



GS breeding plan in practice

Internal Seminar
8. November 2011

Kenneth Byskov

Breeding Goal

The
Profitable
Choice

= NTM + variation in descent



**Our main selection criteria is Nordic
Total Merit (NTM) and variation in
descent.**

Number of milk recorded cows

	Denmark	Sweden	Finland	In total
Holstein	376,000	147,500	78,200	601,700
Jersey	65,000	2,000	-	67,000
VikingRed	38,500	122,000	147,200	307,700
Red Holstein	5,800	-	-	5,800
SKB/Finncattle	-	1,200	2,800	4,000
Total	485,300	272,700	228,200	986,200



Holstein



Viking Red



Jersey

Selection in Steps



Best proven bulls
Elite Sires



Proven bull
based on daughter information
5 years old



15-20/20-25/12-15
Put out as proven bulls
based on genomic index
20 Months



175/200/55
Put out as young sires
(1500-2000 doses)

Screening of all
pregnancies



1.800/ 2.000/300
Chosen to genomic test



260/275/65
Bought based on
Genomic values



Numbers of bought, started & kept alive bulls

Breed/months	0-11	12-24	25-36	37-48	49-60	61-72	73-84	Total
Holstein incl red	257	180	160	130	100	45	15	630
Jersey	65	55	48	46	35	15	10	209
VikingRed	275	200	185	155	120	45	15	720
SKB	5	5	0	0	0	0	0	5
Finn Cattle	6	5	0	0	0	0	0	5
Beef	0	10	0	0	0	0	0	10
Total	604	455	393	331	255	105	40	1579

0-11 months: Bought bulls (Enter our facilities at 4 months of age) = 410 bulls if equal distributed over the year

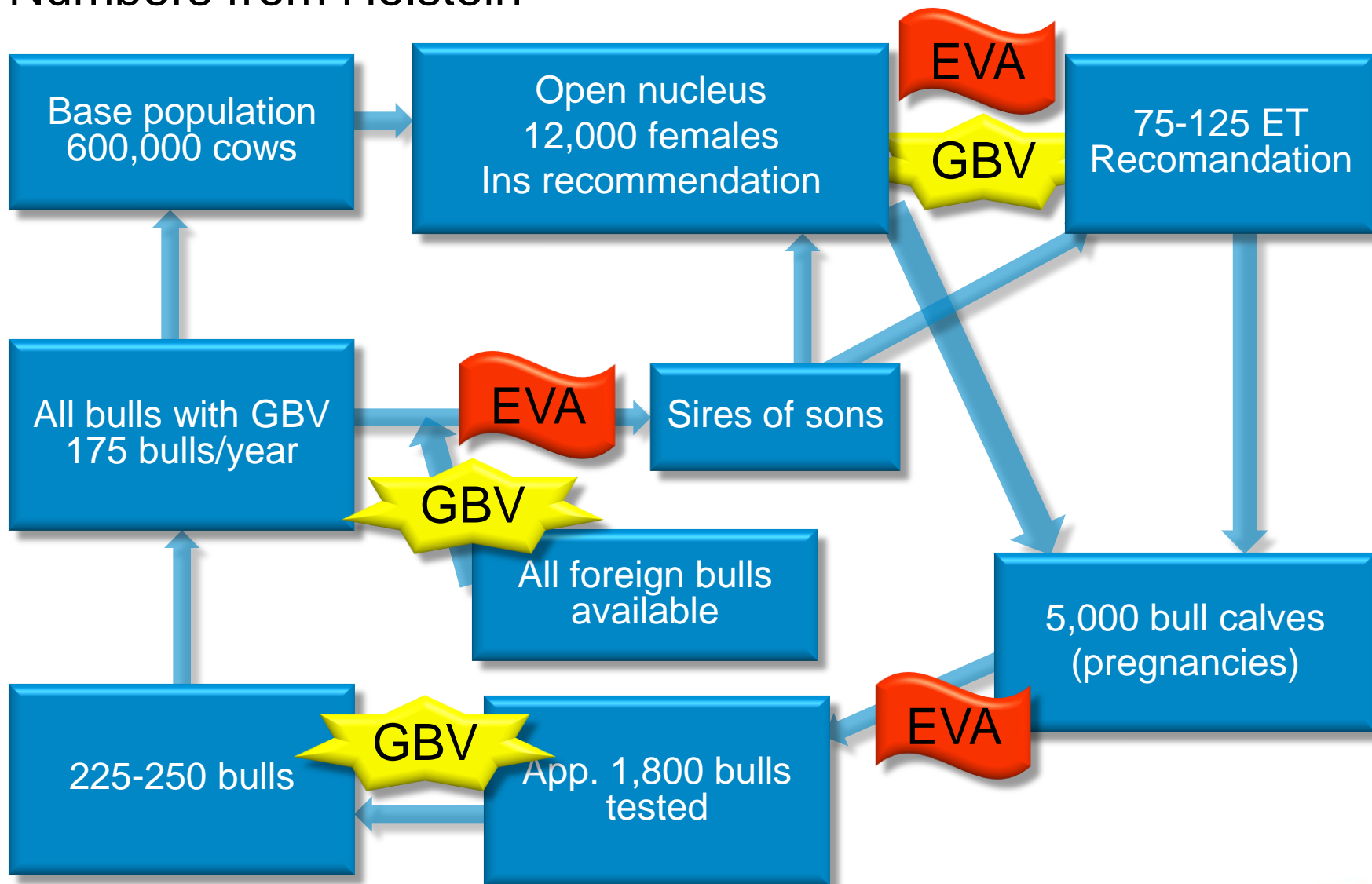
12-24 months: started as young bulls

Effect of using GS in our breeding.

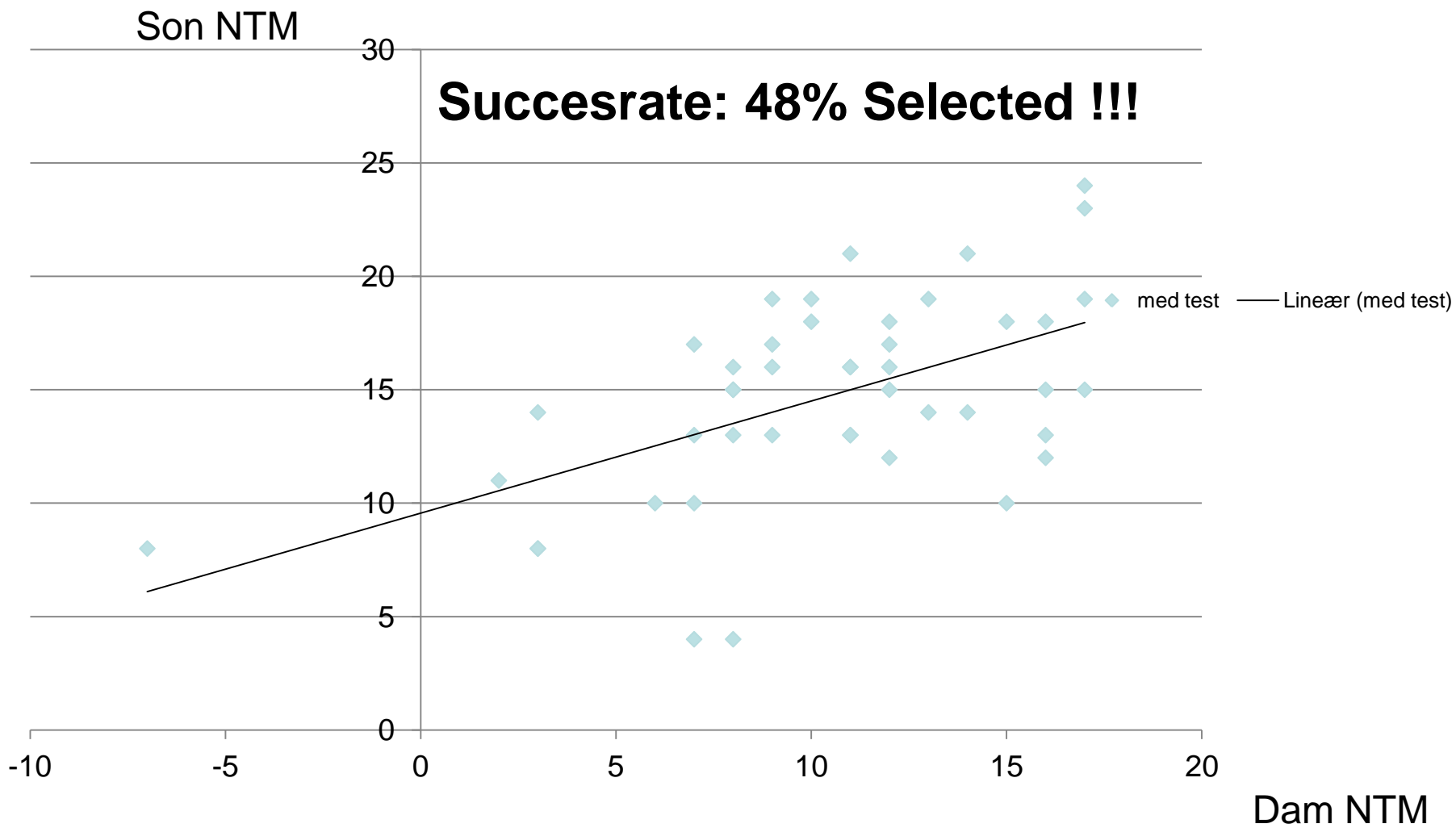
- Higher genetic progress.
- Lower cost of rearing bulls
 - Number of bought Holstein reduced with nearly 50%.
 - Number of bought Jersey and VikingRed bulls not changed.
- More farmers involved in the breeding program
- Close to 60% of all Holstein semen sold in DNK is bulls without daughters.

Breeding scheme overview

Numbers from Holstein



Jersey – Dam tested

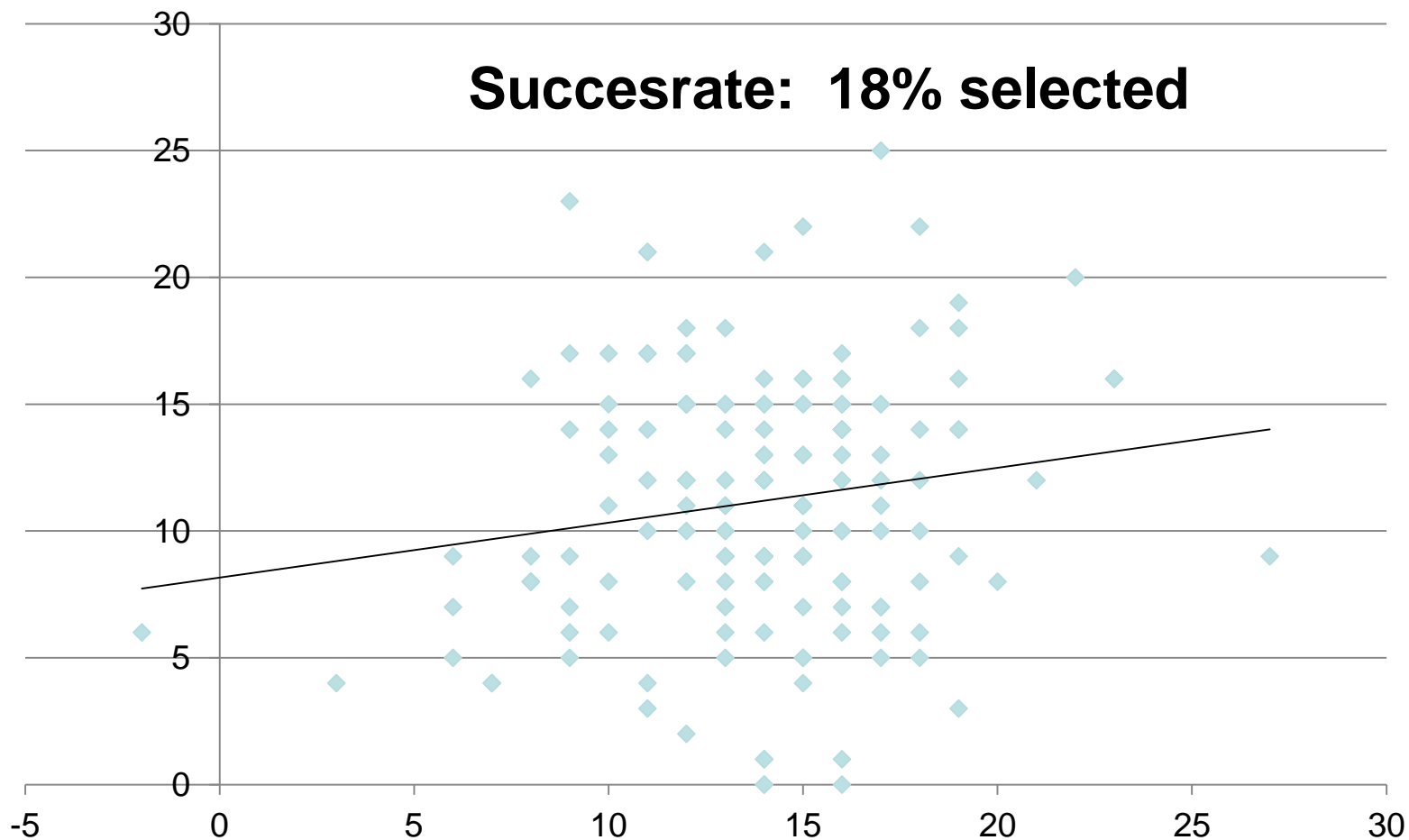


Jersey – Dam not tested

Son NTM

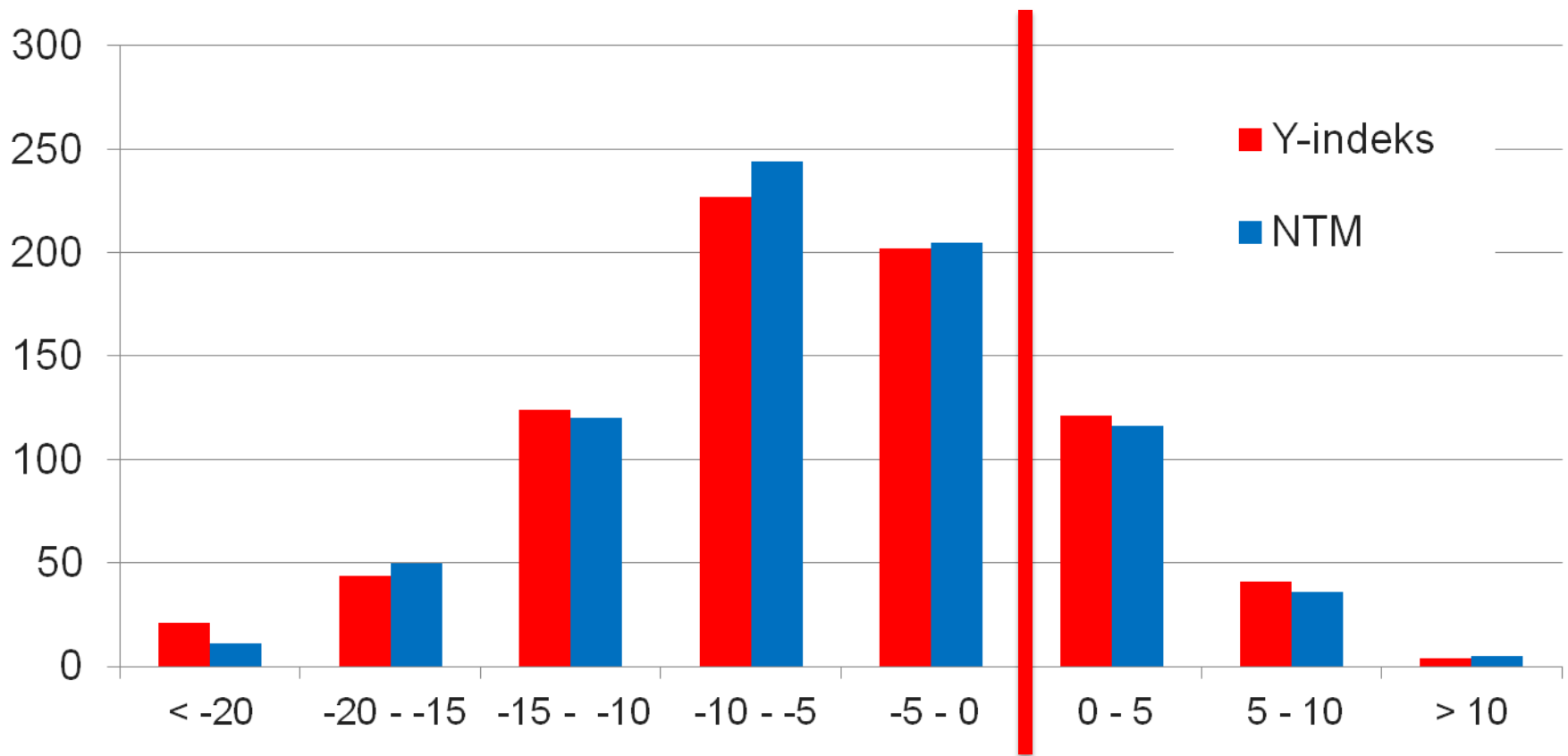
Succesrate: 18% selected

◆ uden test
— Lineær (uden test)



Dam NTM

Ændringer på Holstein kvier efter typning



More knowledges needed!

- We have now the first bulls, where sire is a bull without daughter information. Should we treat these bulls different according to reliability?
- We select outcross bulls, but they need to deviate far from the sire index? What happens to the outcross effect?
- If we have a group of fullsibs -> Biggest difference in indicies also have the lowest relationship?

NTM	Y	P	M	F	UH	OD	Mam
19	111	107	94	107	110	96	109
23	128	128	125	122	101	95	100
22	124	124	118	118	99	86	105

More knowledges needed!

True best bulls is the bulls with a low GEBV but a high true breeding value?

Errors in is given to the son?

Outcross bulls have a lower reliability?

In Holstein we have more than 80 bulls available with NTM between 25 and 36. Which bulls to choice as sires of sons? The bulls with the highest heterozygosity?