

EAAP 2016, 67th Annual Meeting of the European Federation of Animal Science
Belfast UK, August 29th – September 2nd 2016

ICAR Claw Health Atlas - One Year of Implementation

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Overview

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3. Questionnaire on ATLAS implementation
4. Status of genetic evaluation for claw health
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6. Next steps
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1. Introduction

- In most cases, claw disorders lead to lameness.
- Lameness is a major issue for dairy production

- High prevalence in dairy herds

More than 40% of cows show at least one claw disorder per year (Perez-Cabal & Charfeddine, 2015)

- Compromised animal health and welfare
- High economic impact

Annual costs vary from 46 to 540 Euro per affected cow, depending on the disorder and its severity degree (Charfeddine & Perez-Cabal, 2016)

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 promotes the development and improvement of performance recording and genetic evaluation.



2. ICAR Claw Health Atlas: **Background**

- Survey (2012): worldwide interest in claw health.
- Coordination: **Christa Egger-Danner.**
- 45 authors and contributors from 17 countries.
- 3 face-to-face meetings.
- 7 online meetings and many discussions by email.
- May 2015: **publication of ICAR Claw Health Atlas.**
- June 2015-June 2016: Translation of the Atlas
- Presentation of the Atlas at several congresses.



2. ICAR Claw Health Atlas: Background

- New recording standard for claw data (ICAR)
- Harmonized descriptions of claw disorders in cattle
- Illustrations for each disorder to support harmonization
- Document freely available for download:
https://www.icar.org/Documents/ICAR_Claw_Health_Atlas.pdf

Translations in other languages:

To date, **17** translations have been produced:

[Arabic](#)

[French](#)

[Polish](#)

[Chinese](#)

[German](#)

[Portuguese](#)

[Croatian](#)

[Greek](#)

[Serbian](#)

[Czech and Slovak](#)

[Hindi](#)

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[Danish](#)

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[Spanish](#)

[Italian](#)

[Turkish](#)

<http://www.icar.org/index.php/publications-technical-materials/technical-series-and-proceedings/atlas-claw-health-and-translations/>

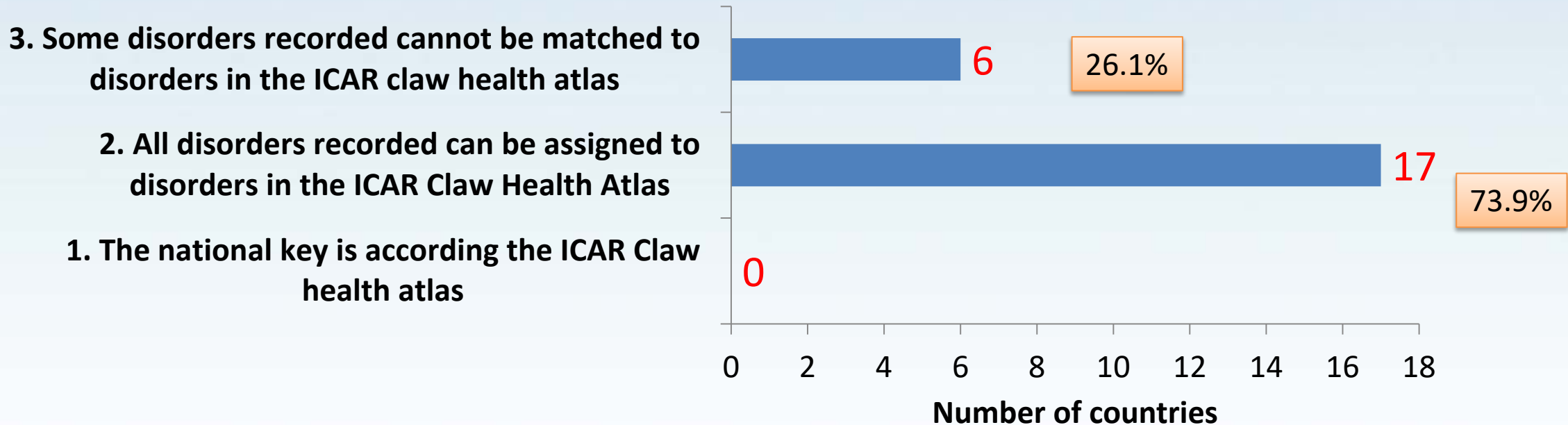
3. Questionnaire on Atlas implementation

- **Online questionnaire:** May 2016.
- 5 questions about the ICAR Claw Health Atlas.
- Sent to 55 people: scientists, claw experts and trimmers, veterinarians and representatives from performance and/or breeding organizations.
- Overall response rate: **62%**.

- **34 replies from 25 countries**
- Presentation based on results from country consensus
- **14 of them have a recording system for claw health***

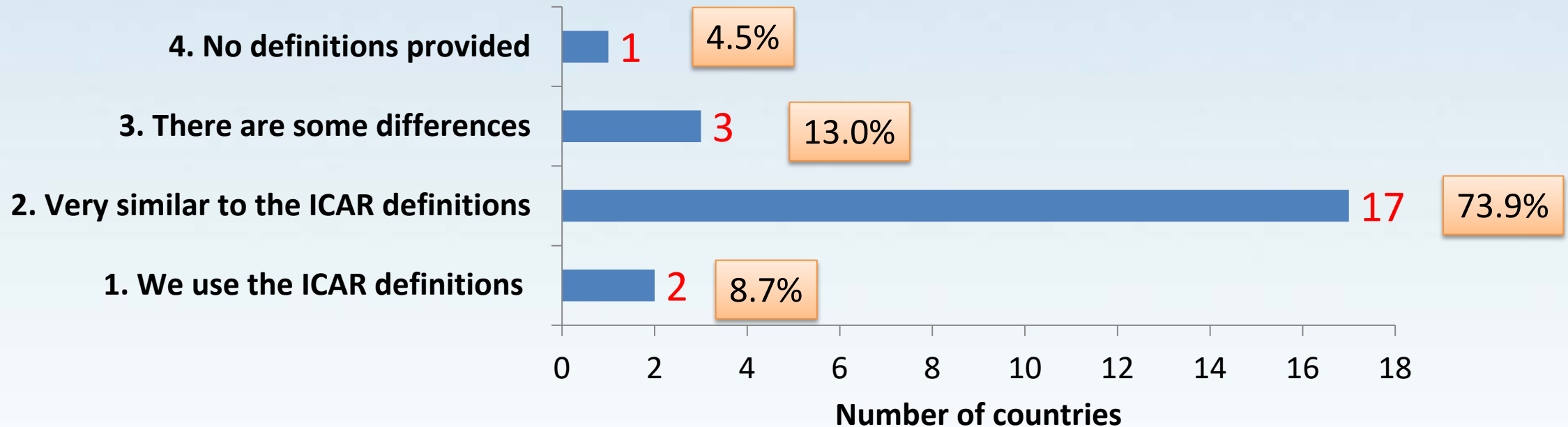
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|-------------|---------------|-------------------|
| • Australia | • France | • Poland |
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| • Canada | • Hungary | • Slovenia |
| • Croatia | • Italy | • Spain |
| • Denmark | • Macedonia | • Switzerland |
| • Egypt | • New Zealand | • The Netherlands |
| • Finland | • Norway | • Turkey |
| | | • United States |

I. How compatible is your national key with the ICAR Claw Health Atlas?



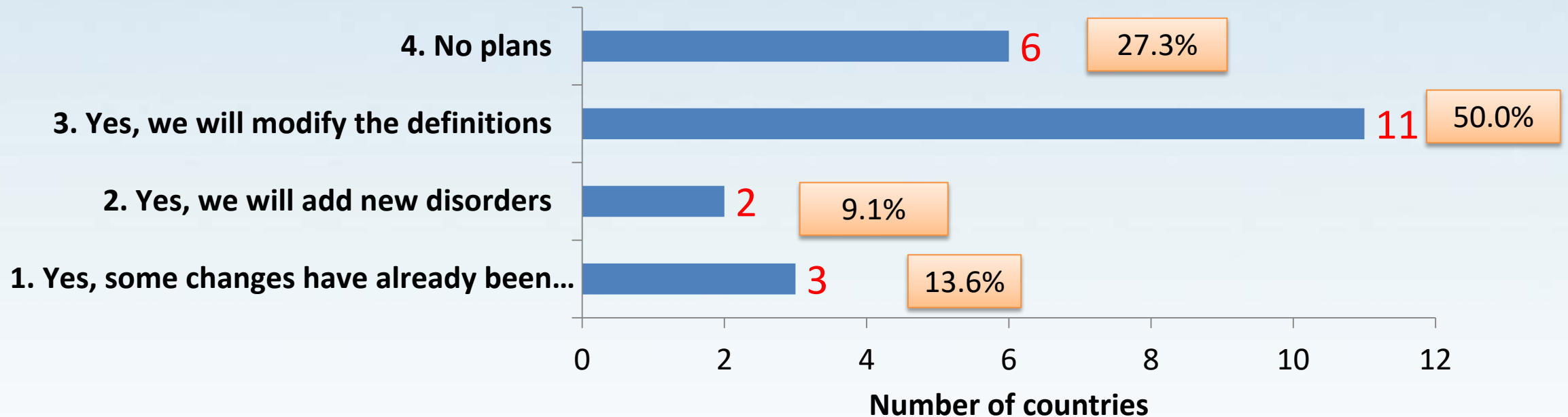
2 respondents skipped this question

II. How similar are the definitions of disorders included in your system and in the ICAR Claw Health Atlas?



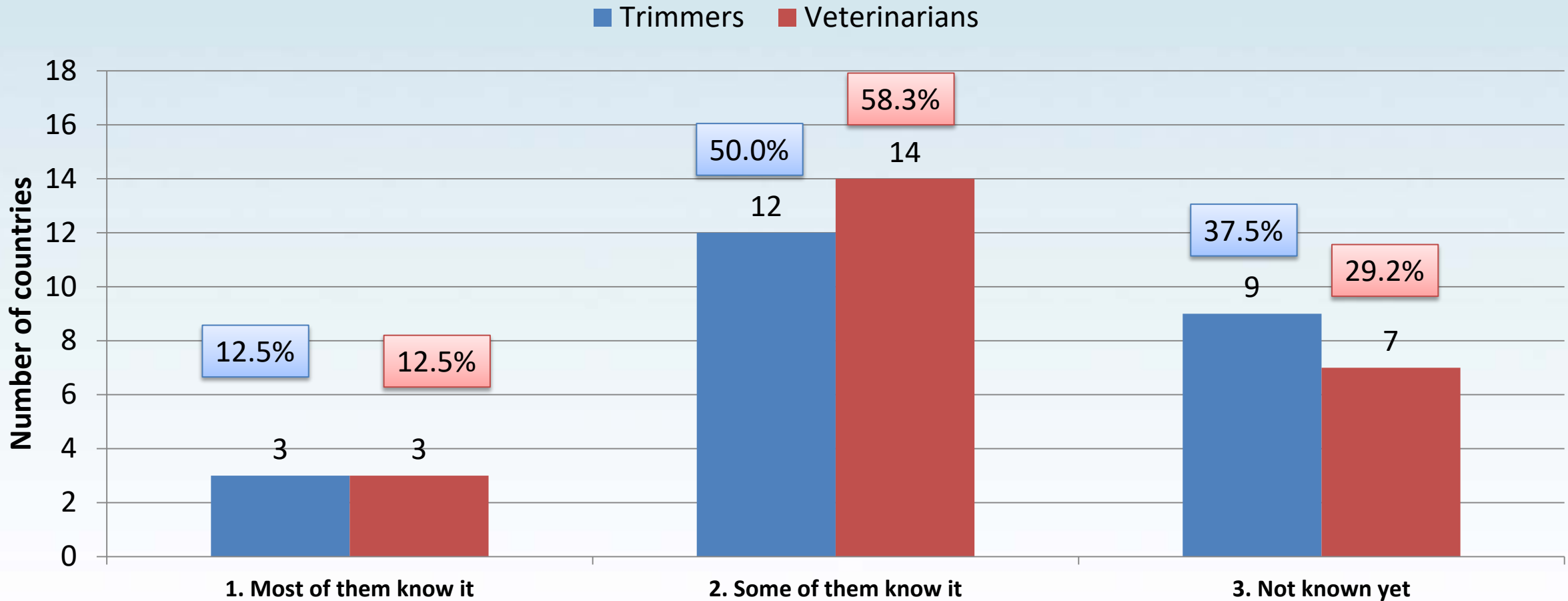
2 respondents skipped this question

III. Do you have any plans to adjust your national system according to the ICAR Claw Health Atlas?

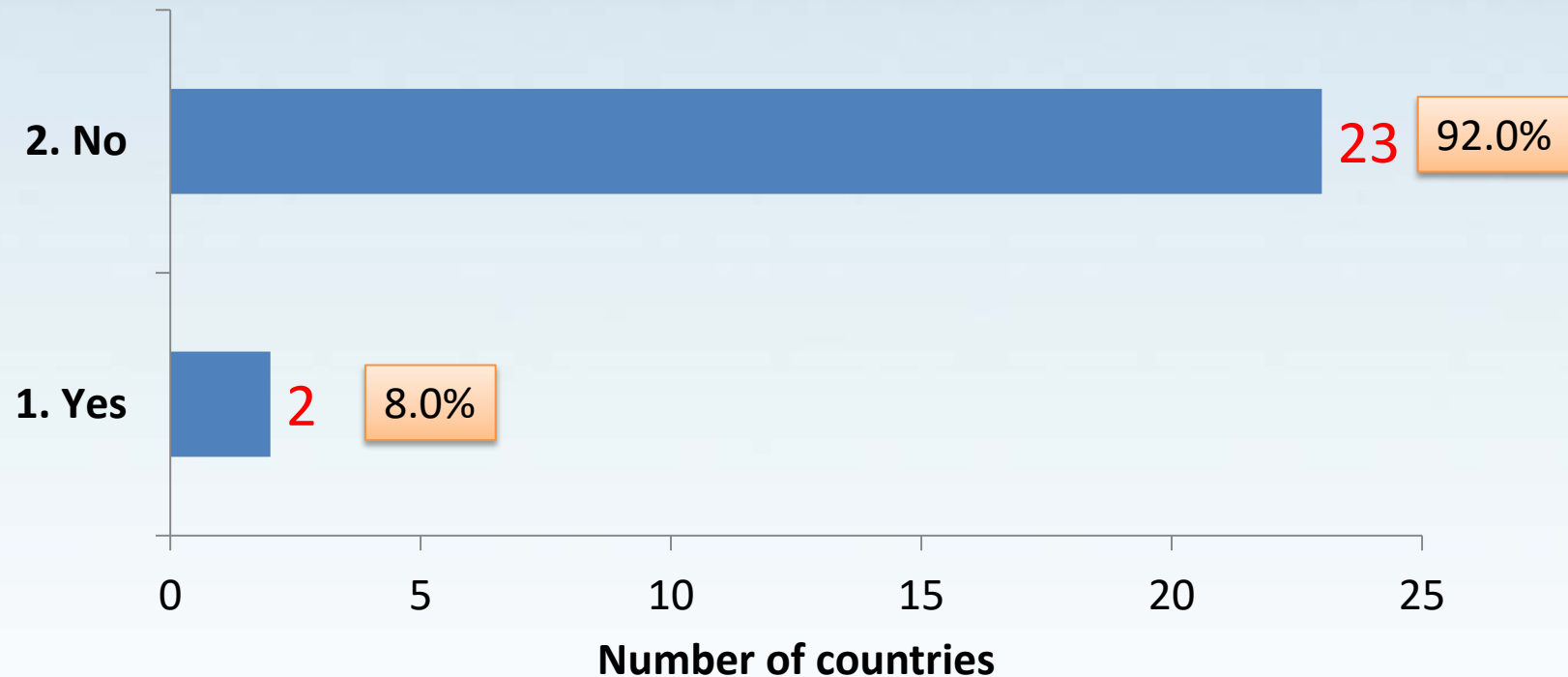


3 respondents skipped this question

IV. How well is known the ICAR Claw Health Atlas in your country?



V. Is the ICAR Claw Health Atlas available as hard copy in your country?



Results of the questionnaire

- Most recording systems are compatible, in some way, with ICAR Claw Health Atlas.
- About 73% of countries have plans to adjust their recording system to ICAR Claw Health Atlas.
- It seems that The ICAR Claw Health Atlas is not yet well known, especially among trimmers.
- The ICAR Claw Health Atlas is not available as hard copy in the majority of countries.

Implementing the Claw Health Atlas: **the Spanish case**

- **The ICAR Claw Health Atlas was printed** as booklet and presented in October 2015 during the annual trimmers training workshop.
- **Great acceptance among trimmers:** all trimmers found it very useful and congratulated ICAR for this great job.
- **Swapping** “chronic laminitis” for “concave dorsal wall”.
- **Including** a new disorder in our system: “corkscrew claw”.
- **Adjusting** our definitions to those of ICAR Claw Health Atlas.

4. Status of genetic evaluation for claw health

- Routine genetic evaluations for claw health:
 - Denmark, Sweden, Finland and, The Netherlands since 2010
 - Norway since 2014
- **Spain and France**: About to implement routine genetic evaluation (by the end of 2016)
- **Other countries**: data provided by farmers, vets, and/or trimmers for genetic research projects and test run for genetic evaluation (e.g. **Austria, Canada, Germany**)

5. Current activity: harmonization of validation and use of claw health data

- **Workshop in Vienna May 3rd-4th 2016**
Claw health experts and geneticists from **10 countries** shared their experiences on validation and use of claw health data.
- **Online meeting: June 13th 2016**
- **June-July 2016:** online questionnaire about benchmarking parameters.



Two main steps in the validation data process:

- 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:

Consists in checking the correctness of data at the moment of use.

Depends on the **use** and **source** of the information:

Use:

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

Source:

- **Trimmers** register claw data during routine, preventive and curative visits.
- **Veterinarians** register mainly the most severe cases.
- **Farmers** register mainly sick cows.

Data verification process

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

- Trimmer/Vet/Farmer data
- Farm
- Animal
- Records/Cases
- Controls/Observation period

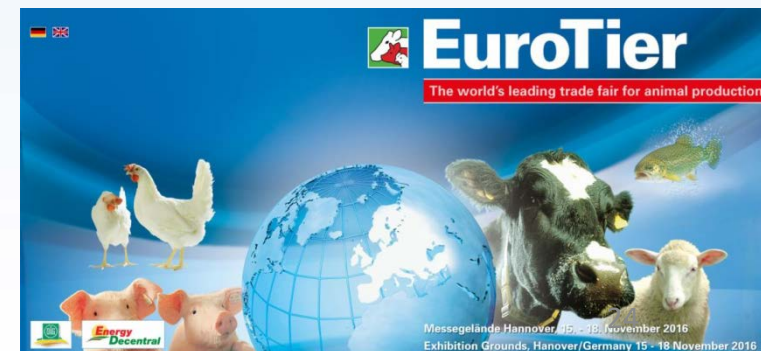
Challenges of the Validation and Use of claw data

How to define?

- Valid farm data
- Control animal (healthy animal?) / Cows at risk
- A new case or lesion
- Frequency measures: Prevalence vs. Incidence rate
- Reference period
- Reference level (farm/trimmers, etc.)

6. Next steps

- **Review paper on** validation and use of claw health data.
- **Review paper on** genetic improvement of claw health.
- **Workshop** with 5 presentations in the Cattle Forum ('Forum Rind') at the **EuroTier Exhibition** in Hanover, Germany, on **Friday, November 18th 2016**.
- International workshops for education & training of claw trimmers.



7. Conclusions

- ICAR Claw Health Atlas is a good example of the benefits of interdisciplinary collaboration.
- Internationally harmonized descriptions of claw disorders promote the collection of comparable and high-quality data within and across countries.
- More efforts are needed to make the Atlas well known among trimmers and vets.
- Further work: Guidelines for validation and use of claw health data

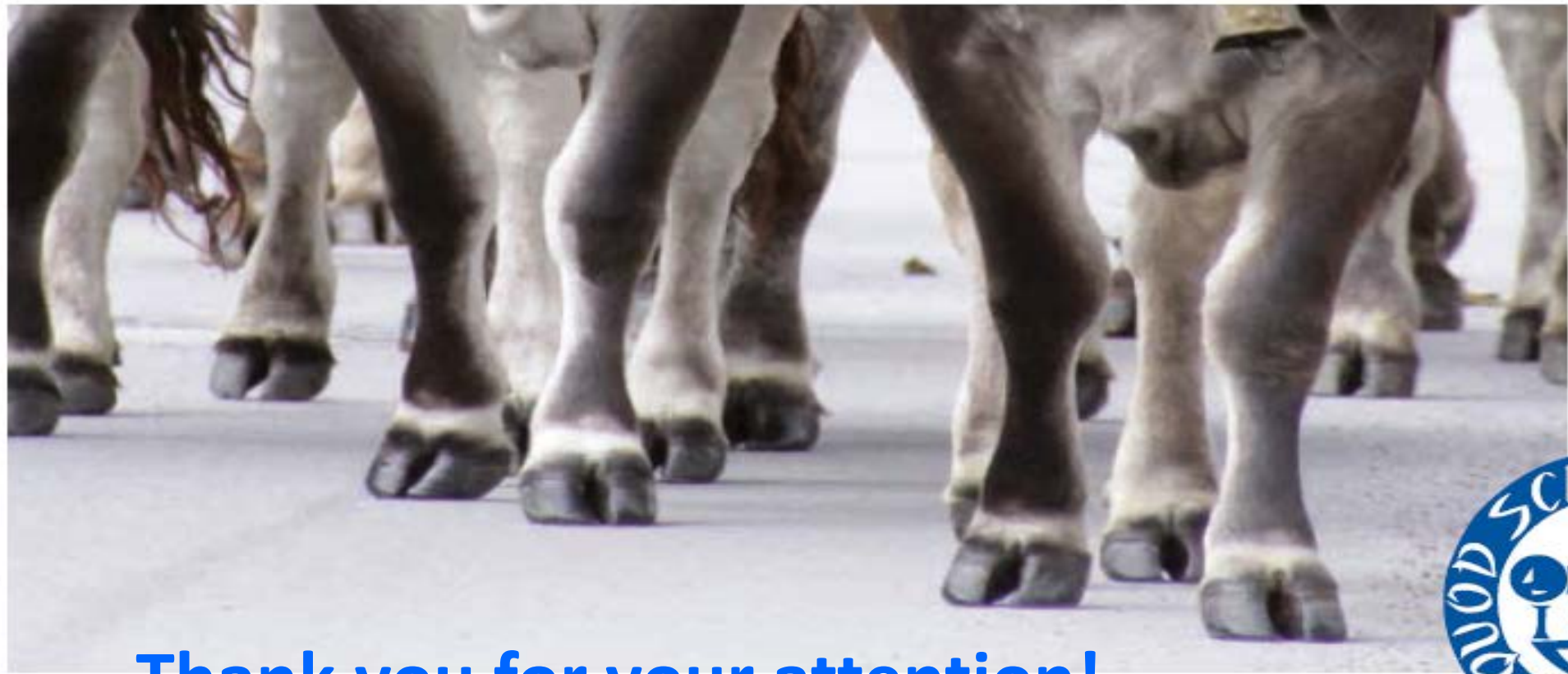
Acknowledgement to:

- **The international experts** on claw health for their support and proposals for the elaboration of new standards for the recording of claw health information. **Without their expertise and their great support it would have been impossible to succeed** with the ambitious plans of making available this new ICAR Claw Health Atlas.
- **ICAR Secretariat, with special thanks to Cesar Mosconi** for his very appreciated support.

The ICAR Claw Health Atlas is available at:

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

ICAR CLAW HEALTH ATLAS



Thank you for your attention!

