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



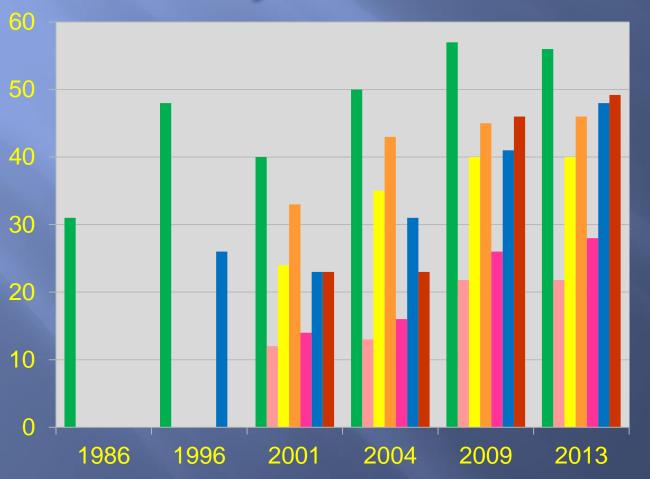
VikingGenetics – breeding company of Denmark, Sweden and Finland

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

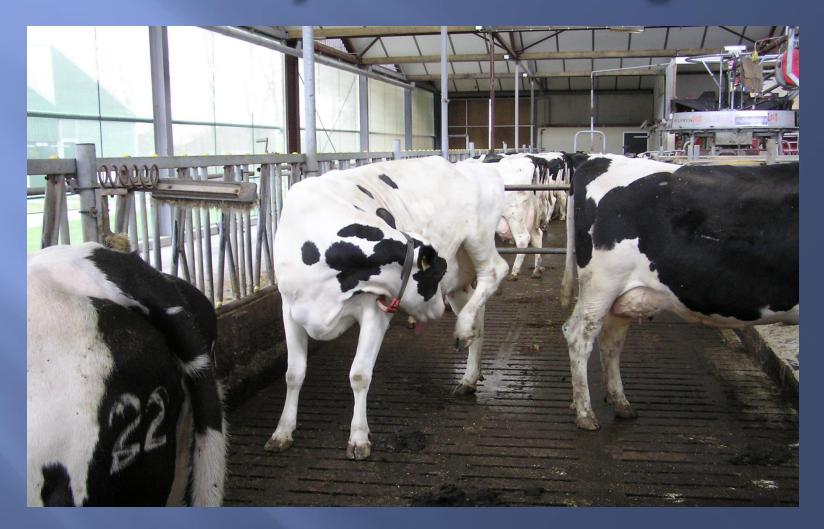




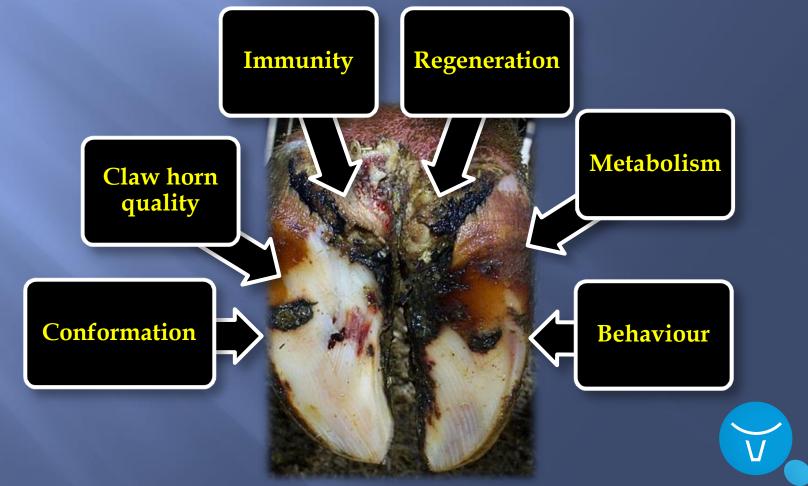
Lameness - the top three for economic losses Greatest animal welfare problem in dairy industry



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

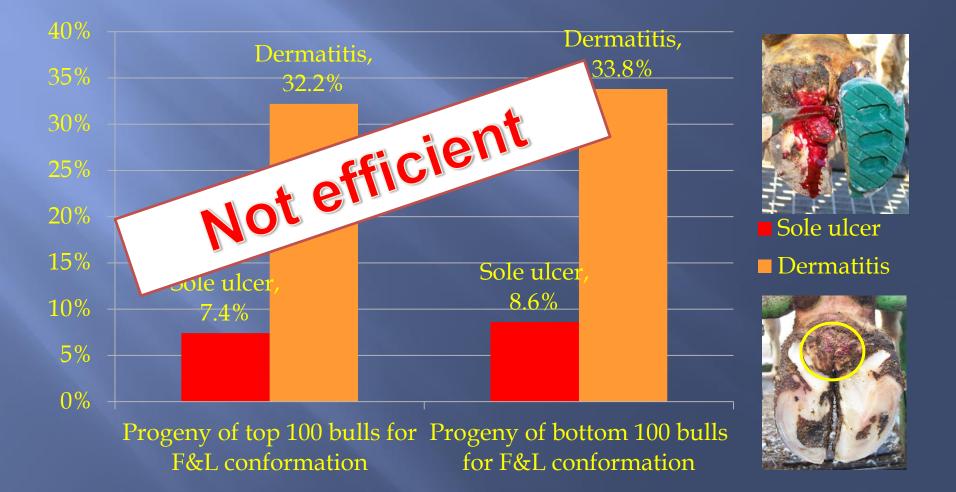
- Sole Haemorrhages (83%)
- White Line Disease + Double Sole (78%)
- <u>Sole Ulcer (90%)</u>

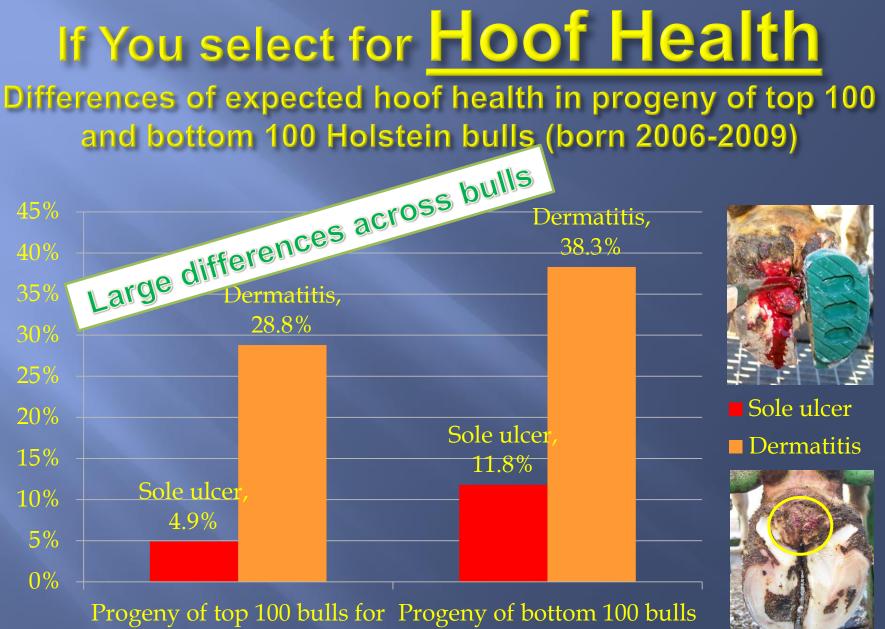




If You select for F&L conformation

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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VH Oyvind						NTM
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	
EALTH TRAITS		Number of daugh	ters: 2119			Aspender Aller
aughter fertility	102					
Calvings, Sire	99					
Calvings, maternal	97					
ldder health	107					
)ther diseases	117					sense a frances and a frances of
ongevity	105					0 Eily Geverink
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	80	90	100	110	120	
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eet and legs	114					
	104					
Jdder						HER THERE
UNCTIONAL TRAITS	107					
Jdder FUNCTIONAL TRAITS Milking speed Femperament	107 105					A Elly Sevide



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

