

# Hoof Health in progress

**CRV**  
BETTER COWS | BETTER LIFE

Joost Klein Herenbrink

European RHF congres  
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# Cattle improvement at CRV

## It starts with insight

- into the wishes of the farmer
- into the quality of the herd

## Then come solutions

- genetic material
- management solutions
- services
- combinations of the above

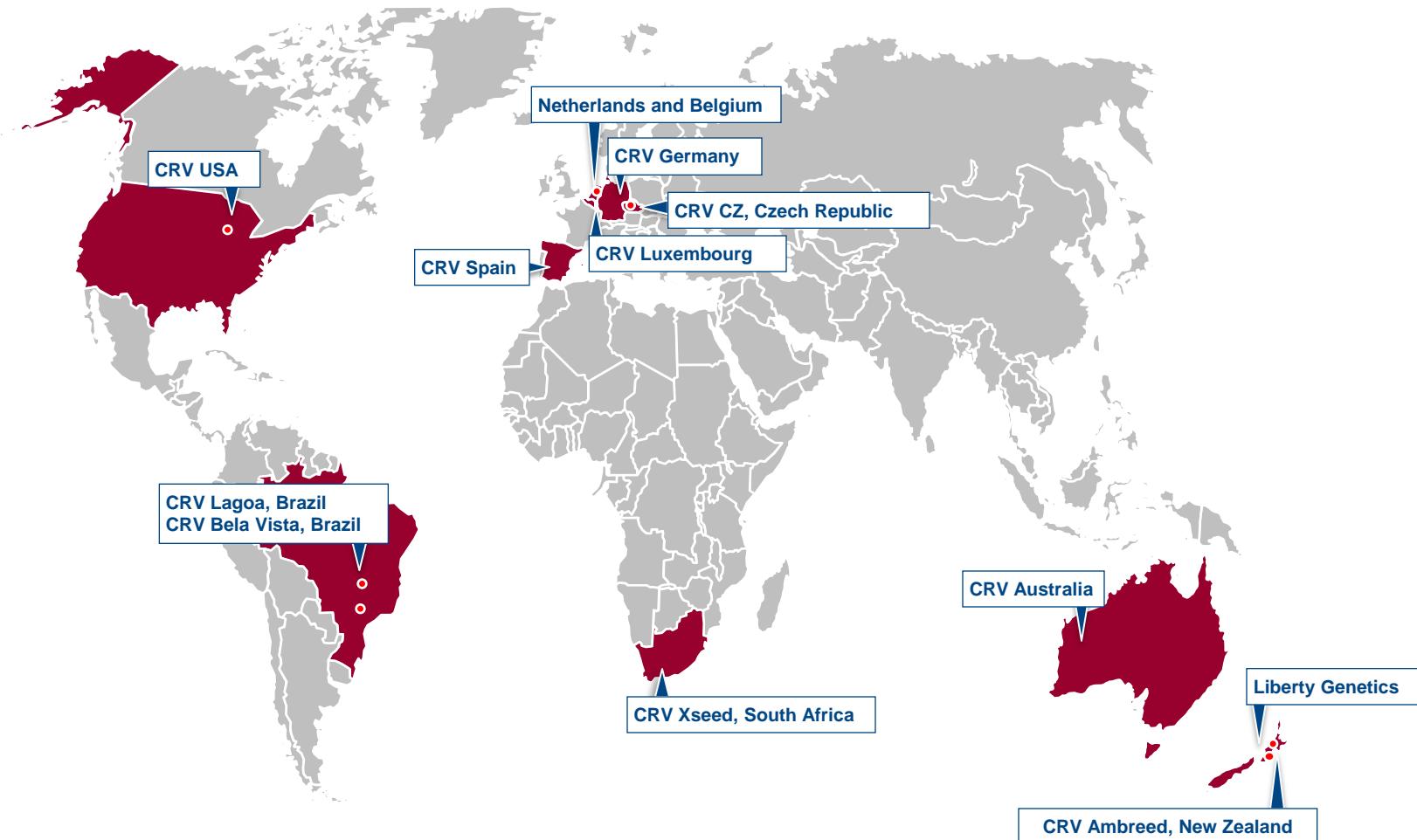


# Mission



**'CRV is  
a leading customer-focused  
cattle improvement co-operative,  
fully committed to adding value  
for farmers.'**

# CRV worldwide: our locations

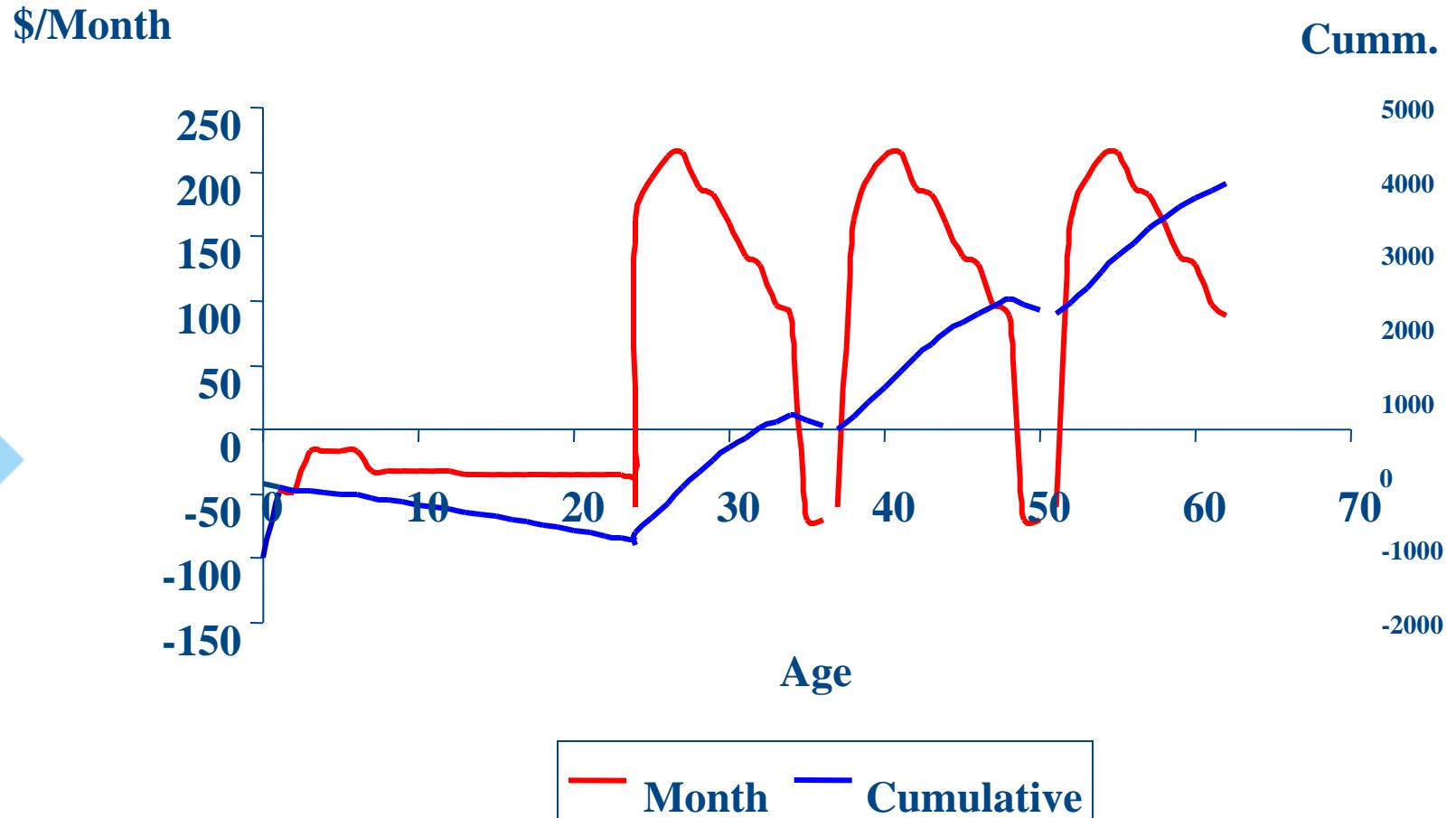


# Lifetime yield CRV herdbook cows



Kgs milk	30.318
% Fat	4.36%
% Protein	3.51%
Kgs Fat	1.323
Kgs Protein	1.063
Kgs Fat+Protein	2.386
Lifetime days	2.114
* Prod. days	1.318
* Rearing days	796

# Cash Flow per lactation and total lifetime



# RHF in the Netherlands and Flanders

(Percentage of all crv-inseminations)

	2006	2007	2008	2009	2010	2011
<b>HF</b>	65,3	64,8	65,3	62,9	57,3	54,7
<b>RHF</b>	<b>18,7</b>	20,7	23,3	23,5	25,2	<b>24,7</b>
<b>MRY</b>	2,2	2,1	2,0	1,8	1,7	1,7
<b>BB</b>	10,9	9,1	6,0	7,8	10,6	12,0
<b>Other</b>	2,9	3,2	3,4	4,0	5,2	6,9

Last year > 600.000 inseminations

- 25% growth in 5 years
- Outcross bloodlines
- High protein
- Strong F&L
- More strength



# Rapid increase in RHF inseminations HF herds

**Last year:**

Nearly half of all RHF inseminations was performed on HF cows.

<u>Year</u>	<u>%</u>
2007	34,8%
2008	38,3%
2009	40,9%
2010	47,0%
2011	48,1%



# Consistency leads to distinctive quality

Breeding goal has always been leading, with the result:

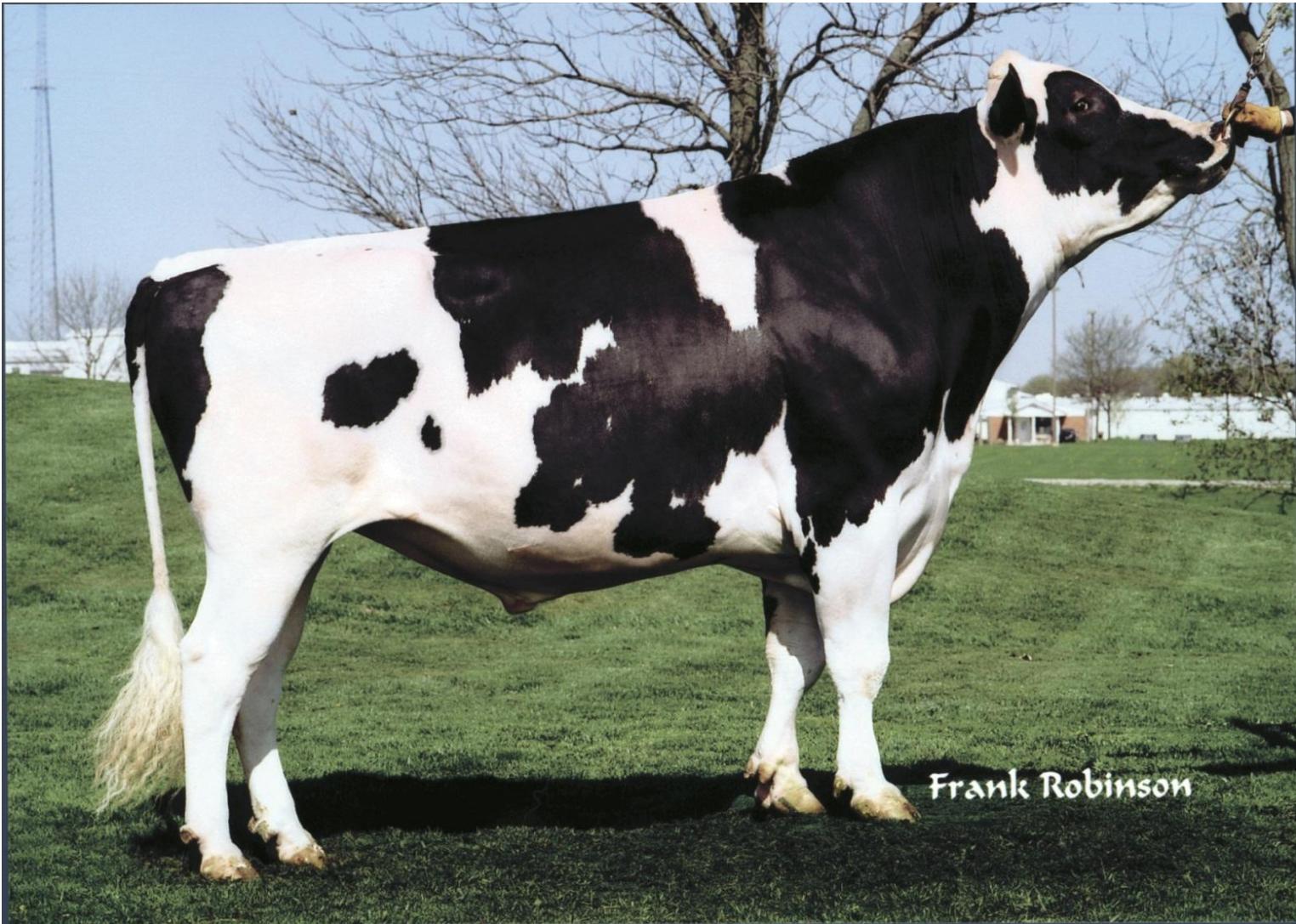
- Distinctive quality
- Distinctive bloodlines
- Distinctive position on the (inter)national market



Eric Elbers

**The one who is distinctive, is able to make use of chances.**



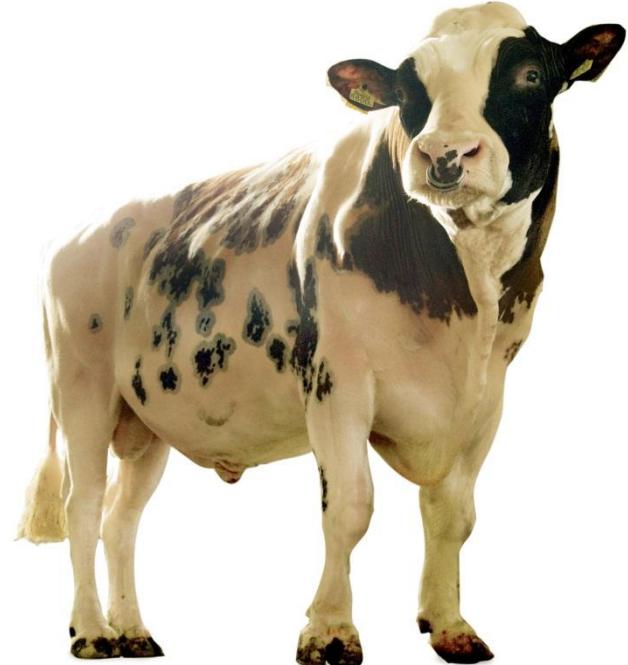


*Frank Robinson*

# Tribute to Kian

## The facts:

- 15 years old (date of birth 6 june 1997)
- The one and only Red & White millionaire in the world
- 10 years available and still very popular
- Very high customer satisfaction
- Very successful as sire of sons
- Top NVI grandsons available
- Excellent semen quality
- SiryX semen sold in 18 countries
- Conventional semen sold in 52 countries
- Almost 1,500.000 ds produced



# RHF bulls used > 50% on B&W cows

	2009	2010	2011
Fidelity	60%	72%	69%
Kylian	29%	51%	69%
Twister	51%	53%	60%
Kian	63%	59%	55%



Veneriete Twister Ida 18 (Twister \* O-Man)



Millford 4 (Kylian \* Cello)

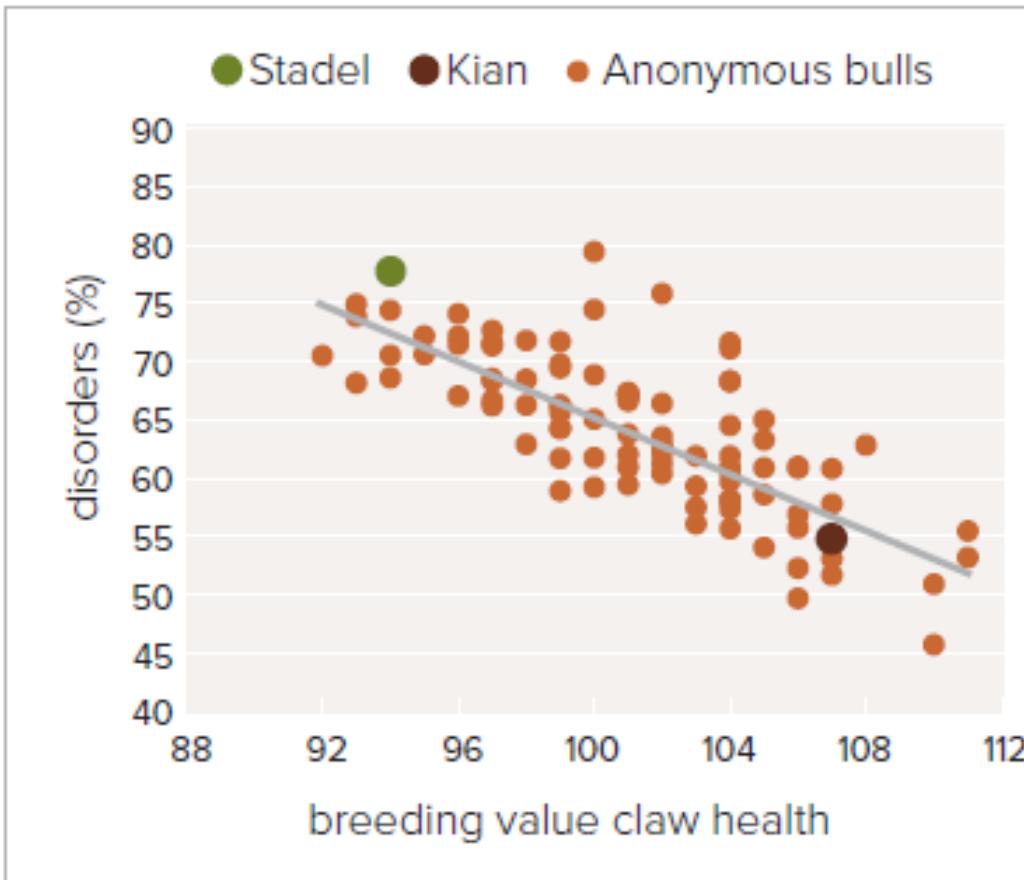


Eastland Golden 85 (Kian \* Cleo)



3 Kian daughters with a life time production of >60.000kg of milk

# Kian's popularity explained



# Implementation of the Hoof Health Index

- Hoof Health is major issue in dairy cattle
- 70% of all cows have a claw disorder
- Hoof Health data is routinely scored since 2006
  - enables breeding value estimation



# Definition of Hoof Health:

“A hoof without defects such as injury, unbalanced horn formation, lesions, and infections.”

Six hoof disorders are included in the Hoof Health Index and form the breeding goal:

1. Mortellaro
2. Footrot
3. Corns
4. Laminitis
5. Sole Ulcer
6. White Line Disease

# Hoof disorders I

- Mortellaro (Digital Dermatitis)



- Footrot (Interdigital Dermatitis)



- Corns (Interdigital hyperplasia)



source: Animal Health Service

# Hoof disorders II

- Laminitis (Sole Haemorrhage)



- Sole Ulcer



- White Line Disease



*source: Animal Health Service*

# Prevalence

Trait	Score	Prevalence(%)
Laminitis	0-3	38
Mortellaro	0-3	22
Footrot	0-3	29
Sole Ulcer	0-3	7
Corns	0-1	5
White Line Disease	0-1	11
At least 1 disorder	0-1	69

# Data for Breeding Value Estimation

- Hoof Health scores
  - Since October 2006
- F & L scores
  - Since 1998 (rear leg set available)



2,509.205

records in total

2,092.553

conformation scores

416.652

hoof health scores

127

hoof trimmers

# Model

- Multi-trait animal model including 17 traits
  - 6 hoof disorders in 2 lactation groups
    - parity 1 and parity 2+
  - 5 feet & leg conformation traits
    - Rear Leg Rear View
    - Rear Leg Side View
    - Foot Angle
    - Locomotion
    - Feet & Legs



## Corrects for:

- age at calving (heifers) /parity (cows)
- stage of lactation
- heterosis
- recombination
- herd-classifier (conformation data)
- herd-testdate (claw data)
- hooftrimmer-half year (claw data)
- permanent environment (claw data)
- animal

# Hoof Health Index

- Index derived based on economic loss of hoof disorder
  - range from €55,- to €79,-
- Hoof Health Index
  - On relative scale of 100 +/- 4
  - Index = 
$$100 + 0,362 \times (\text{BV}_{\text{SH}} - 100)$$
$$+ 0,395 \times (\text{BV}_{\text{DD}} - 100)$$
$$+ 0,425 \times (\text{BV}_{\text{ID}} - 100)$$
$$+ 0,177 \times (\text{BV}_{\text{SU}} - 100)$$
$$+ 0,102 \times (\text{BV}_{\text{IH}} - 100)$$
$$+ 0,094 \times (\text{BV}_{\text{WLD}} - 100)$$

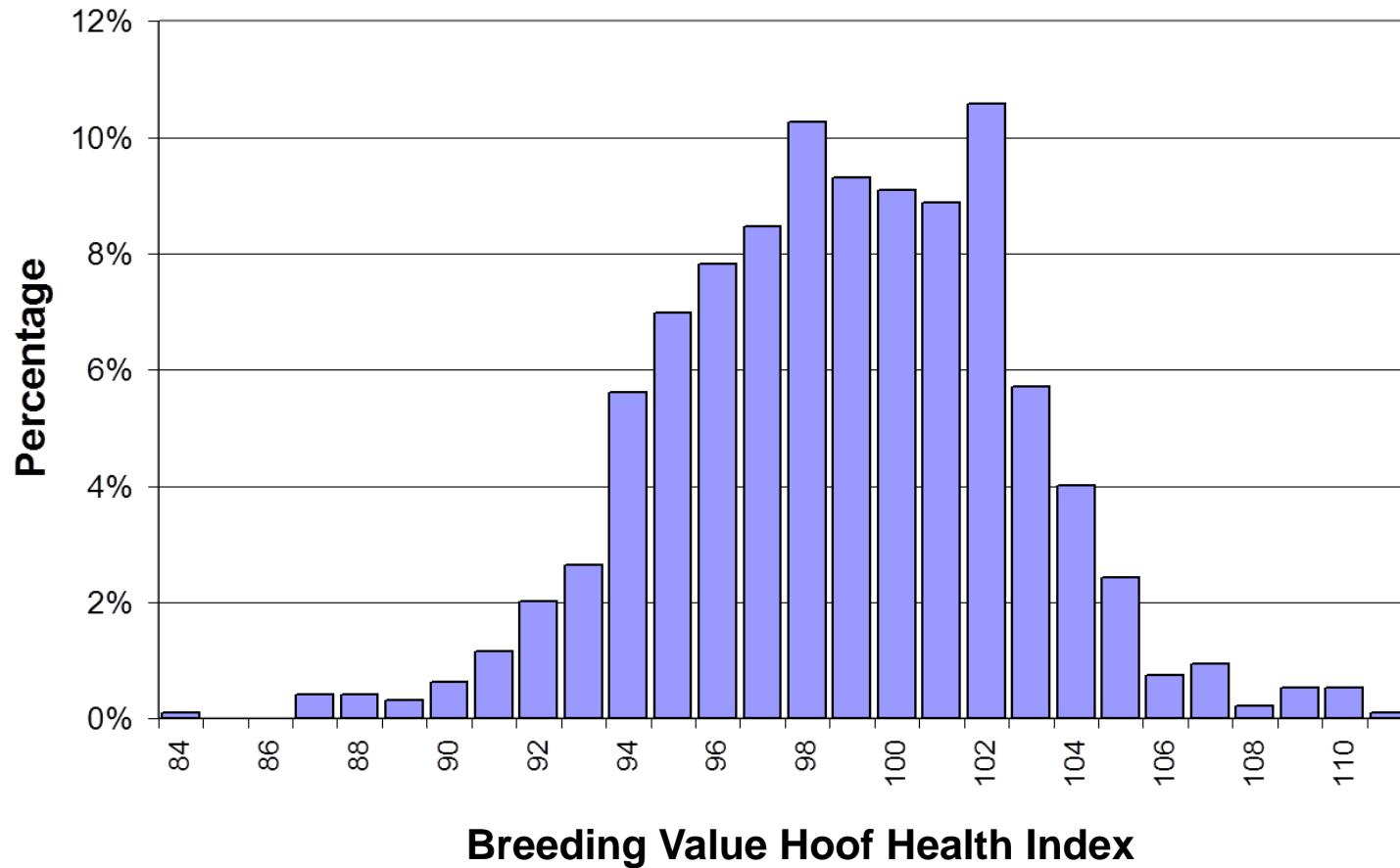
# Genetic correlation Index - other traits

- Kg milk -0,07
- Kg fat 0,15
- Kg protein 0,08
- SCC 0,06
- Udder 0,14
- Udder health 0,05
- Fertility -0,02
- Longevity 0,29
- Legs 0,62

# Genetic correlation Hoof Health

	Longevity	Hoof Health	Feet & Legs	Udder Health
<b>Kodak</b>	696	106	105	106
<b>Kian</b>	438	108	110	101
<b>Stadel</b>	653	93	106	109

# Breeding Values Hoof Health Index



# Conclusions

- Hoof Health is economically important
- Hoof Health traits are heritable
- Variation between bull's EBV present
- Improving Hoof Health requires claw data
  
- Hoof Health is a breeding value in progress
  - new CRV testing system will improve data collection



# Thank you for your attention!

