

Genetic Evaluation of Claw Health in Denmark, Finland and Sweden

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Interbull open meeting
Stavanger 2011

Recording

Trait	Disorders (coding)	Percentage
Dermatitis (DE)	Interdigital (1), digital (2), dermatitis	15
Heel Horn Erosion (HH)	Mild (1), severe (2)	24
Skin Proliferation (SP)	Interdigital hyperplasia, wart (1)	5
Sole Haemorrhage (SH)	Mild (1), severe (2)	22
Sole Ulcer (SU)	Mild (1), severe (2)	5
Cork screw claws (CSC)	(1)	3
White line separation (WLS)	White line separation, double sole (1)	6

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dansk: Sålesår
engelsk: Sole ulcer
svensk: Klövsulesår
finsk: Anturahaavauma (764)

Mild



Svær



Trait definition

- **Seven (7) traits per lactation**
- **Three (3) lactations**
- **Maximum three (3) trimmings per lactation**
- **Trimmings within 430 days after calving**

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Number of trimmed and evaluated COWS

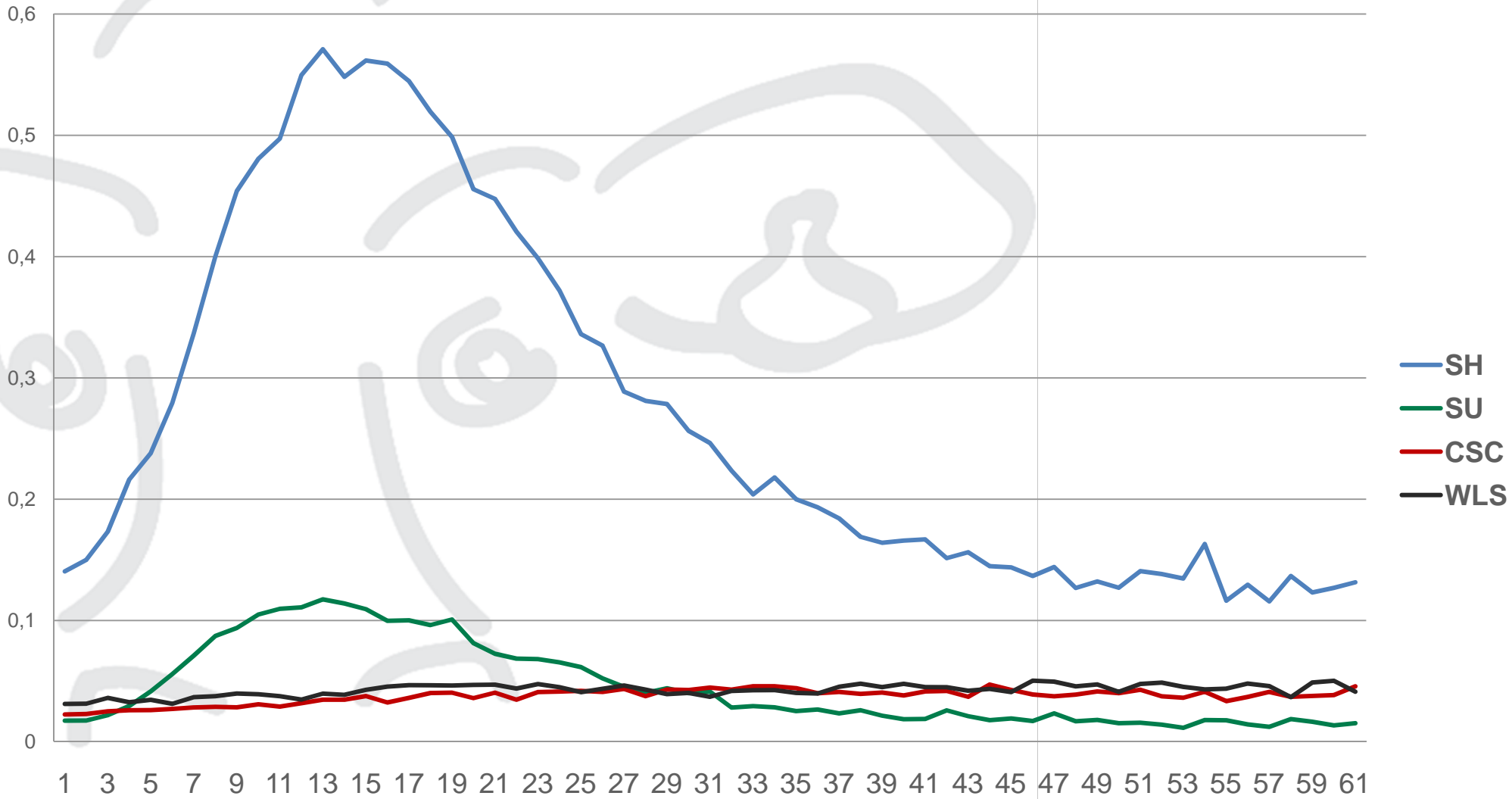
	Holstein	RDC	Jersey
Denmark	135464	12417	20275
Finland	19082	39579	-
Sweden	142358	127244	1782

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Effect of lactation stage - RDC



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Model

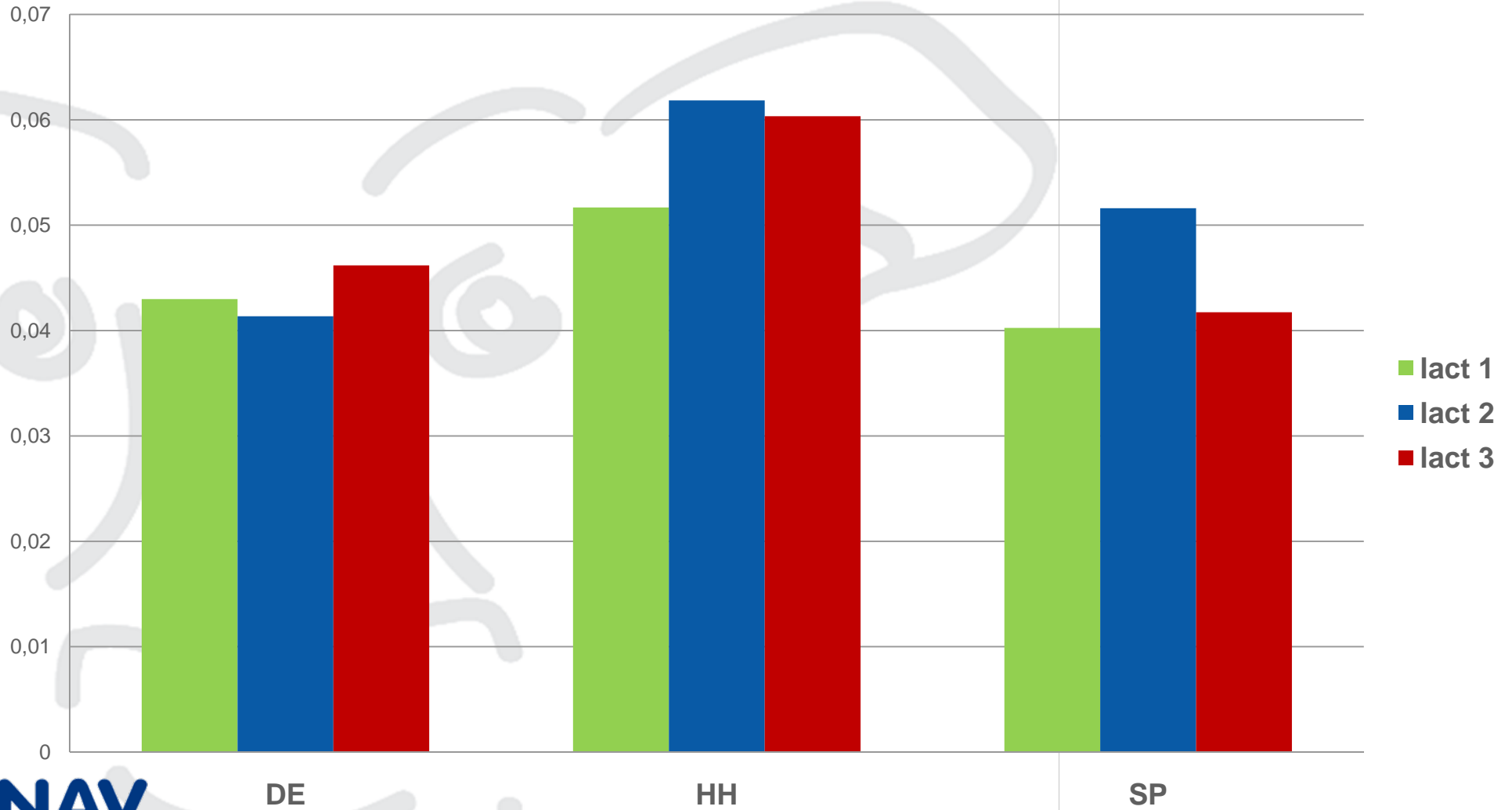
Effect	Type
Herd*period (5-year)	Fixed
Herd*½-year	Random
Year*month	Fixed
Lactation stage	Fixed
Calving age	Fixed
Permanent environment	Random
Animal	Random

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Heritabilities - infection related traits



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DE

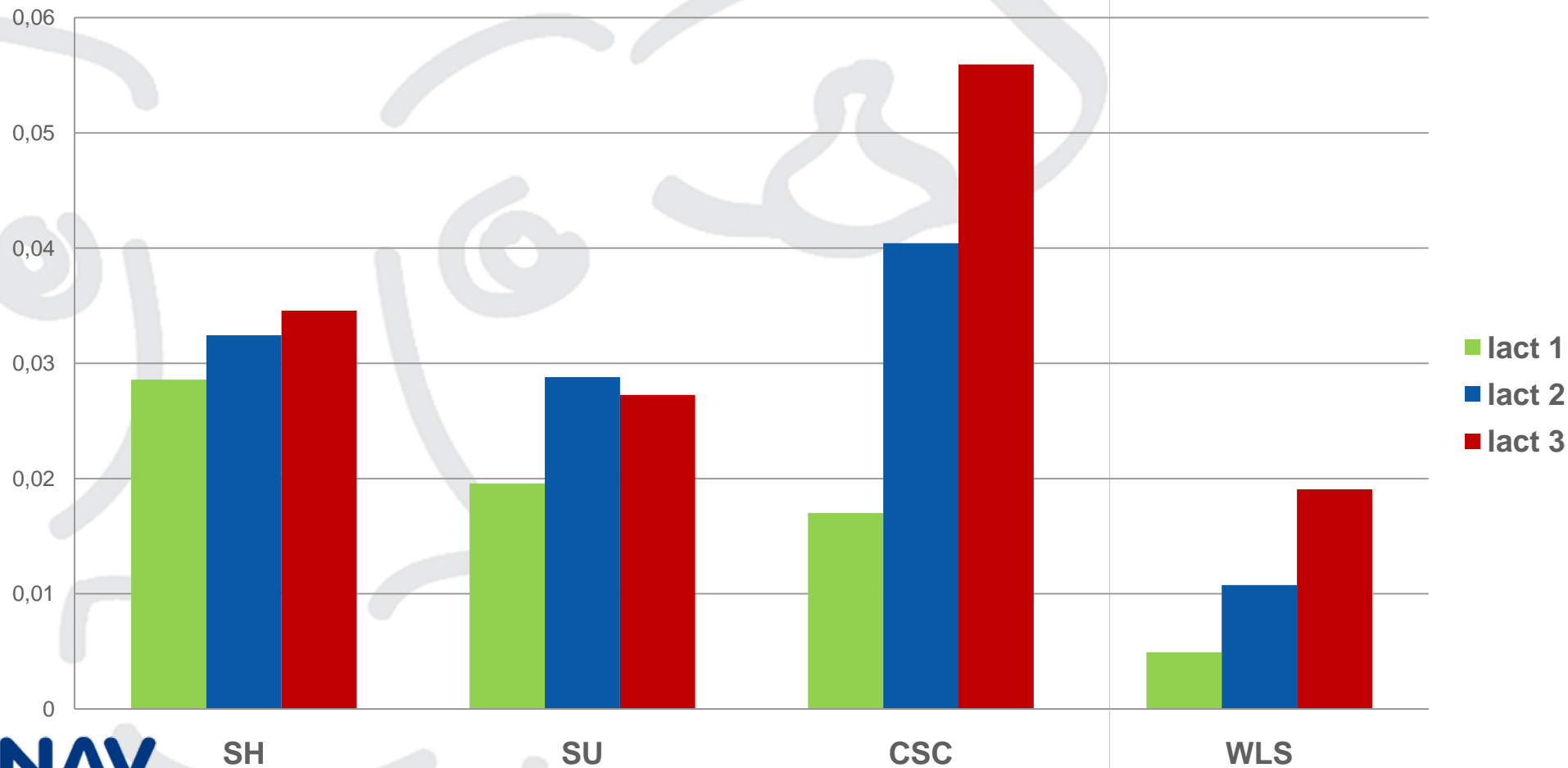
HH

SP



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Heritabilitis - feed related traits and CSC



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SH

SU

CSC

WLS



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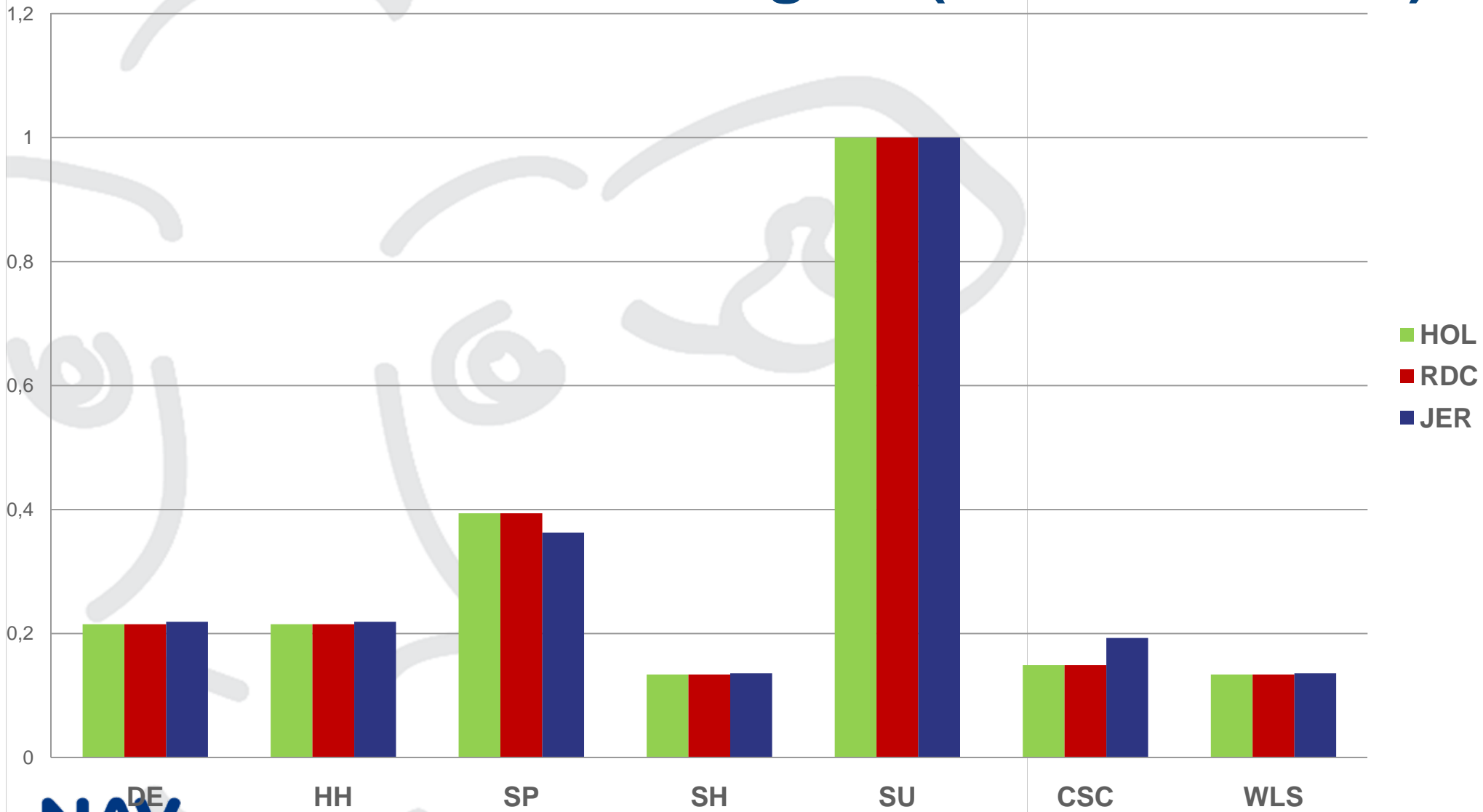
Genetic correlations

Between	Range
Infection related traits (DE, HH, SP)	0.3 to 0.9
Feed related traits (SH, SU, CSC, WLS)	0.2 to 0.9

Between	Range
Infection related traits and feed related traits	-0.2 to 0.3

Between	
Same trait in different lactation	0.66 to 0.99

Relative economic weights (Pedersen 2011)



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Claw health index (CHI) into NTM

Breed	Economic weights for CHI in NTM	Ratio between index unit values in euros
		CHI / Yield
Holstein	0.08	0.053
RDC	0.05	0.037
Jersey	0.05	0.048

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Cows per sire (n) and reliability (r²) for Claw Health Index

	Holstein		RDC		Jersey	
	n	r ²	n	r ²	n	r ²
Denmark	22	62	19	54	22	56
Finland	13	52	11	48		
Sweden	44	73	59	78	7	65

Sires born 2004-2006.

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Claw health index: EBV correlations (Eriksson 2011)

	HOL	RDC
• Longevity	0.25	0.20
• NTM	0.20	0.05
• Other diseases	0.15	0.15
• Udder health	0.15	0.10
• Feet&Legs	0.05	0.15
• Temperament	-0.05	-0.15

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Publication rules

- Sires with at least 1 trimmed daughter
- Official Claw health index when reliability = 40 and over
- Almost all sires from Denmark and Sweden
- >80% of sires from Finland

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Summary

- **Claw health information is included in NTM**
- **Selection for claw health is favourable for all health traits**
- **Most bulls will have an official Claw Health Index**

Thank You!!

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