



# Holstein breeding program in Spain

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**CONAFE**

## CONAFE BASIC DATA (only Holstein)

FARMS	COWS	REGISTRATION /year	TYPE CLASSIF./ year
<b>7.052</b>	<b>491.896</b>	<b>164.618</b>	<b>126.145</b>

Fee/herd	Fee/cow
<b>61 euros</b>	<b>3,10 euros</b>

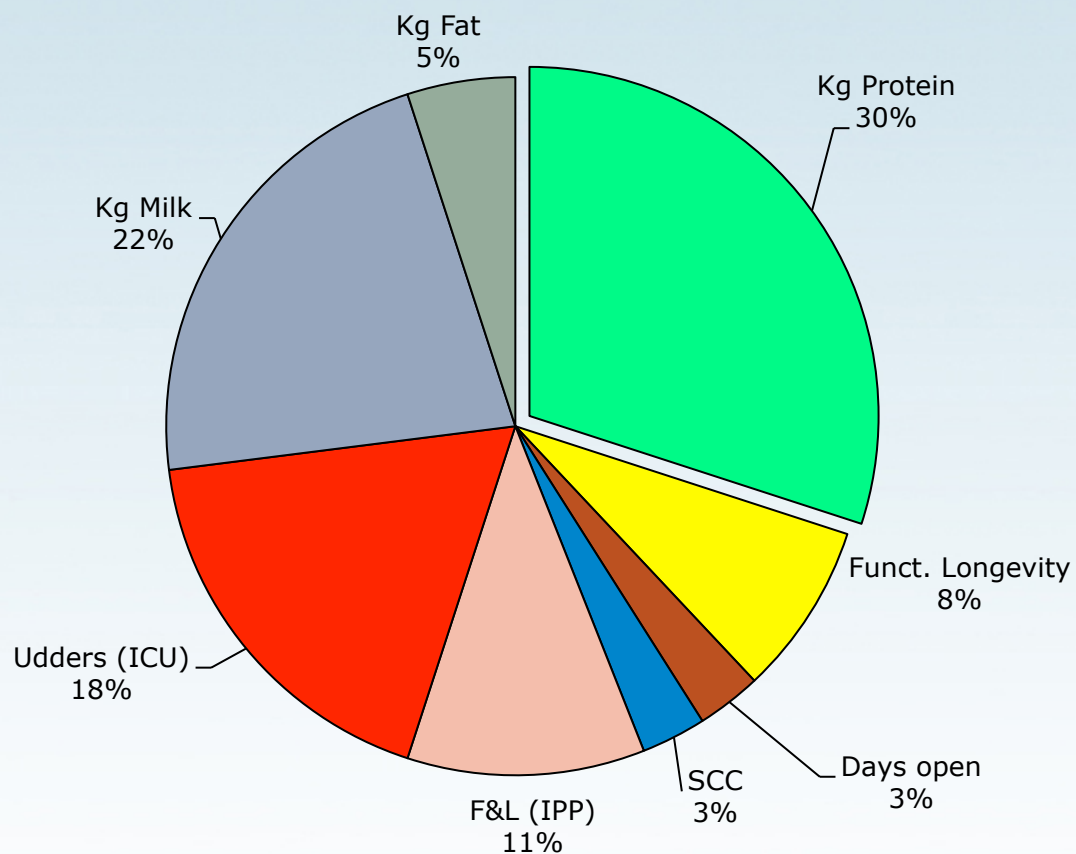
- Classifier vist, magazine, EBV report, web access to data
- Registration, type classif, traditional EBV/animal

Averages 305 days		
Kg Milk	% fat	% protein
<b>9545</b>	<b>3,65%</b>	<b>3,20%</b>

## **CONAFE ACTIVITIES**

- MILK RECORDING DATABASE & Coordination**
- TYPE CLASSIFICATION**
- PEDIGREE RECORDING**
- TRADITIONAL AND GENOMIC EVALUATION**
- MAGAZINE & TRAINING**
- SHOWS**

## TOTAL MERIT INDEX: ICO



57% Production

29% Udder and F&L

14% Functional

## Four spanish AI programs



150 bulls selected by for traditional progeny test by year  
(screening based on GEBV)

**Board of accords between CONAFE and AI center since 2011**

(genomic evaluations, Eurogenomics, gDMI, etc...)

**Xenetica Fontao also has a molecular lab where genotyping is done**

## Strong focus on COLLABORATION

**Genomic evaluation:** INIA research Center, AIs, Agricult. Minist.

**New Phenotypes** (Claw health data, mastitis): ANKA SERAGRO

**Eurogenomics:** reference pop, chip price, Euro10K, EBV harmonization



COLLABORATIVE FRAMEWORK

### **Internacional projects:**

EU projects: PROLIFIC, CONVERSION (?)

Other projects: gDMI, 1000 genomes project

## Genomic evaluations

First official genomic evaluation in 2012

Big reference population: > 25.000 Holstein bulls

All traits GEBVs validated by Interbull



Monthly evaluations

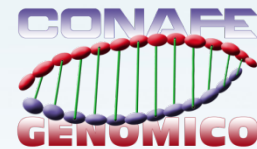
Routine SNP parentage verification of genotyped animals

Fertility haplotypes

### **Female genotyping service**

Total price Euro10K chip & genomic eval: 44 euros

**Male genotyping is not available for breeders  
because of Eurogenomic accords**



## NEW EUROGENOMICS LD CHIP V4



- **SNPS FROM STANDARD ILLUMINA LD (7K)**
- **COMMON SNP for EUROGENOMICS partners(2,5-3K)**
  - **SNP for improving imputation to 50K**
  - **SNP for parentage verification**
  - **SNP for imputing Microsatellites**
  - **SNP related to recessive genes**
- **PRIVATE PART SPAIN (1,5-2K)**
  - **SNP for GWAS studies**
  - **SNP interesting for other breeds**
- **PRIVATE PART OTHER PARTNERS (7,5K)**



## Young bulls GEBVs do not show a general drop

Bull name	ICO201211	ICO201406	Difference
EX-BALMORAL BEHOBIA ET	3014	3614	600
VENDAIRY WONDER	2985	2919	-66
BOS PLANET PLANETE ET	2942	3160	218
BOS ROUMARE CRISANTO ET	2795	2907	112
BLANCOH. AGRIS	2789	2687	-102
MONO VIÑES LLABRES ET	2759	2702	-57
VENTURO XACOBEO DIXIE	2730	3151	421
EX-BALMORAL BIKILA ET	2718	3245	527
PANSART ESPRIT	2709	2505	-204
NODI XACOBEO XUBILEO	2706	3170	464
<b>Average</b>	<b>2815</b>	<b>3006</b>	<b>191</b>

## I-SAP: Claw health recording in Spain (1)

➤ Since 2012

The screenshot shows the I-SAP software interface. At the top, there's a search bar with the animal ID 'ES011402492288'. Below it, a grid of animal icons with dates (05/04/2013, 27/03/2013, 08/02/2013, 20/12/2012, 06/11/2012, 25/10/2012) is visible. The main section displays a detailed view of an animal's claw health, including fields for 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), and Operator (ANKA1). There are also checkboxes for 'Fore Right', 'Rear Right', 'Fore Left', and 'Rear Left' with corresponding diagrams of a cow's legs. At the bottom, there are three buttons: a red 'X', a red 'X', and a green checkmark.

ANKA, SERAGRO,  
individual trimmers



Dermatitis  
Sole ulcer  
White line  
Hyperplasia  
Phlegmon  
Chronic laminitis

Lesions are recorded as Mild or  
Severe for each claw

Farmers



CONAFE DATABASE

I-SAP



I-SAP  
WEB SERVER

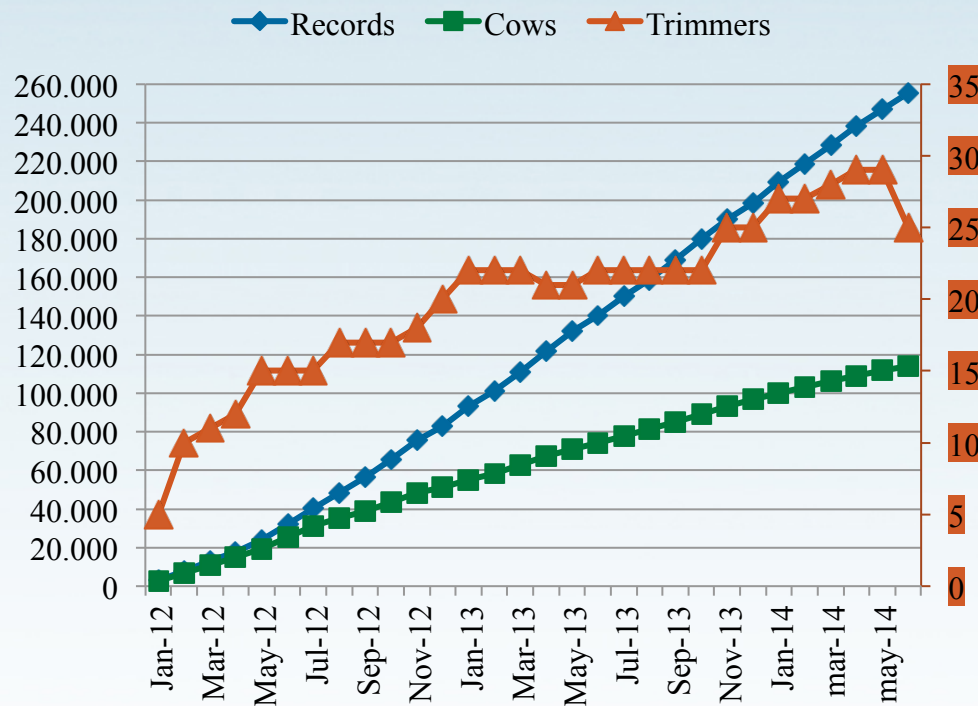


Online  
Statistical  
Figures

## I-SAP: Claw health recording in Spain (2)

25% of registered cows have claw health data

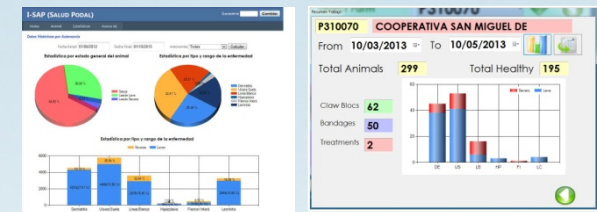
More than 100.00 cows in 1400 herds all over Spain



# CONAFE

## I-SAP: Claw health recording in Spain (3)

Feedback for trimmer and farmer



Annual harmonization meetings



CONAFE at ICAR Working group meetings

National Genetic evaluation in 2015

## Breeding for feed efficiency

- A priority because of rising feeding costs and enviromental legislation on nitrogen at farm level

### **gDMI project** (*Global Dry Matter Initiative*)

- Very few DMI data in any country
- Joint data & develop DGV prediction equations
- DGV accuracy=0.44 (*de Haas et al, 2014*)

### **Proposal EU Horizon 2020 proyect: CONVERSION**

- CONAFE has participated in this proposal (*lead by Wageningen U.*)
- Still to be approved by EU
- Multidisciplinary approach (Nutrition + genetics)
- An important goal: develop cheaper indirect measures for more accurate genomic predictions

## In progress

- **Start collecting MIR spectra from milk samplings**
- **Net of collaborators herds for collecting health data, linking it to the promotion of female genotyping**

## Main ideas

- **Genomic evaluations since 2012, validated by Interbull**
- **Eurogenomics: much more than a big reference population**
- **Recent developments on claw health recording**
- **Waiting for approbal of a multidisciplinar EU proyect on feed efficiency**

# CONAFE

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## THANKS FOR YOUR ATTENTION



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