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Guidelines for the validation and use of claw health data

N. Charfeddine¹, M. Alsaad², J. Burgstaller³, A.-M. Christen⁴, G. de Jong⁵, C. Egger-Danner⁶, A. Fiedler⁷, B. Heringstad⁸, M. Holzhauer⁹, J. Kofler³, F. Malchiodi¹⁰, F. Miglior¹⁰, K. E. Mueller¹¹, P. Nielsen¹², H. Ruottu¹³, Å. M. Sogstad¹⁴, A., Steiner², F. K., Stock¹⁵ & G. Thomas¹⁶

Email: nouredine.charfeddine@conafe.com

¹CONAFE, Madrid, Spain; ²Clinic for Ruminants, Vetsuisse-Faculty, Bern, Switzerland; ³University of Veterinary Medicine, Vienna, Austria; ⁴Valacta, Québec, Canada; ⁵CRV, Arnhem, The Netherlands; ⁶ZuchtData Vienna, Austria; ⁷Association of Certified Claw Trimmers, Munich, Germany; ⁸Norwegian University of Life Sciences, Ås, Norway; ⁹GD Animal Health, The Netherlands; University of Guelph, Ontario, Canada; ¹¹Freie Universitaet Berlin, Germany; ¹²SEGES P/S, Denmark; ¹³FABA, Vantaa, Finland; ¹⁴TINE, OSLO, Norway; ¹⁵VIT, Verden, Germany; ¹⁶Institut de l'Élevage, France

Overview

1.Introduction

2.Validation of claw health data

3.Use of claw health data

4.Next steps

5.Conclusions

1. Introduction

- Several countries have implemented a recording system for claw health data.
- In the Genomic Era: Claw disorders are used as new phenotypes.
- Imperative need for standardization.
- ICAR promoted the implementation and the publication of **ICAR Claw Health Atlas**.

- New recording standard for claw data (ICAR)
- Harmonized descriptions of claw disorders in cattle
- Illustrations for each disorder to support harmonization

ICAR CLAW HEALTH ATLAS



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Digital dermatitis (DD)

Infection of the digital and/or interdigital skin with erosion, mostly painful ulcerations and/or chronic hyperkeratosis/proliferation



© Müller, GER



© Kofler, AUT





Atlas claw health and translations

In May 2015, the first edition of the "ICAR Claw Health Atlas" was published within the ICAR Technical Series. The issue is identified by the following: ISSN: 92-95014-14-6 and ISBN: 92-95014-18

To date, seventeen translations have been produced. In details, the following ones have been published, while others are expected to be finalised in the next weeks:

- [Arabic](#)
- [Chinese](#)
- [Croatian](#)
- [Czech and](#)
- [Danish](#)
- [French](#)
- [German](#)
- [Greek](#)
- [Hindi](#)
- [Hungarian](#)

ICAR Atlas claw health published in May 2015
Translations in 17 languages

What's new

This page presents the main achievements and the latest news from ICAR: The call for two vacancies [...]

[Read more...](#)

ICAR Certifications

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ICAR Recording Guidelines

The last edition of the ICAR Recording Guidelines

Document freely available for download:

https://www.icar.org/Documents/ICAR_Claw_Health_Atlas.pdf

What should be the next step?

Harmonization of the validation and use of claw health data

- **Workshop: Vienna May 3rd-4th 2016**
Claw health experts and geneticists from **10 countries aim to harmonize the validation and use** of claw health data.
- **Online meeting: June 13th 2016**
- **June-July 2016:** online questionnaire about benchmarking parameters.



Aim:

To present the work of the ICAR WGFT and international claw health experts on data validation and use of claw health data

2. Validation of claw health data

Data validation is a process to ensure that data is:

- **Compliant with standards**
- **Fit for intended use**

Two main steps :

- **Data screening**
- **Data verification**

Data screening:

Consists in basic checks on format and completeness, at the incorporation of data.

For example:

- Plausibility ID: *animal-ID, herd-ID, disorder diagnosis code.*
- Reasonableness of dates: *date of birth, date of calving and date of diagnosis.*

Data verification: checking the correctness of data at the moment of use.

Use:

- **Herd management:** less restrictive
- **Research and genetic evaluation:** checks on accuracy and reliability.
- **Benchmark calculation:** checks on representativeness.

28/10/2016

Source:

- **Trimmers:** preventive and curative visits.
- **Veterinarians:** mainly the most severe cases.
- **Farmers:** mainly sick cows.

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Data verification process

Several editing criteria have been discussed within each level of data:

- Trimmer/Vet/Farmer data
- Farm
- Animal
- Records/Cases

Validation of Trimmer/Vet/Farmer data

- Minimum number of records per year
- Other validation practices:
 - Do not consider data recorded in training period
 - Minimum and/or maximum frequency for each claw disorder
 - Minimum and/or maximum percentages of animals without disorders

Validation of farm data

- Minimum percentage of trimmed cows
- Other validation practices:
 - Minimum number of records per year (relative to herd size)
 - Minimum and/or maximum percentages of animals with and without disorders per herd-date or herd-period

Validation of animal information

Checks at:

- Animal ID
- Herd location at trimming
- Other checks:
 - Age at calving
 - Lactation number
 - Days in milk

Validation of record information

- ✓ Record gives information about claw disorders at:
 - Claw level
 - Animal level
- ✓ Checks diagnosis date and location to identify whether a register is a new episode (number of days between two successive diagnoses)

Period time between two claw health diagnoses need to be defined by claw health experts for the ICAR guidelines

3. Use of claw health data

Claw data are used for :

- » Herd management
- » **Benchmark calculation**
- » Research and genetic evaluation

Benchmarks :

Two types of frequency measures can be monitored:

- Incidence rate
- Prevalence rates.

Incidence rate: describes the percentage of cows **developing a new case** of claw disorder.

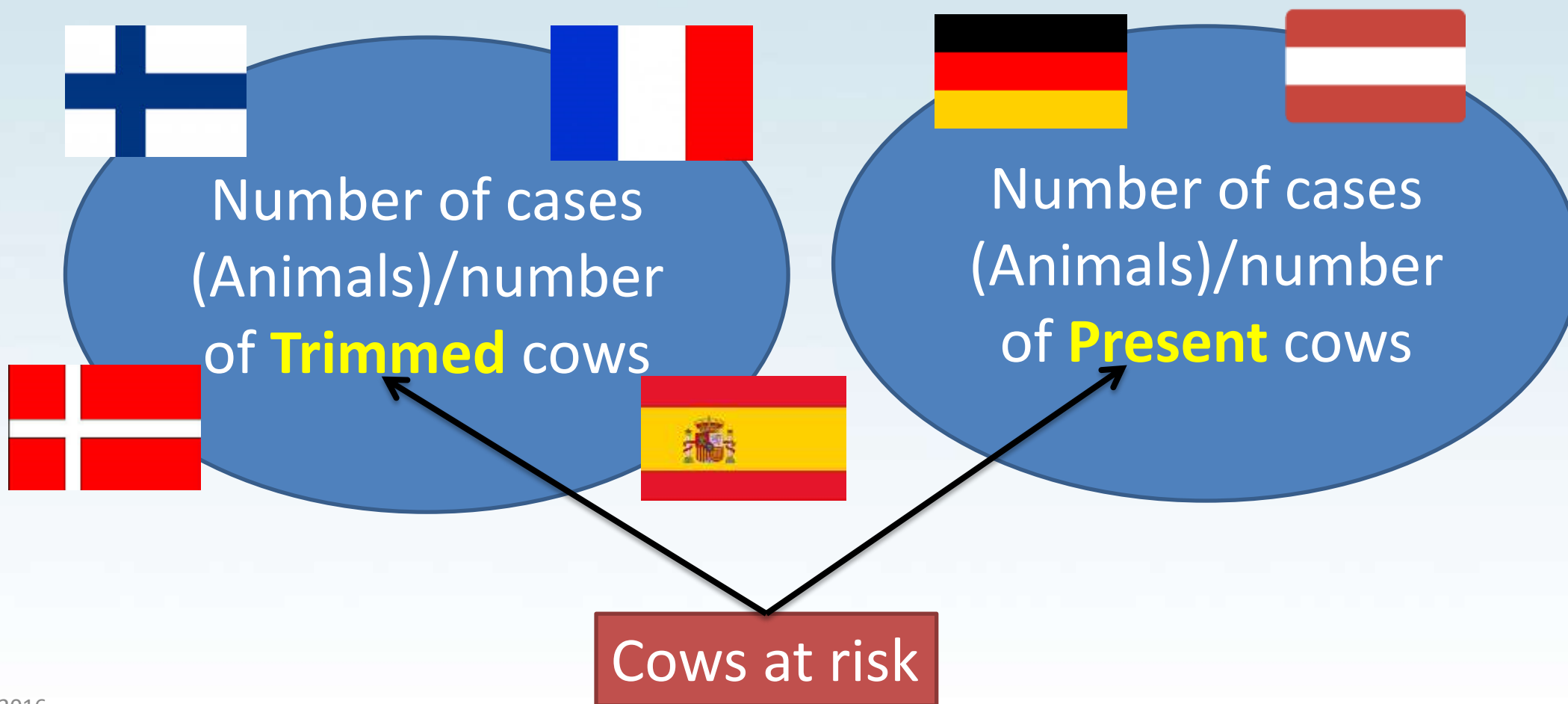
Prevalence rate: describes the percentage of cows **having a** claw disorders.

Both may reflect a single point in time or a prolonged period of time

Which parameter is used?

Countries	Prevalence rates	Incidence rates
AUSTRIA	X	
DENMARK	X	
FINLAND	X	
FRANCE	X	
GERMANY	X	X
SPAIN	X	X
SWITZERLAND	X	X

How are defined?



Challenges of the harmonization of the Validation and Use of claw data

- Minimum % of trimmed cows
- Cows at risk
- New case
- Chronic lesion
- Reference period
- Reference level (lactation, size of farm/ source of data, region, country, etc.)

4. Next steps

- Set up those recommendations with claw experts
- Paper on validation and use of claw health data.
- Review paper on genetic improvement of claw health.

To establish ICAR Guidelines for claw health traits

Workshop with 5 presentations in the Cattle Forum ('Forum Rind') at the **EuroTier Exhibition** in Hannover, GER, on **Friday, November 18th 2016**.



5. Conclusions

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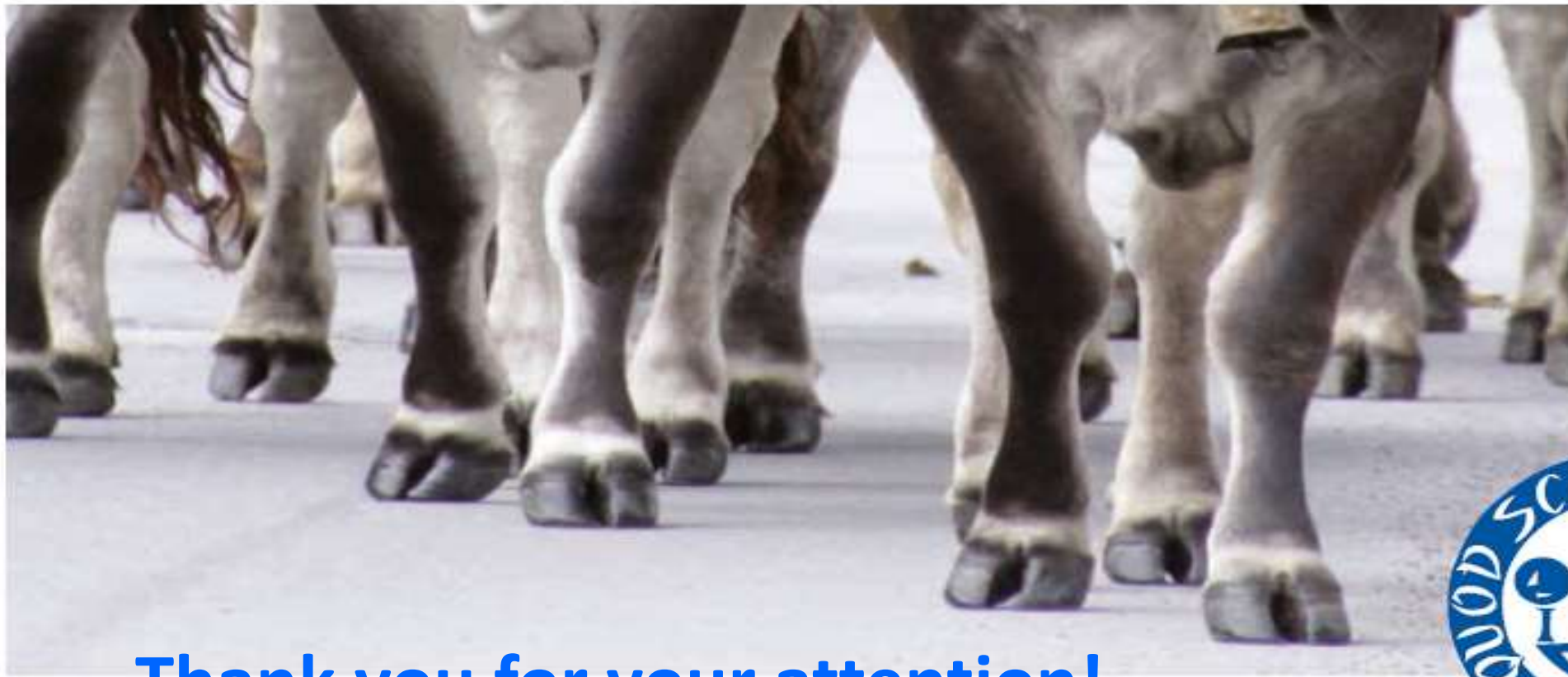
- **The international experts** on claw health for their support and proposals for the elaboration of new standards for the recording and validation of claw health information.
- **ICAR Secretariat, with special thanks to Cesar Mosconi** for his very appreciated support.

ATLAS DE SALUD PODAL DE ICAR



Muchas gracias!

ICAR CLAW HEALTH ATLAS



Thank you for your attention!

