

A Little Bit of Extra Effort Goes a Long Way

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Genomic selection requires an adjustment in breeding programme goal → Including new traits



New phenotypes

Health traits : Claw health traits

Why Claw health?

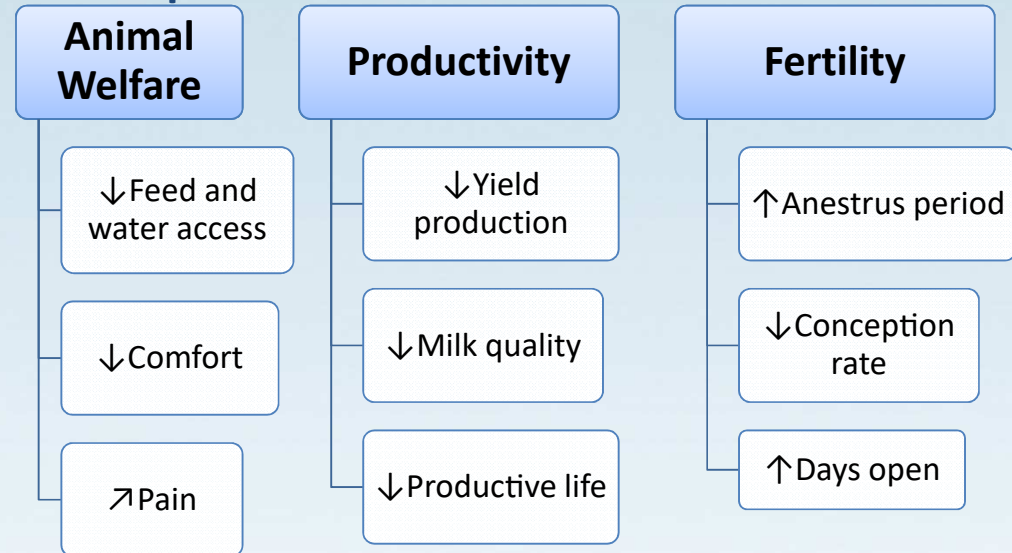
Claw health problem is one of the main causes of involuntary culling in Spanish dairy herds

1.- Fertility

2.- Mastitis

3.- Claw lesions

Claw disorders are responsible for most lameness cases which compromise:



Feet & legs type traits fail in improving claw health

Mainly private entrepreneurs: heterogeneous and without specific education

Two main private trimming companies



Pedro Codesido



Adrian Gonzalez

CONAFE

Project Launch

In 2012 was launched the Spanish program for recording claw health data in order to prevent and to control lameness

- **CONAFE provides:**
 - A tactile PC-tablet
 - An electronic friendly application called DATPAT
 - An access to the national database
 - Herd reports and a
 - Training courses
- **Trimmers should:**
 - Register at least 2,000 records per year during trimming routine visits.

Win-Win Agreement



Seven claw disorders are recorded:

- Interdigital and digital dermatitis (DE)
- Sole ulcer (SU)
- White line disease (WL)
- Interdigital hyperplasia (IH)
- Interdigital phlegmon (IP)
- Concave dorsal wall (CD)
- Corkscrew claws (CC)

CD and CC are scored as true/false



The Scoring for each claw is as follows:

0 : Absence

1 : mild lesion

2 : severe lesion



Trimmers

Animales

ES011402492288

05/04/2013 27/03/2013 08/02/2013 20/12/2012 06/11/2012 25/10/2012

Dermatitis Mild Severe 

Sole Ulcer 

White Line

Hyperplasia

Phlegmon

Chr. Laminitis  

Animal ID ESPH3102858753

C.I.B. ES011402492288

Farm Number 01625

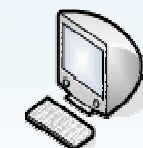
Birthday 18/11/2007 **Age** 5/5

Calving Date 28/05/2012 **D.I.M.** 346

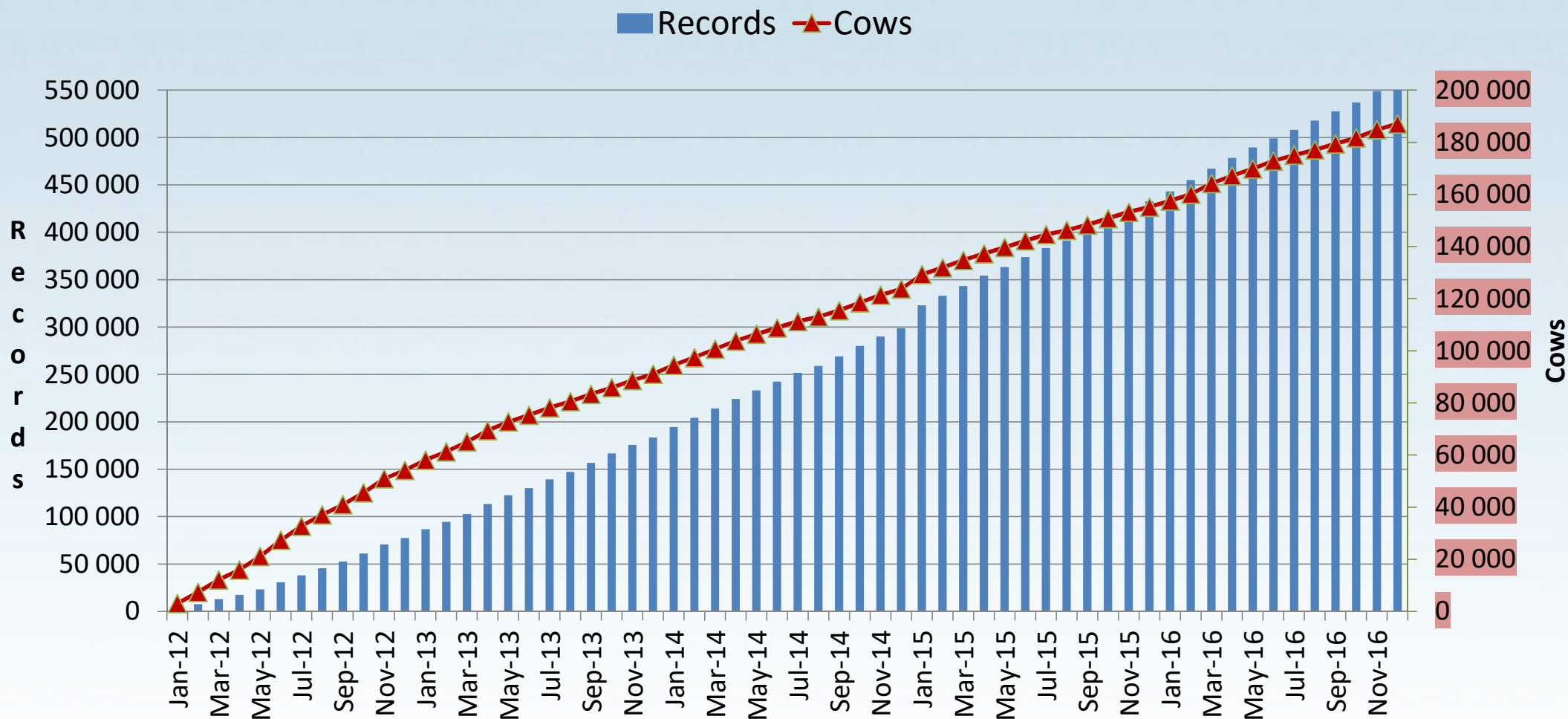
Calving N° 3

Operator ANKA1 **Date**



Farmer



2017: 30 Trimmers are involved in data recording and more than 1800 herds have claw data



Data should be:

- Complete and correct
- Fit for purpose use

We have taken an effort:

- 1- Documentation
- 2- Validation process
- 3- Monitoring



The screenshot shows the ICAR website with the following content:

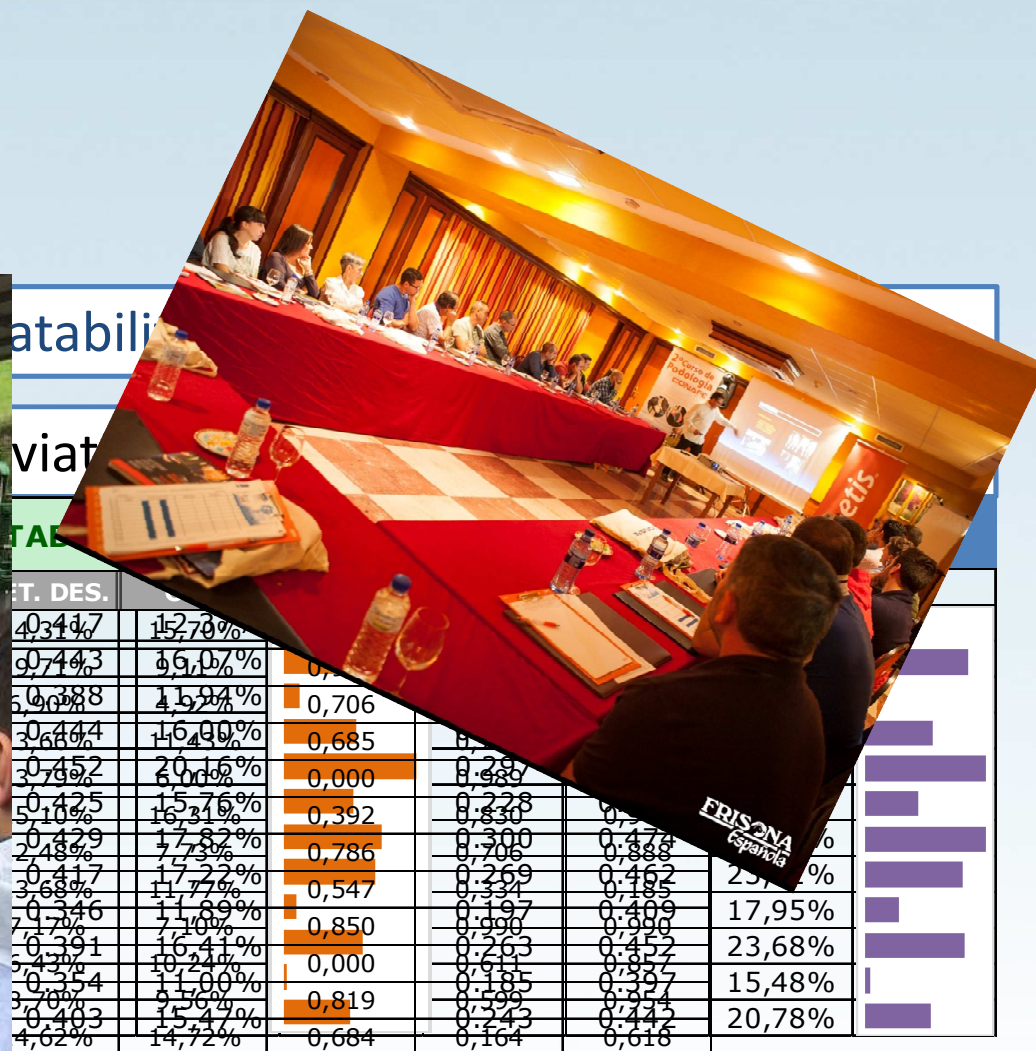
- International Committee for Animal Recording** logo and navigation menu (Home, ABOUT US, TECHNICAL BODIES, CERTIFICATIONS, PUBLICATIONS, ICAR MEETINGS).
- Breadcrumb: You are here: ICAR > PUBLICATIONS > Technical Series and Proceedings > Atlas claw health and translations
- Atlas claw health and translations**
 - 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 Slovak
 - Danish
 - French
 - German
 - Greek
 - Hindi
- ICAR CLAW HEALTH ATLAS** book cover image.
- What's new**
 - This page presents the main achievements and the latest news from ICAR: The call for two vacancies [...]
 - [Read more...](#)
- ICAR Certifications**
 - According to ICAR standards, ICAR certifies ear tags, RFIDs, milk meters and genetic laboratories. ICAR [...]
 - [Read more...](#)
- ICAR Recording Guidelines**

Document freely available for download:

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

3- Monitoring

- Statistical Monitoring
- Training Courses



I-SAP (SALUD PODAL)

Ganadería: p310070 [Cambiar](#)

Ganadería: Animales: Estadísticas: Costes: Acerca de:

Estadísticas Generales

Fecha Inicial: 01/01/2017 Fecha Final: 14/09/2017 [Calcular](#)

Número de Registros	1575
Número de Visitas	36
Número de Vacas	625

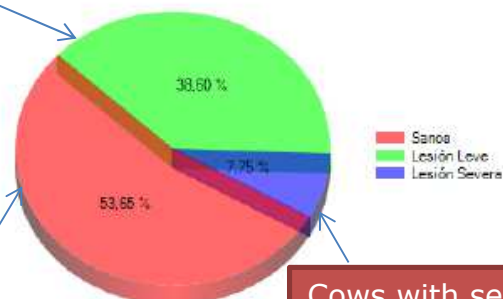
% Novillas	8,76 %
% Vacas 1º Parto	27,11 %
% Vacas 2º Parto	23,24 %
% Vacas 3º o más Partos	40,89 %

% Vacas con DEL <= 150 días	28,25 %
% Vacas con DEL > 150 días	71,75 %

General statistics of trimmed cows

Cows with mild lesion

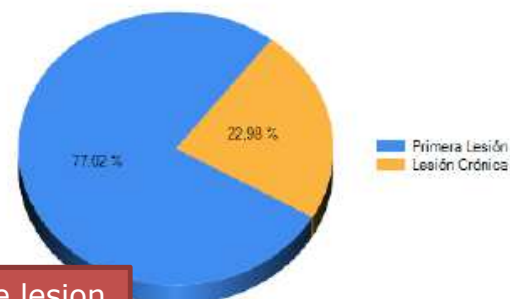
Estadística por estado general del animal



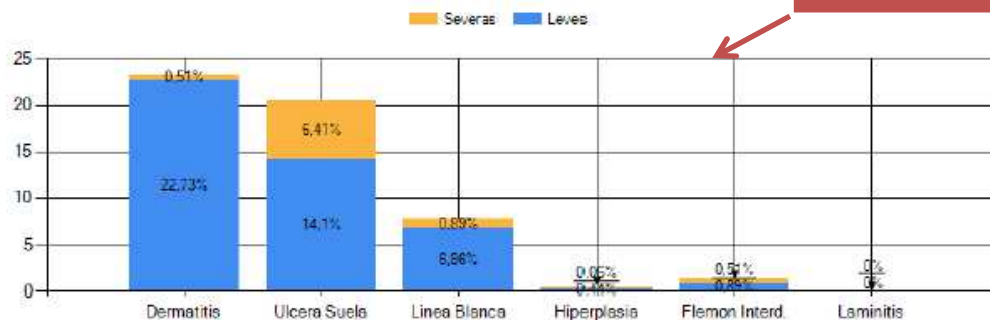
Cows with severe lesion

Cows without any disorder

Estadística por prevalencia de la Lesión



Incidencia por tipo de patología y severidad



Prevalence of each disorder



J. Dairy Sci. 100:1–13
<https://doi.org/10.3168/jds.2016-11434>
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Effect of claw disorders on milk production, fertility, and longevity, and their economic impact in Spanish Holstein cows

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I-SAP (SALUD PODAL)

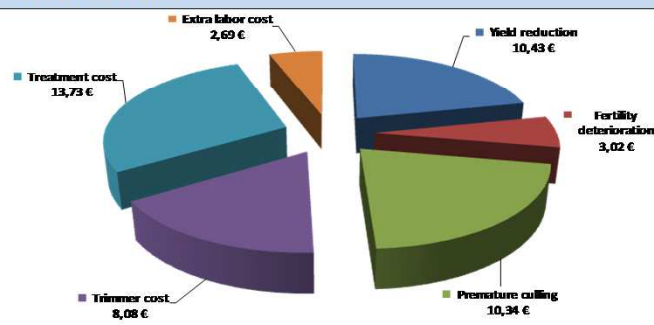
Ganadería

Ganadería	Animales	Estadísticas	Costes	Acerca de
			<input type="button" value="Cálculo Costes"/>	

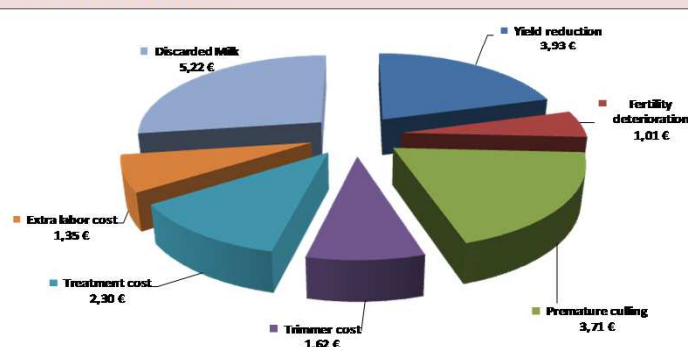
I-SAP

Programa de Salud Podal

MILD LESIONS



SEVERE LESIONS



A report illustrating
breakdown costs due to mild
and severe lesions by
present cow

Claw cost in average farm

Costs	€/cow	%
Direct costs	26.4 €	56.3%
Trimmer cost	7.4 €	15.8%
Treatment cost	12.2 €	26.1%
Extra labor cost	3.1 €	6.6%
Discarded milk	3.1 €	6.6%
Indirect costs	20.5 €	43.7%
Yield reduction	10.1 €	21.7%
Fertility deterioration	2.3 €	4.8%
Premature culling	8.1 €	17.2%
Total costs	46.8 €	

Total cost/present cow/year **42 €**

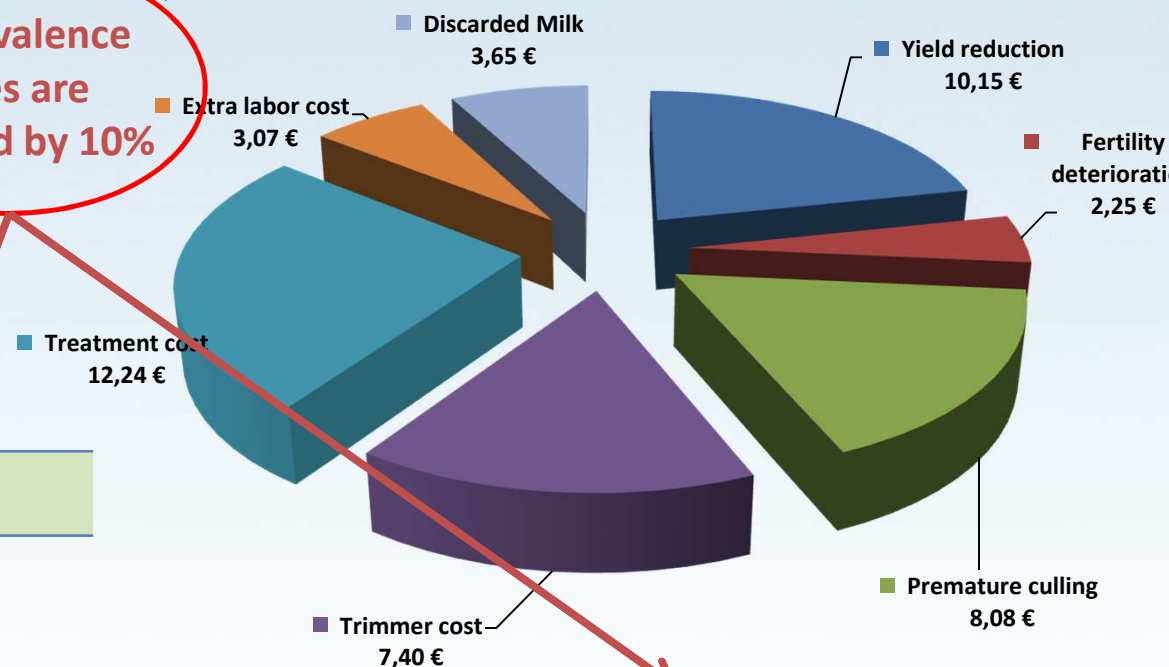
Farm Cost due to Claw Disorders by year **3,276 €**

- 350 €

Average Farm	CD	Mild	Severe
	DE	9.52	0.38
70 present COWS	SU	9.01	0.97
	WL	4.21	0.83

IF Prevalence rates are reduced by 10%

-5€



Claw Disorders	h^2	Repeatability
Dermatitis	0.05	0.10
Sole Ulcer	0.04	0.17
White Line Disease	0.02	0.11
Concave Dorsal Wall	0.01	0.18
Interdigital Hyperplasia	0.04	0.05
Interdigital Phlegmon	0.01	0.03
Infectious Disorders	0.06	0.16
Non-infectious Disorders	0.05	0.10
Overall claw disorders	0.05	0.15

**Genetic
evaluation
run
(*In process*)**

I-SAP Cost vs Potential Benefit

Breakdown of I-SAP Cost for the past six years

PC-Tablets	21,000 € (5% Breakage)
DATPAT Software	15,000 €
I-SAP Web site	4,000 €
Server	2,000 €
Training Courses	60,000 €
Total	102,000 €

Potential Benefit for herds with claw data

Cows with claw data **180,000**

Cost/present cow/year **47 €**

If I-SAP achieves the reduction of 10% of Prevalence rate of DE, SU and WL

Cost by cow can be reduced by 5€

Which means an overall reduction of **900,000€ per year**

- **Expanding the claw database.**
- **Assisting trimmers to provide better services.**
- **Fostering the use of data by farmers.**
- **Improving data quality.**
- **Implementing a routine genetic evaluation.**
 - **An effective cooperation can generate a greatest deal**
 - **Recording data could be time-consuming, but at long-term is highly beneficial**

*In memorial of
Pedro Codesida
(1966-2017)*



Whose help and support have been crucial

End

Thank you for your attention



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Mean and standard deviation of prevalence rates (%) within herds during 2016

Claw disorders	Mean	SD.
Dermatitis	11.0	11.9
Sole Ulcer	11.1	9.6
White line disease	5.6	5.9
Interdigital hyperplasia	0.6	0.2
Interdigital phlegmon	0.8	0.2
Concave dorsal wall	0.5	1.2
All disorders	27.5	20.0