# REDUCING LAMENESS THROUGH A HOOF HEALTH BREEDING INDEX Evgeny Telezhenko PhD



Farm Health Planning – Coordinated by the Cattle Health and Welfare Group and British Cattle Veterinary Association

What happens with hoof health as a consequence of intensive selection for dairy production?

- 1. It gets better
- 2. It gets worse
- 3. It stays the same



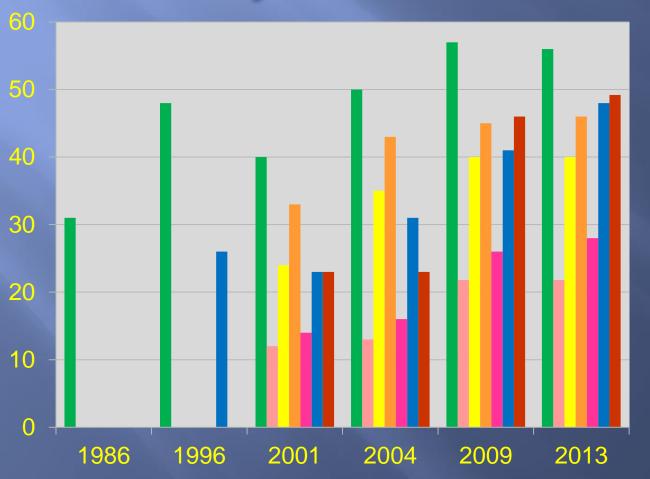
## VikingGenetics – breeding company of Denmark, Sweden and Finland

12 Juny



## Scandinavian countries – pioneers of using health and fertility traits in selection

### % of fertility and health traits in selection index



Denmark/Finland/Sweden
Canada
Germany
Holland
USA TPI
USA NM\$
UK



## 2011- Hoof Health is included in the Nordic Total Merit index

First time in history hoof health was included in the overall breeding goal





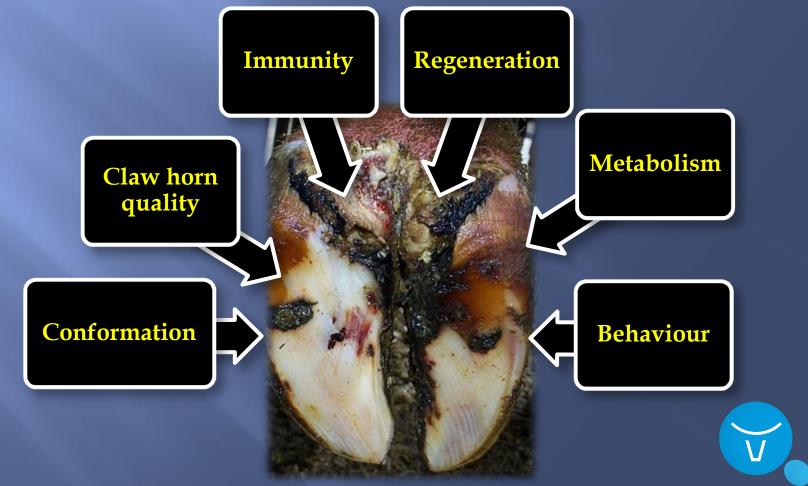
### Lameness - the top three for economic losses Greatest animal welfare problem in dairy industry



## It is not only about management



Why it could be genetic? Factors with some genetic portion influencing resistance to foot disorders



Why they are healthy? rather than Why they are sick?

- Most of claw disorders are of multifactorial origin
- Direct selection on the claw health is more efficient than using indirect/correlated traits
   Don't forget You get what you breed for!



## Nordic countries have the largest Hoof health database in the world

Cow Database

#### Nordic Cattle Genetic Evaluation





Breeding values Annually about 500 000 cows evaluated, including about 300 000 Holsteins in Denmark, Sweden and Finland

# All statistics about own herd are available for



## Hoof health index – what is in it?

Lesions and % of Genetic Progress in selection for HHI

#### **INFECTIOUS (HYGIENE RELATED)**

- Heel Horn Erosion (62%)
- Digital/Interdigital Dermatitis (50%)
- Skin Proliferation (41%)



#### **ABNORMAL SHAPE**

Cork Screw Claw (57%)



#### LAMINITIS RELATED

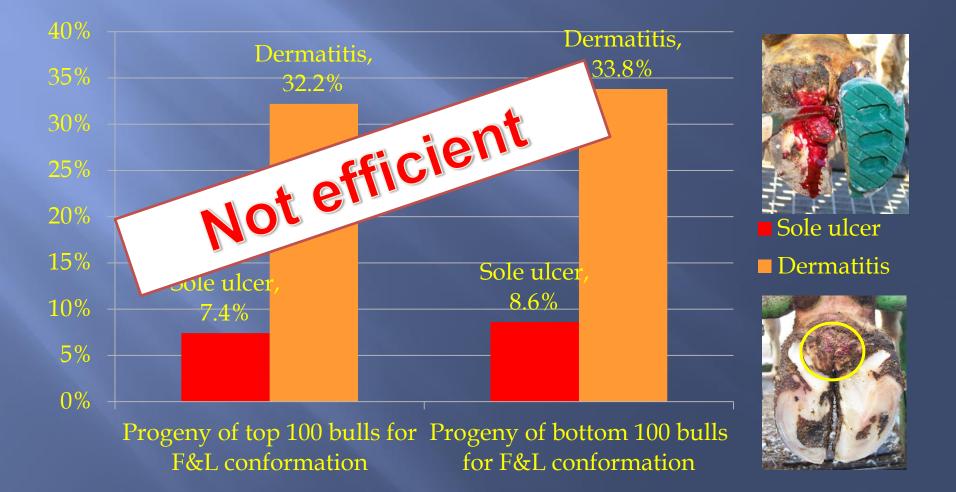
- Sole Haemorrhages (83%)
- White Line Disease + Double Sole (78%)
- <u>Sole Ulcer (90%)</u>

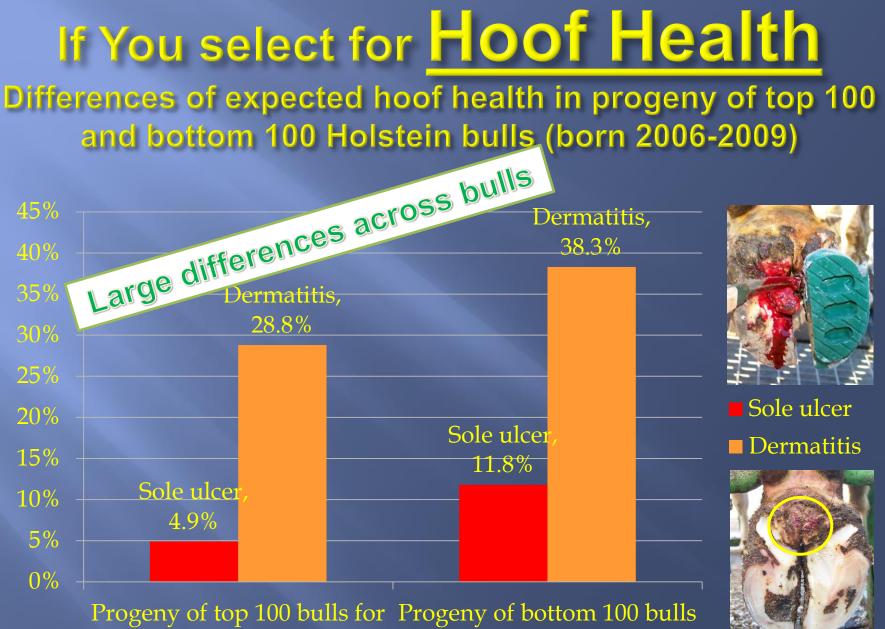




# If You select for F&L conformation

Differences of expected hoof health in progeny of top 100 and bottom 100 Holstein bulls (born 2006-2009)





Progeny of top 100 bulls for Progeny of bottom 100 bulls Hoof Health Index for Hoof Health Index

# Breeding for Hoof health will save your money!

The difference in sole ulcer between "best bulls" and "worst bulls" is 7% points Average annual costs for a cow with Sole Ulcer in UK are £324.17 For a herd with 150 COWS the difference would mean £3 404 per year This difference is solely due to decisions in breeding strategy

## It is possible to combine genetics for good hoof health with genetics for good production!

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HOL 252791						+23
aAa: 342516 Kappa Casein: BB		S: 2 MGS: 2	246705 OMAN JUSTI 242598 V EXCES	PGS: 239904 GMGS: 241920	HA MANFRED RGK BOB CV	
orn 06-08-2008 reeder: Niels Jørgen Krist	ensen, Ø	isterbølle, Aalestr	up			_
PRODUCTION TRAITS		Number of daugh	ters: 2342 , Reliabi	lity prod. 99%		
Prod. index	115					
Milk, kg	97					
Protein, kg	110					
Protein %	122					
Fat, kg	116					
Fat %	117					🖉 🗠 🕺 🖉 Elly Ganerink
Growth	119					and the second
	80	90	100	110	120	
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	104					
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UNCTIONAL TRAITS	107					
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## It is possible to combine genetics for good hoof health with genetics for good production!

VH Gento Ajmunde G HOL 48898 aAa: Kappa Casein:	room 48	3898	S: 90814 VH GENTC MGS: 90468 O-MAN	) PGS: 90614 GL GMGS: 90424 CL		+21
Born 08-05-2010 Breeder: Ejdertun Lars	Och Ar	nnika, Gerum Aj		0		
PRODUCTION TRAITS	N	Number of daughter	rs: 151 , Reliability prod. 91%	6		
Prod. index	113					
Milk, kg	106					
Protein, kg	112					
Protein %	108					
Fat, kg	113					
Fat %	105					.05
Growth	109					
HEALTH TRAITS	08	90 Number of daughter		10 120		ra ner
HEALTH TRAITS						N'
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# Which bull will contribute to reduction of lameness in the herd?

- Bull whose daughters have superior F&L conformation
- Bull whose daughters have multiple records of good hoof health
- 3. There is no bull effect on lameness, it's all management



## Take home message

- Breeding is important tool to improve hoof health
- So far only Nordic countries provides breeding evaluation for Hoof Health solely based on large number of health registrations
- There is a big variation in Hoof Health Index across bulls, and there are bulls combining good hoof health with good production



## Healthy cows – happy farmers

