

# Are sole ulcer and white line diseases causes of lameness in finishing beef cattle?

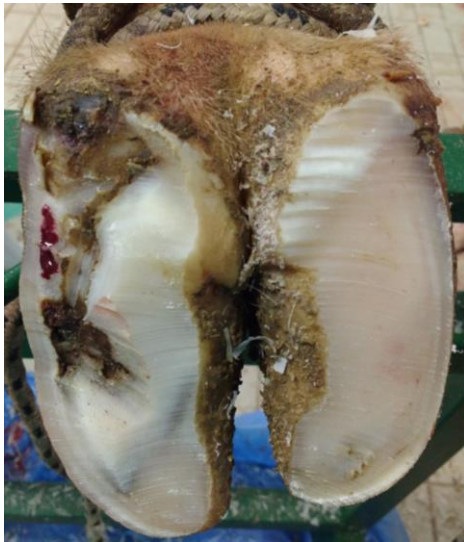
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*&*

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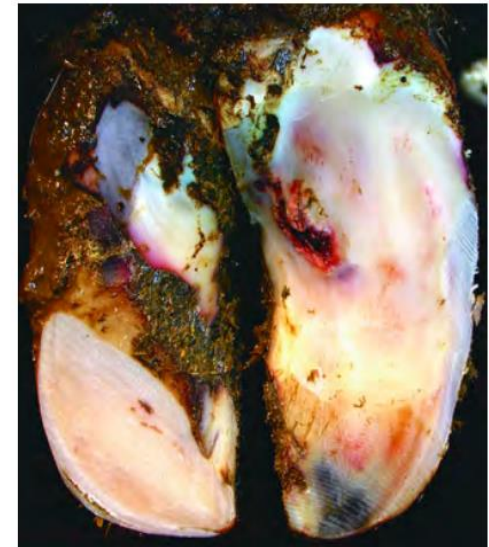
By Luisa Magrin

Two of the most

- painful
- debilitating
- costly
- common causes of lameness



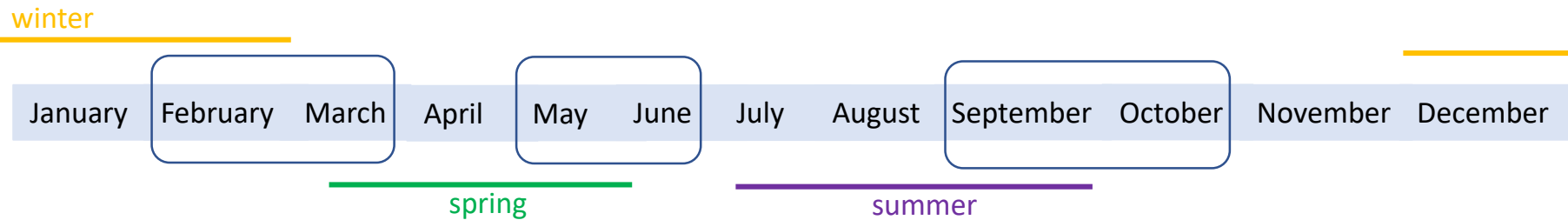
**30%** of lameness events in dairy cattle



From AABP Lameness Committee

1. Assess the prevalence of white line disease and sole ulcer on feet of finishing beef cattle that did not show any visible signs of impaired locomotion at the slaughterhouse, through a *post-mortem* inspection
2. Investigate possible sources of variation

- 2 abattoirs in Northern Italy at 3 assessment times:



- In 30 slaughter days

## FEET COLLECTION

Hind feet of the first **15 animals**  
per each batch arriving at the  
slaughterhouse





## TRIMMING PRACTICE

Trimming of the sole horn using an electric grinder performed by a professional hoof trimmer

## IDENTIFICATION OF CLAW DISORDERS

Using the **ICAR Claw Atlas** recording system

Position on the sole with specific numbers by area

Site within foot (lateral or medial claw)



N° 4292 HIND FEET  
INSPECTED

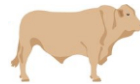
from **153 batches** of animals



Bulls: 97 batches - 2748 animals



Heifers: 56 batches - 1544 heifers



Charolaise: 88 batches - 2562 animals



Limousine: 28 batches - 732 animals



Italian and French crossbreds: 21 batches -  
556 animals



minor breeds: 16 batches – 442 animals



## TOTAL BATCHES MONITORED

	N° 153	
White line disease	<b>84</b>	(54/153) 54.9 %
Toe ulcer	<b>32</b>	(32/153) 20.9 %
Sole ulcer	<b>3</b>	(3/153) 2.0 %

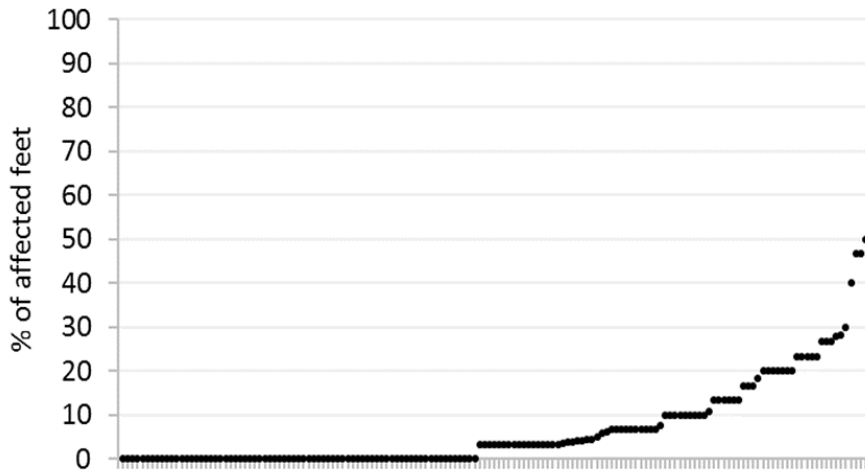
## % of affected batches/total batches

LATERAL CLAW	MEDIAL CLAW
52.3%	13.7%
12.4%	11.1%
1.9%	0.7%

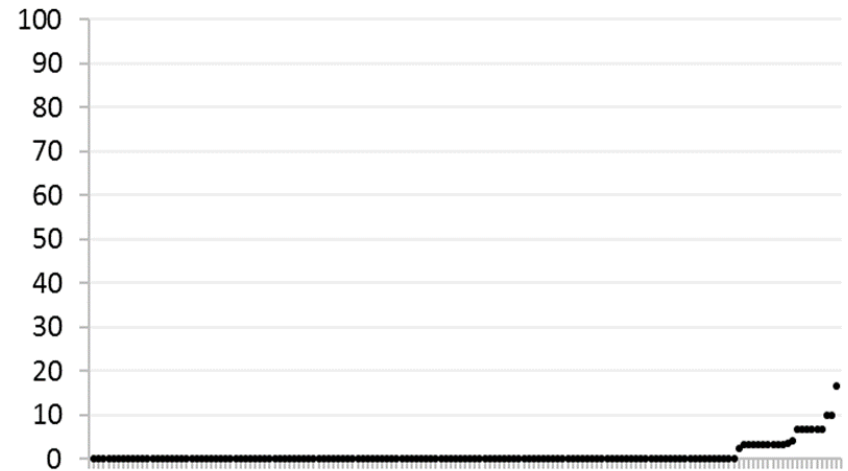
**% FEET AFFECTED WITHIN BATCH**

	LATERAL CLAW		MEDIAL CLAW	
	mean	min - max	mean	min - max
White line disease	6.74	0 – 50.0	0.76	0 – 16.7

White line disease on lateral claw

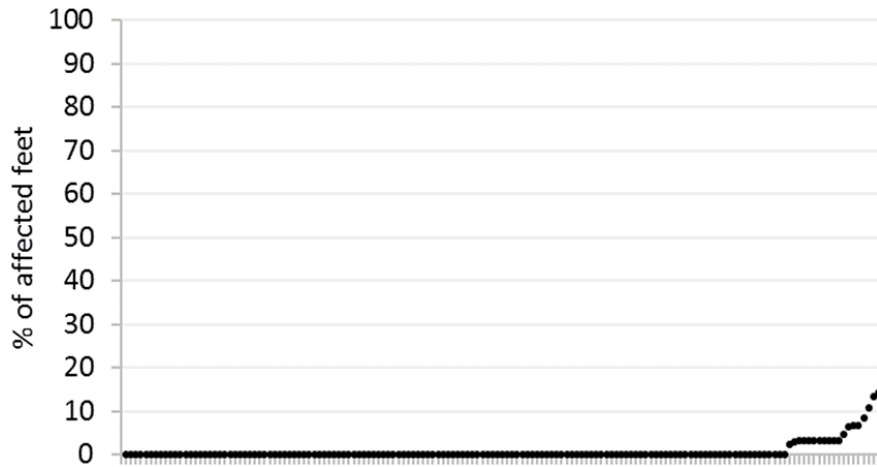


White line disease on medial claw

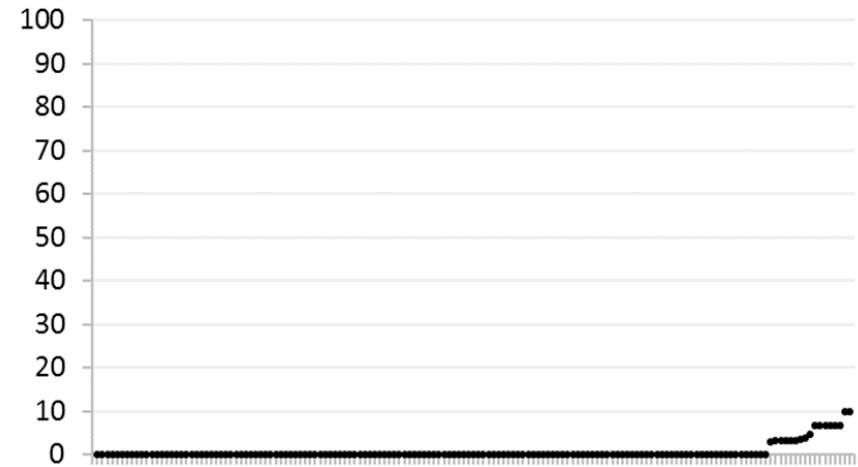


% FEET AFFECTED WITHIN BATCH				
	LATERAL CLAW		MEDIAL CLAW	
	mean	min - max	mean	min - max
Toe ulcer	0.69	0 – 14.3	0.60	0 – 10.0

Toe ulcer on lateral claw



Toe ulcer on medial claw



% FEET AFFECTED WITHIN BATCH					
		LATERAL CLAW		MEDIAL CLAW	
		mean	min - max	mean	min - max
Sole ulcer		0.03	0 – 3.33	0.01	0 – 2.27

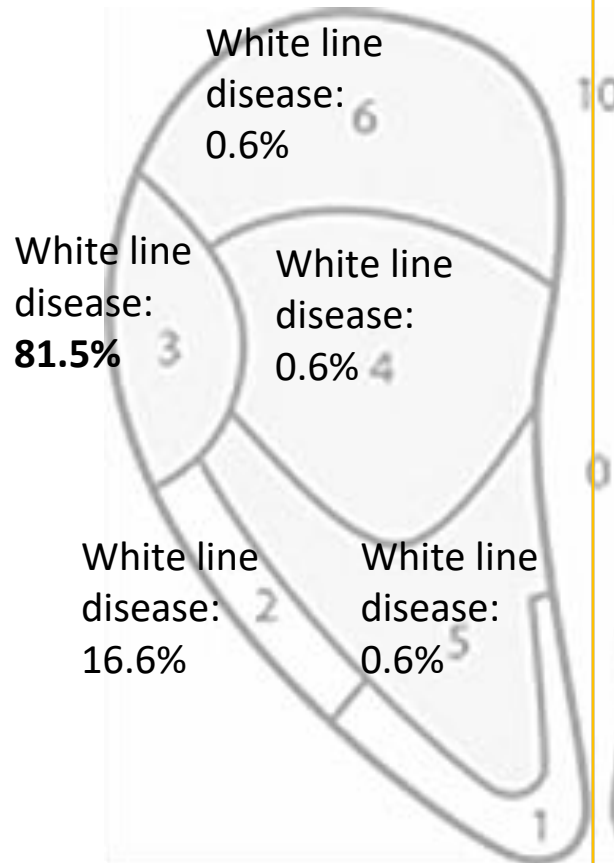
Sole ulcer on lateral claw



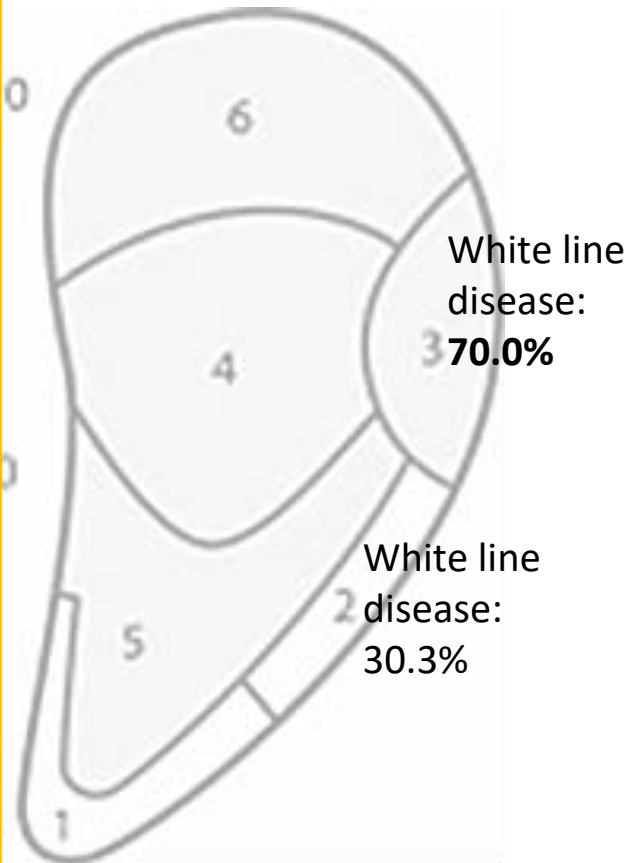
Sole ulcer on medial claw



LATERAL

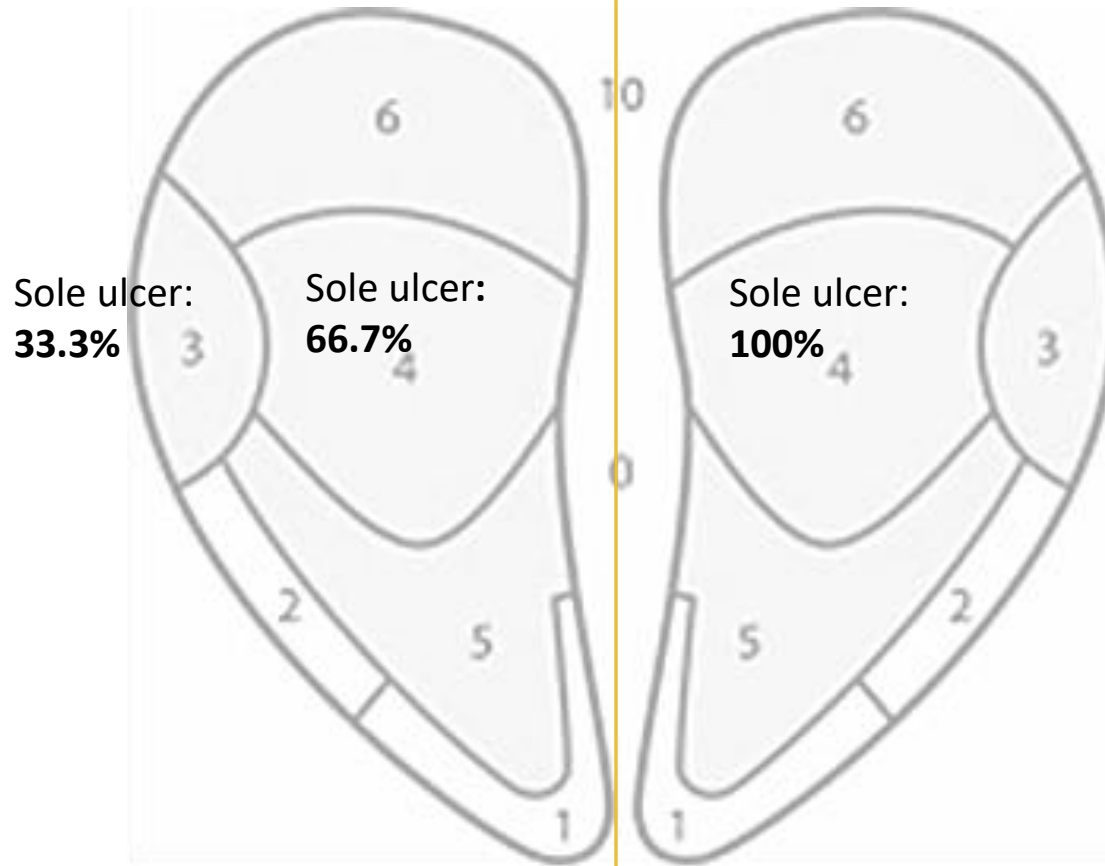


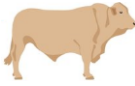




MEDIAL








LATERAL






MEDIAL



	Charolaise	Limousine	Crossbred F	Crossbred IT	Minor breeds	
% of affected feet within batch						
<b>LATERAL CLAW</b>						
White line disease	8.7a	0.7b	8.2a	8.6a	4.1a	***
Toe ulcer	0.7	0.0	0.0	0.2	2.6	ns
Sole ulcer	0.04	0.1	0.0	0.0	0.0	ns
<b>MEDIAL CLAW</b>						
White line disease	1.3	0.0	0.3	0.2	0.0	ns
Toe ulcer	0.7	0.1	1.8	0.5	0.2	ns
Sole ulcer	0.0	0.0	0.0	0.2	0.0	ns

	Charolaise	Limousine	Crossbred F	Crossbred IT	Minor breeds	
% of affected feet within batch						
<b>LATERAL CLAW</b>						
White line disease	8.7a	0.7b	8.2a	8.6a	4.1a	***
zone 2	1.2ab	0.2b	3.3a	2.5ab	0.4ab	*
zone 3	8.0a	0.6b	5.2a	6.1a	3.7a	***
zone 4	0.1	0.0	0.0	0.0	0.0	ns
zone 5	0.04	0.0	0.3	0.0	0.0	ns
zone 6	0.1	0.0	0.0	0.0	0.0	ns
<b>MEDIAL CLAW</b>						
White line disease	1.3	0.0	0.3	0.2	0.0	ns
zone 2	0.4	0.0	0.0	0.0	0.0	ns
zone 3	0.8	0.0	0.3	0.2	0.0	ns



	Charolaise	Limousine	Crossbred F	Crossbred IT	Minor breeds	
% of affected feet within batch						
<b>LATERAL CLAW</b>						
White line disease	8.7a	0.7b	8.2a	8.6a	4.1a	***
zone 2	1.2ab	<b>0.2b</b>	3.3a	2.5ab	0.4ab	*
zone 3	8.0a	<b>0.6b</b>	5.2a	6.1a	3.7a	***
zone 4	0.1	0.0	0.0	0.0	0.0	ns
zone 5	0.04	0.0	0.3	0.0	0.0	ns
zone 6	0.1	0.0	0.0	0.0	0.0	ns
<b>MEDIAL CLAW</b>						
White line disease	1.3	0.0	0.3	0.2	0.0	ns
zone 2	0.4	0.0	0.0	0.0	0.0	ns
zone 3	0.8	0.0	0.3	0.2	0.0	ns

% of affected feet within batch	Bulls	Heifers	
<b>LATERAL CLAW</b>			
White line disease	7.5	5.5	ns
Toe ulcer	0.8	0.4	ns
Sole ulcer	0.03	0.03	ns
<b>MEDIAL CLAW</b>			
White line disease	1.1	0.3	ns
Toe ulcer	0.9	0.1	**
Sole ulcer	0.02	0.0	ns

% of affected feet within batch	Winter	Spring	Summer	
<b>LATERAL CLAW</b>				
White line disease	5.5	4.6	9.5	ns
Toe ulcer	0.1	1.2	0.7	ns
Sole ulcer	0.0	0.1	0.0	ns
<b>MEDIAL CLAW</b>				
White line disease	1.0	0.4	0.6	ns
Toe ulcer	0.4	0.2	1.2	**
Sole ulcer	0.0	0.0	0.1	ns

- ✓ The prevalence of sole and toe ulcers and white line disease recorded on feet of non-lame beef cattle are similar to those found on dairy cows
- ✓ A large variability exists among batches
- ✓ Limousine breed shows the lowest prevalence of white line diseases on lateral claws
- ✓ Bulls and the summer housing of the animals show a higher prevalence of toe ulcers on medial claws



**EAAP**

European Federation of Animal Science

**THANKS FOR YOUR ATTENTION**