Oniris
Nantes-Atlantic National College of Veterinary Medicine, Food Science and Engineering
Health and food at the heart of life

Outbreaks of digital dermatitis in beef fattening units: clinical findings and control

Relun A[1], Grand B[1], Heily V[1], Denis G[2], Tocze C[3], Dorso L[1,4], Assie S[1,4], Fusellier M[5], Douart A[1], Guatteo R[1]

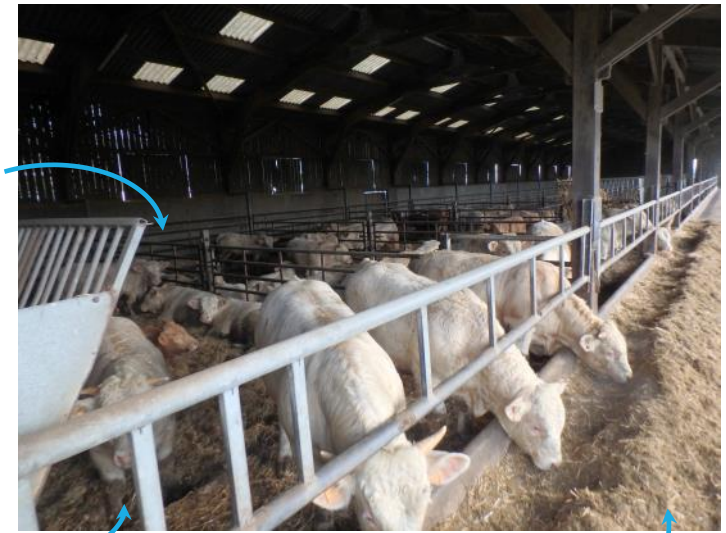
[1] BioEpAR & Farm Animal Medicine Unit , INRA, Oniris, Nantes, France
[2] CAVAC, Service Santé animale, La Roche sur Yon, France
[3] TERRENA, Mésanger, France
[4] Autopsie-service, Oniris, Nantes, France
[5] Department of imagery, Oniris, Nantes, France

Conference on Lameness in Ruminants - 07/09/2017 - Munich, Germany

HISTORY

2 farms
400 – 500 bulls finished / year

Charolaise (80%)



Straw yard
Deep litter bedding

Silages - grain - protein, min & vit supplements - straw

Lameness with unusual digital lesions (summer ++)

Weight losses + premature culling + treatment

FEET INSPECTION ON THE FARM

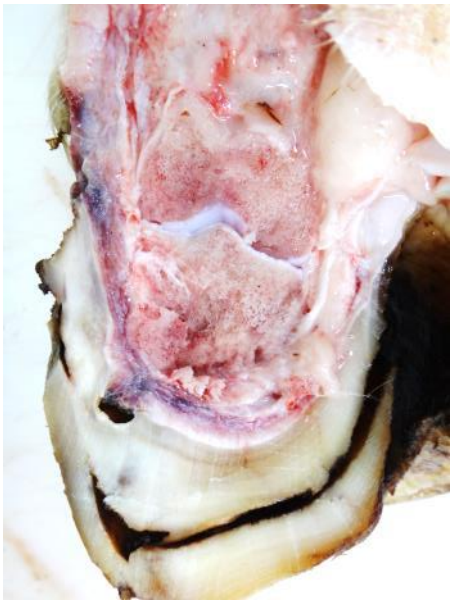
Bulls > 15 months (~600 kg BW)

Up to 50% of bulls affected in each pen

FEET INSPECTION AFTER CULLING

Circumscribed ulcerative to granulomatous skin lesions mostly **at the coronary band** + often **separation of the hoof horn** and **hoof horn overgrowth.**



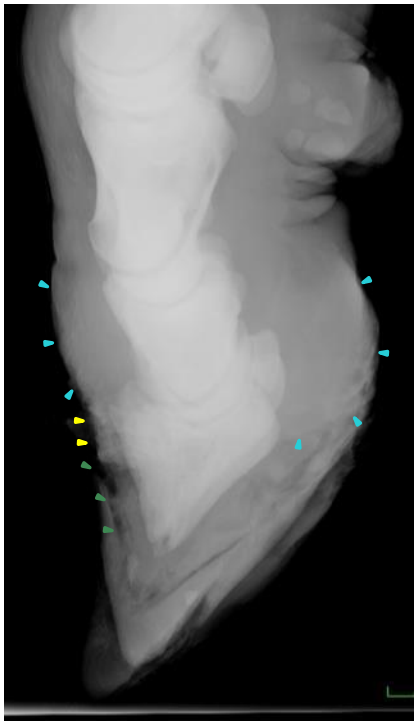
RADIOGRAPHIC FINDINGS

Diffuse circumferential soft tissue swelling

Separation of the hoof wall and emphysema

Irregular periostal new bone formation , dorsally of the lateral distal phalynx

Ossifying periostitis at the lateral distal phalynx and horn defect of the lateral claw



MAIN RISK FACTORS IDENTIFIED

- Humidity in some pens (bulls playing with water and poor ventilation)
- Overstocking in some pens
- Increase of litter temperature during summer?
- Late detection of affected bulls
- Purchase of bulls from different flocks
(affected bulls came from 10 different flocks)

CONTROL MEASURES

External biosecurity to keep DD out

Avoid introduction by animals

by equipment and visitors

Internal biosecurity to minimize infection pressure

Maximize animal comfort

Avoid transmission between animals

Early identification, recording & treatment

Frequent foot disinfection to prevent new cases

Define and monitor targets

CONTROL MEASURES

External biosecurity to keep DD out

Animals from several herds

No hoof-trimming

Internal biosecurity to minimize infection pressure

Deep litter

Humidity

Overcrowding

Bulls changing pens as they grow

Early identification, recording & treatment

No easy implementation of early detection

Topical treatment not feasible in one herd

Frequent foot disinfection to prevent new cases

No easy implementation (frequency)

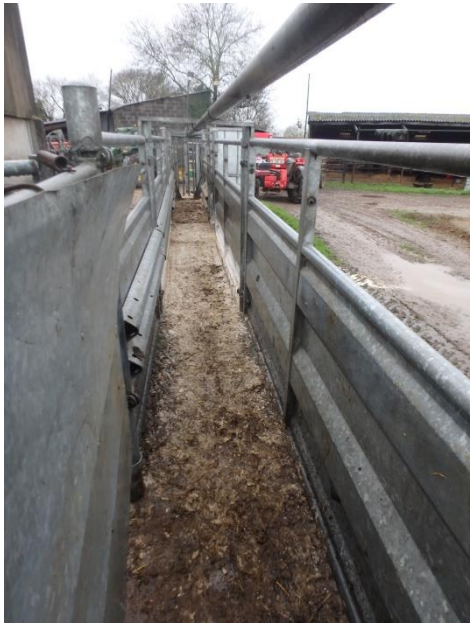
Define and monitor targets

CONTROL MEASURES

External biosecurity to keep DD out

Locomotion scoring at arrival

Walk-through footbath with litter conditioner at arrival



CONTROL MEASURES

Internal biosecurity to minimize infection pressure

Decrease stocking density

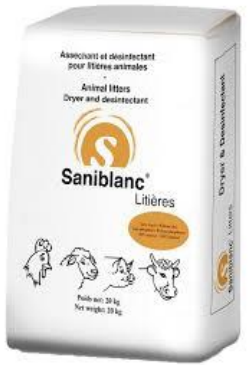
Use of litter conditioner (+- bacteria)

↗ dredging frequency in critical phases

No movements between pens

Isolation of affected bulls

Old barn renewal



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Isolation of affected bulls

Old barn renewal

Early identification, recording & treatment

Careful observation of leg position

Topical treatment in one herd

Parenteral treatment in the other :
Oxytetracycline
Tulathromycine

Frequent foot disinfection to prevent new cases

Footbathing
(Litter conditoner Saniblanc®)
at booster vaccination and weighing operations

Define and monitor targets

Follow-up every 3 months during 1 year

FOLLOW-UP

IMPROVEMENTS

Significant decrease of lameness prevalence (~15% to1% in 2 years)

Good effectiveness of litter conditioner (+- bacteria; seems to decrease DD prevalence and lesion severity)

Good effectiveness of parenteral tulathromycine for DD treatment

DIFFICULTIES

No eradication despite renewal of animals

Footbath implementation (frequency, location)

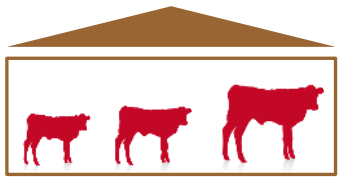
Early detection

Necessity to keep isolated bulls apart until the end of the finishing period

BEEF FATTENING UNITS: PERFECT FOR DD?

Mixing of bulls from different herds

Difficulties for early detection



Deep litter bedding

Difficulties for regular footbathing

DD prevalence might be higher than previously thought among breeders

UNUSUAL CLINICAL PRESENTATION

Angell et al. 2015, Vet Rec

Why more frequently at the coronary band (covered by manure)?

Similar to COOD in ovine?

Impact of hoof horn separation and hoof horn overgrowth?

Why so late (stress, time to develop)?

CONCLUSION

- Significant financial and welfare impact
- Particular clinical presentation: farmers should be aware of it
- Control feasible
- Eradication might be difficult

ACKNOWLEDGEMENT

The farmers

Oniris team

Dr Geraldine Denis and Carole Tocze

Dr Juan-Manuel Ariza, Marie Lamande and Guillaume Puel

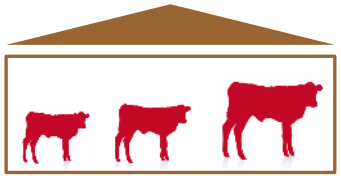
Thank you for your attention!

BONUS

BEEF FATTENING UNITS IN FRANCE

12 700 beef fattening units

Direct transport
or *via* collection centres



Grain-growing plains
(Western regions)

Breeders

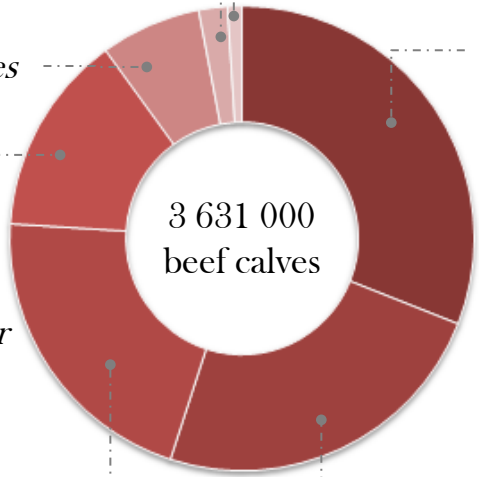
(Charolaise, Limousine, Blonde d'Aquitaine, …)

Bought at ~ 9 months, 305 kg BW

Slaughtered at ~18 months

~ 680 kg BW, 400 kg of carcass

BEEF FATTENING UNITS IN FRANCE



1% steers

2% bulls

7% veal calves

31% weanlings (male & female) exported

14% slaughter heifers

21% young bulls fattened in France

24% suckling cows

21% young bulls fattened in France

11 900 beef breeder-fattener units

12 700 beef fattening units

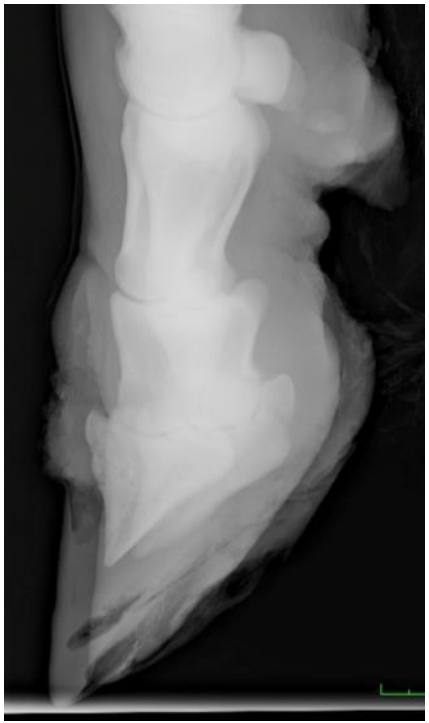
RADIOGRAPHIC FINDINGS

Diffuse soft tissue swelling

Ovoid inhomogeneous soft tissue, slightly laterally in the interdigital space

Severe irregular and poorly defined periostal and periarticular new bone formation, medially to the lateral distal interphalangeal joint space

Separation of the hoof wall and emphysema



CONTROL MEASURES

To improve early detection

Locomotion scoring at arrival

Careful observation of the position of bulls legs

To prevent DD spread

Dredging/disinfection of all pens once + of quarantine between each batch

Footbathing at arrival, at booster vaccination & at weighing operations

Isolation of affected bulls during treatment

To treat affected bulls

Parenteral antibiotics (farm 2)

- Oxyetracycline
- tulathromycine

Topical disinfectant (farm 1)

- Litter conditioner (SANIBLANC ®)

To improve foot environment

Decrease of **stocking density**

Increase of **dredging frequency** in critical phases

Use of **litter conditioners** (+- bacteria)

Old **barns renewal**