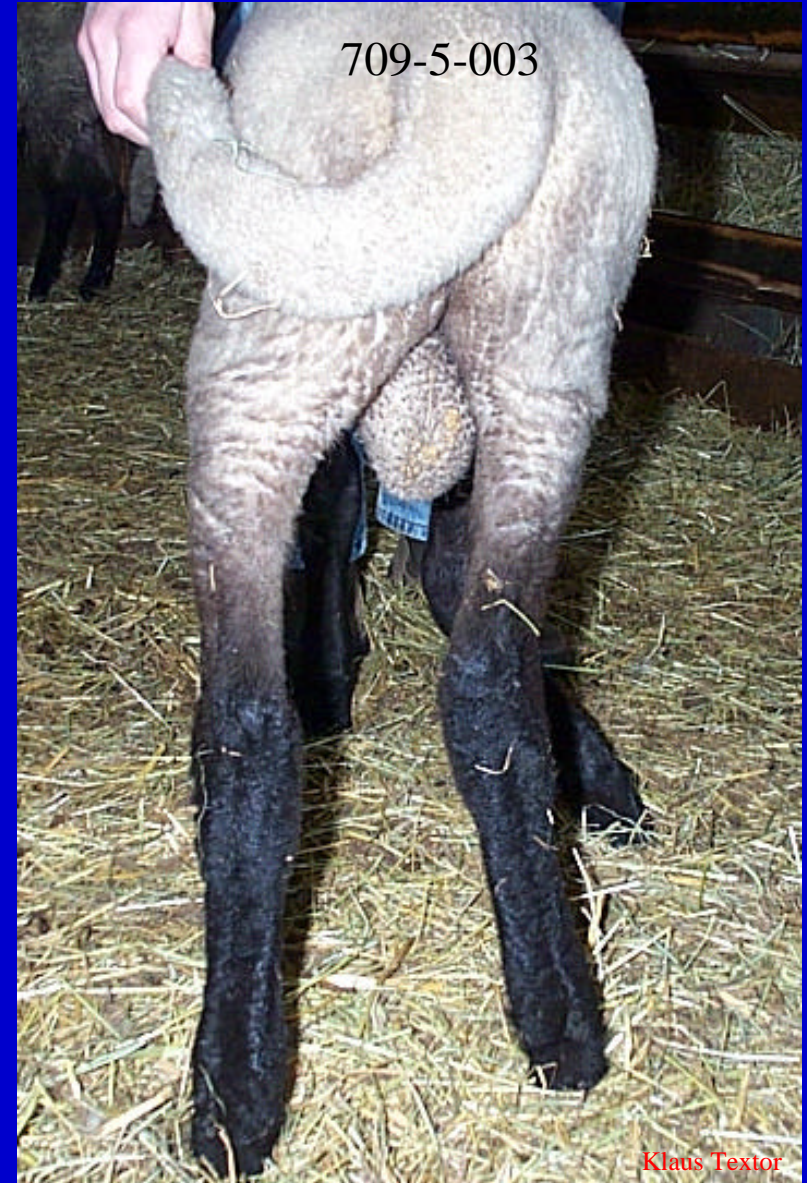
Klaus Textor



Klaus Textor



# 709-5-003 and Sister 004 12 weeks old





709-5-003 Lamb 4 Weeks typicle picture from the Side showing the length of body and neck also roman nose.



051 7 day's old



Klaus Textor

051 7 day's old





# 051 2 month old



Klaus Textor



Klaus Textor



# More Spider Lambs from a different Farm 12. Mai 2004



Bild KlausTextor

# Lamb showing the late form of a Spider

20.Sep. 2004 (like next picture)





# About 1 year old Spiders

Picture > Book Prof.Dr Bostedt  
U of Giessen, Germany

Typical roman nose, and spine deformation, pain in the hind legs.

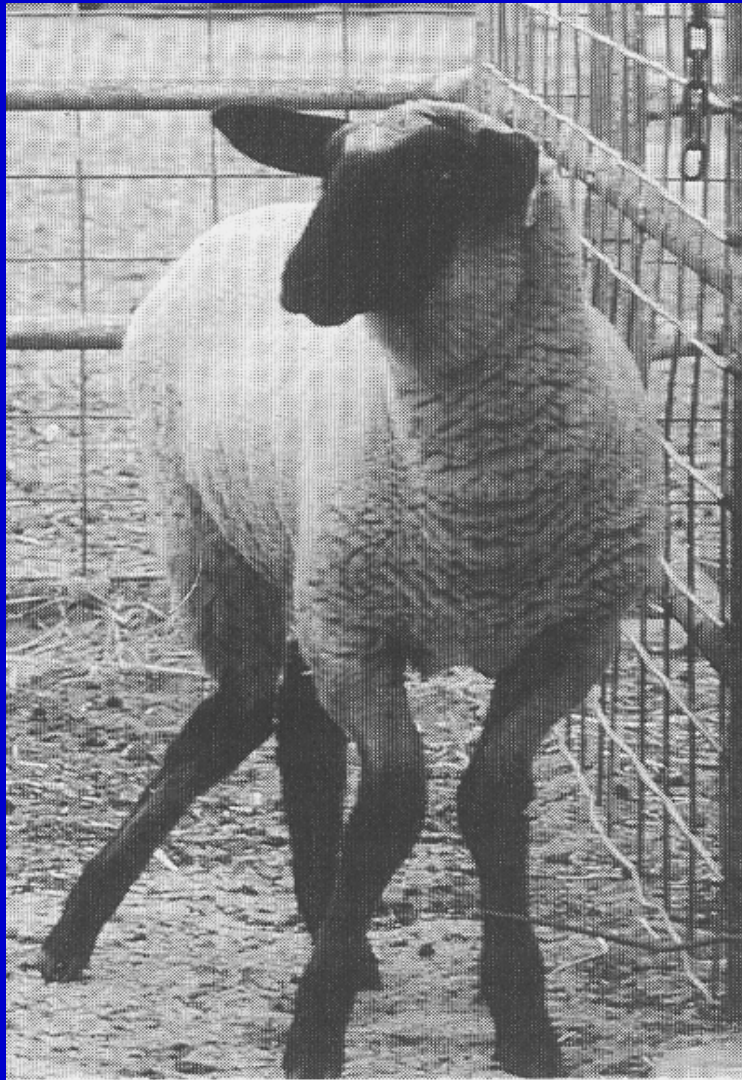


Bild Klaus Textor



# Spider Lamb about 1 year old



Bild KlausTextor



Bild KlausTextor

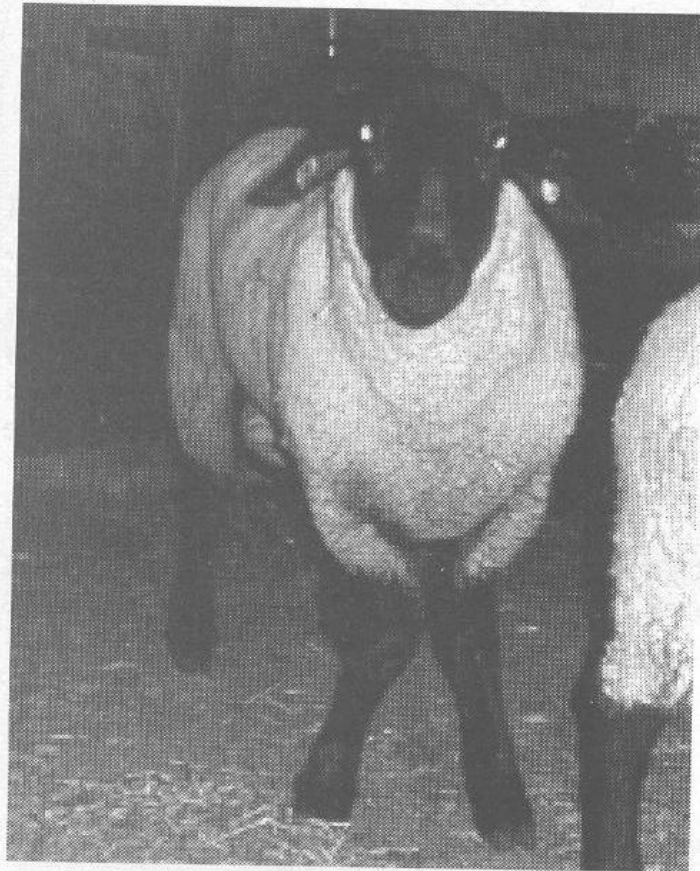
## Newborn and up to 1 Week old Spiderlambs



From : Genetic Defects in Sheep by Kris Sweiter, Erica Gacsala, Humberto Esquivel  
[http://www.ag.ansc.purdue.edu/sheep/ansc442/Semprojs/defects/genetic\\_defects.htm](http://www.ag.ansc.purdue.edu/sheep/ansc442/Semprojs/defects/genetic_defects.htm)



„Spike“ Testram  
for Semenfreezing  
(for AI programs)  
Catalog Elite Genetics 1996



**“SPIKE” 1003 213454M**

BD: 2/2/86

SIRE: N1723 180069M

DAM: DO 732 486974M

Klaus Textor

Dr.G.F.Kennedy  
Pipestone, Vet.Clinic, MN,  
with a Spider Lamb (internet-  
adress of the clinic)



Klaus Textor

# Skeletal Lesions

Aus : Food-Animal-Practice / Veterinary Medicine April 1987

**TABLE 2**

**A Comparison of Skeletal Lesions in  
16 Hampshire and 54 Suffolk Spider Lambs  
at Necropsy (1981-1986)**

Lesion	Suffolk		Hampshire	
	No. Affected	Percent Affected	No. Affected	Percent Affected
Abnormal forelimb	47	87	13	81
Abnormal hindlimb	37	69	10	63
Abnormal spine	28	52	10	63
Abnormal skull	19	35	3	19



# Pathology - What happens ?

- Cartilage transformation disorder from cartilage to bone during the growth period, mostly from the 2. nd Week on.
- Isles of cartilage stay where bone should be found ,
- Osteonekroses as well as exostoses are found,
- Sometimes not visible before the age of week 17.
- The transformation process from cartilage to bone is like > at the wrong time on the wrong place..

# Radiological pictures

„SLS “/„OHC“



# Radiology

- Extreme Valgusturns of Radius and Ulna.
- Degenerations and lipping of the growth plates of Radius and Ulna . Looking like an Epiphysitis.
- Isles of not transformed cartilage are found.
- Exostoses
- Osteonekroses

# SLS / OHC

## Legal Problems in Germany

- **Tierschutzgesetz** > § 11 b (Qualzucht)  
(animal rights law)
- **Tierzuchtgesetz** > § 1; 6; 19;  
(animal breeding law)
- **Produkthaftung ( Kaufrecht / Gewährleistung )**  
(product liability rights/ laws / guarantee for the product)
- **Grundgesetz** > § 20 a  
(German Declaration of Independence)

# History of the Test

- Test commercially available since 1997
- Until Juni 1998 more than 2.800 Sheep testet
- Frequence of the test, about 100 per Week.  
(north america)
- Test until today 100 % exact,  
validated on over 1000 Scheep.

[www.breedersworld.com /sheep/articles/spidergene.html](http://www.breedersworld.com/sheep/articles/spidergene.html)

# Testlab



**VITA-TECH**

Vita- Tech holds the patented rights.

1345 Denison Street  
Markham, Ontario L3R 5V2

2316 Delaware Avenue, #333,  
Buffalo, NY 14216-2606

## **SHEEP DNA TEST SAMPLE SUBMISSION FORM**

Tel: (416) 798-4988 Toll Free: 1 (800) 667-3411  
Fax: (905) 475-7309 [www.vita-tech.com](http://www.vita-tech.com)



# Testlab



1345 Denison Street  
Markham, Ontario L3R 5V2  
2316 Delaware Avenue, #333,  
Buffalo, NY 14216-2606

## SHEEP DNA TEST SAMPLE SUBMISSION FORM

Tel: (416) 798-4988 Toll Free: 1 (800) 667-3411  
Fax: (905) 475-7309 www.vita-tech.com

NAME:	DATE:
FARM/OWNER'S NAME:	PHONE NO:
ADDRESS:	FAX NO:
CITY/PROVINCE/POSTAL CODE:	E-MAIL ADDRESS:
COUNTRY	VETERINARY PHONE NO:
PREFERRED REPORTING METHOD (CHECK ONE): <input type="checkbox"/> MAIL <input type="checkbox"/> FAX <input type="checkbox"/> E-MAIL	

TEST INFORMATION	TEST CODE	TEST TYPE	COST PER SAMPLE (CDN)**
	SR 136	Scrapie Resistance Codon 136 (Single Test)	\$ 30.00
	SR 171	Scrapie Resistance Codon 171 (Single Test)	\$ 30.00
	SLSD	Spider Lamb Syndrome (Single Test)	\$ 32.00
	SR2D	Scrapie Codon 136 and 171 (Two Tests)	\$ 56.00
	SSD	Spider Lamb + Scrapie Codons 136 + 171 (Three Tests)	\$ 73.00

- ◆ Test results are available **3-5 BUSINESS DAYS** following date samples arrive at VITA-TECH®.
- ◆ Remember to sign and return the **GENETIC DISCLAIMER**. Sample instructions are provided on the next page.
- \* For Canadian residents, please add 7% GST.

SAMPLE INFORMATION	SAMPLE I.D.	BREED	SEX	TEST CODE	PRICE
	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				



1345 Denison Street  
Markham, Ontario L3R 5V2  
2316 Delaware Avenue, #333,  
Buffalo, NY 14216-2606

**SHEEP DNA TEST  
SAMPLE SUBMISSION FORM**

Tel: (416) 798-4988 Toll Free: 1 (800) 667-3411  
Fax: (905) 475-7309 www.vita-tech.com

<b>SUBMISSION</b>	<b>Please submit the following with your samples</b>	<b>Credit Card Payment Information</b>		
	<ul style="list-style-type: none"> <li>◆ Test sample submission form.</li> <li>◆ Signed copy of the genetic disclaimer.</li> <li>◆ Payment (Check or Credit Card). Please make checks payable to VITA-TECH Canada Inc. International customers please convert payment to US \$.</li> </ul>	Circle one:	<input type="checkbox"/> Visa <input type="checkbox"/> Master Card	
		Credit Card No:		
		Expiration Date:		
		Name on Card (Print):		
		Signature:		
		Daytime Phone:		
		E-mail address:		

**Sample Collection Instructions:**

1. At least 10mL of uncoagulated, whole blood (not serum) must be collected in EDTA (Purple Top) blood tubes. Please invert tube 5-10 times after collection to ensure the blood is well mixed with the anticoagulant.
2. Use a new needle/syringe for each animal. DNA tests are highly sensitive. A trace amount of contamination in the blood may result in invalid typing.
3. All collected samples should arrive at the laboratory within 48 hours.
4. It is strongly encouraged to ship blood at the beginning of the week to avoid samples sitting in transit over weekends. Blood samples may be stored in the refrigerator for up to two days and shipped on a Monday if blood needs to be collected late in the week.

**5. Storage for hot weather:**

When temperatures exceed 25°C, include a cold pack with the samples

**Storage for cold weather:**

When temperatures are below 4°C, pack samples in an insulated container to avoid freezing

6. Ship samples to: VITA-TECH Canada Inc. 1345 Denison Street, Markham, ON L3R 5V2





1345 Denison Street  
Markham, Ontario L3R 5V2  
2316 Delaware Avenue, #333,  
Buffalo, NY 14216-2606

## SHEEP DNA TEST SAMPLE SUBMISSION FORM

Tel: (416) 798-4988 Toll Free: 1 (800) 667-3411  
Fax: (905) 475-7309 www.vita-tech.com

### DISCLAIMER AND RELEASE FOR GENETIC MARKER TESTING

#### PLEASE READ AND SIGN BELOW

VITA-TECH Canada Inc., ("VITA-TECH™") will endeavor to give due care to the receipt, storage, and testing of the genetic material provided to VITA-TECH™ by Owner, and to provide Owner with accurate information as a result of such testing. VITA-TECH™ agrees that they will only release results for the tests requested to Owner and will not convey to anyone additional information derived from the genetic material received without Owner's prior written permission.

Owner agrees to make no claim against VITA-TECH™, or any of their affiliates, officers, directors, employees, agents, or representatives for any loss, cost, or damage purportedly resulting from an inaccuracy in the results of the genetic testing services performed by VITA-TECH™ for Owner which are not caused by VITA-TECH™'s gross negligence or intentional misconduct; and shall indemnify VITA-TECH™ against any loss, cost, or damage, including without limitation reasonable attorney fees, arising out of any such claims by third parties. **IN NO EVENT WILL VITA-TECH™ BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO LOST PROFITS.** [Note: Defined terms should be conformed to context.]

**CUSTOMER ACKNOWLEDGEMENT:** I certify that all of the information included on this application is true and correct. I further certify that I have read and understand the "Disclaimer and Release" and agree to be bound by its terms.

Accepted by client:	_____
Signed:	_____
Printed name:	_____
Title:	_____
Date:	_____

**NOTE: TEST RESULTS COULD BE DELAYED IF THE GENETIC DISCLAIMER is NOT SIGNED AND RETURNED TO VITA-TECH™.**

# There is a DNA Test !!!

## Samplingcard for EDTA Blood



# SLS / OHC

## How to Solve the Problem

- Immediatly testing, (germanwide) all Suffolk-rams.
- Information of the Veterinarians to give them an idea how the defect looks like.
- Telling the genestatus in the breedingpapers.

- Summary of the first results to figure out the degree of spreading of the gene throughout the Suffolk breed (Status quo). (Associations)
- Show the Problem to all the sheep breeders even the Hobbypeople >  
other breeds >>> dont forget to watch them
- **Enviromental and management problems** on the animals health are changed quikly,  
**genetic reasons need longtime solutions.**

# Thanks for your patience



Eichblatt Radnetzspinne  
Oakleaf Wheelnetspider