Present NTM

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The process towards Nordic Total Merit Index (NTM)

1) Economic values for single traits

44 single traits – single conformation traits not included

- **Based on "Spring 2007" situation !!**

2) Breeding goal adjustments 2008

Input from breed organisations and others on

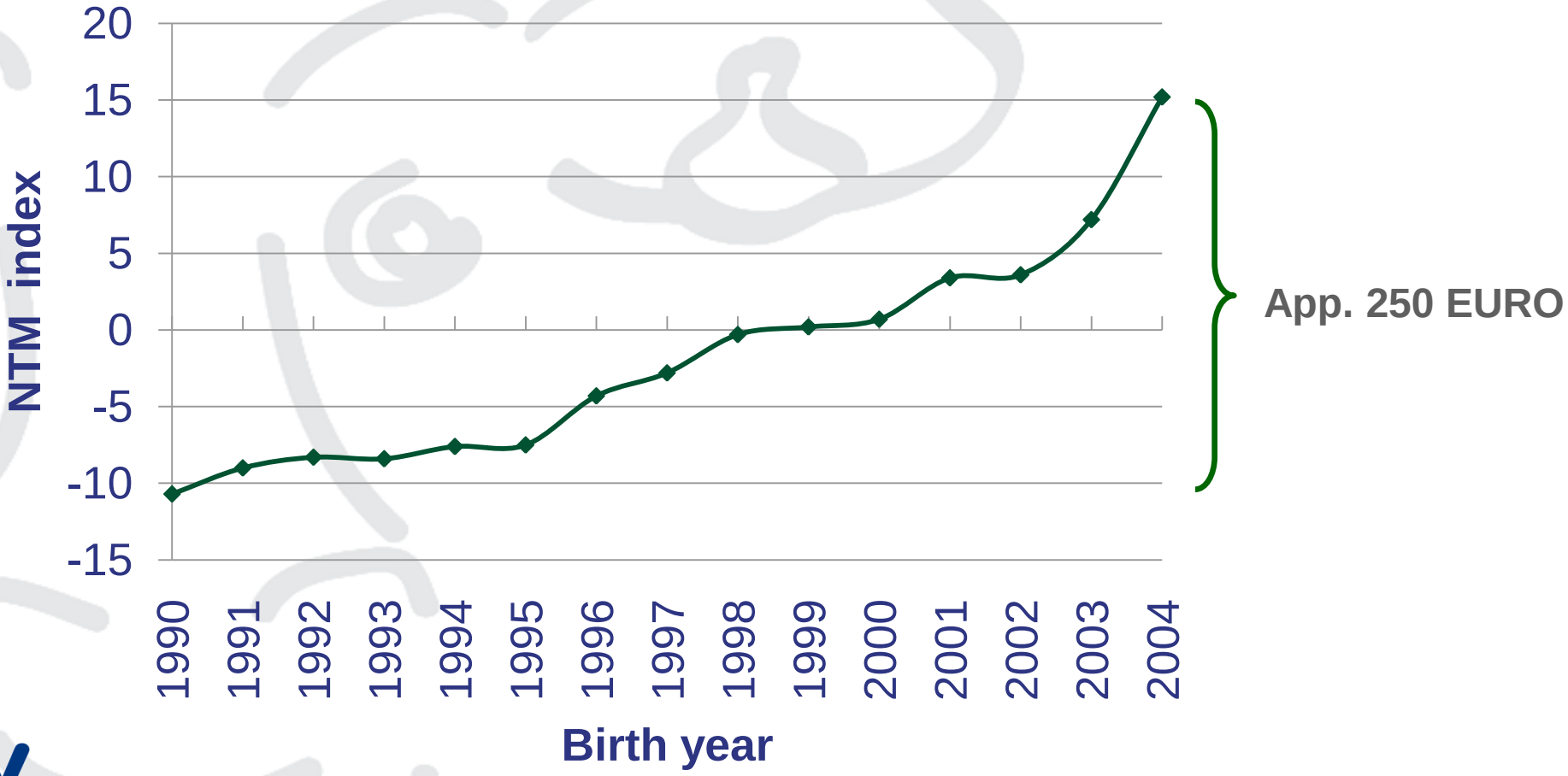
- ***Perspective for the future***
- ***"Non-economic" value***

3) Implementation in practice August 2008

Index weights from model and NTM (scaled)

Trait	HOL		RDC	
	Model	NTM	Model	NTM
Yield	0.75	0.75	0.92	0.92
Growth	0.06	0.06	0.10	0.00
Fertility	0.31	0.31	0.26	0.26
Calving - direct	0.15	0.15	0.14	0.14
Calving - maternal	0.17	0.17	0.12	0.12
Udder health	0.35	0.35	0.31	0.32
Other health	0.12	0.12	0.12	0.12
Body	0.00	0.00	0.00	0.00
Feet & legs	0.08	0.15	0.06	0.09
Udder	0.09	0.18	0.13	0.32
Milking speed	0.08	0.08	0.06	0.06
Temperament	0.03	0.03	0.03	0.03
Longevity	0.11	0.11	0.08	0.08

Genetic trend for HOL



Overall aim of NTM

- High yielding cow
- Improved genetic level for functional traits – health & fertility
- Leads to improved longevity and economically enhanced dairy cows

Traits in NTM

- NTM is based on solid breeding values for the traits included
- Traits included are combinations of different sub traits
  - Yield
  - Fertility, longevity
  - Udder health, other diseases
  - Comformation traits, milkability
  - Calving traits
  - Growth

Fertility index

Table 5. Calculation of fertility index

HOL	$0.73*IFL_0+0.62*ICF_{1-3}+2.35*IFL_{1-3}+10.17*AIS_0+35.55*AIS_{1-3}$
RDC	$0.61*IFL_0+0.56*ICF_{1-3}+1.78*IFL_{1-3}+10.14*AIS_0+27.24*AIS_{1-3}$
JER	$0.93*IFL_0+0.28*ICF_{1-3}+1.61*IFL_{1-3}+9.27*AIS_0+27.14*AIS_{1-3}$

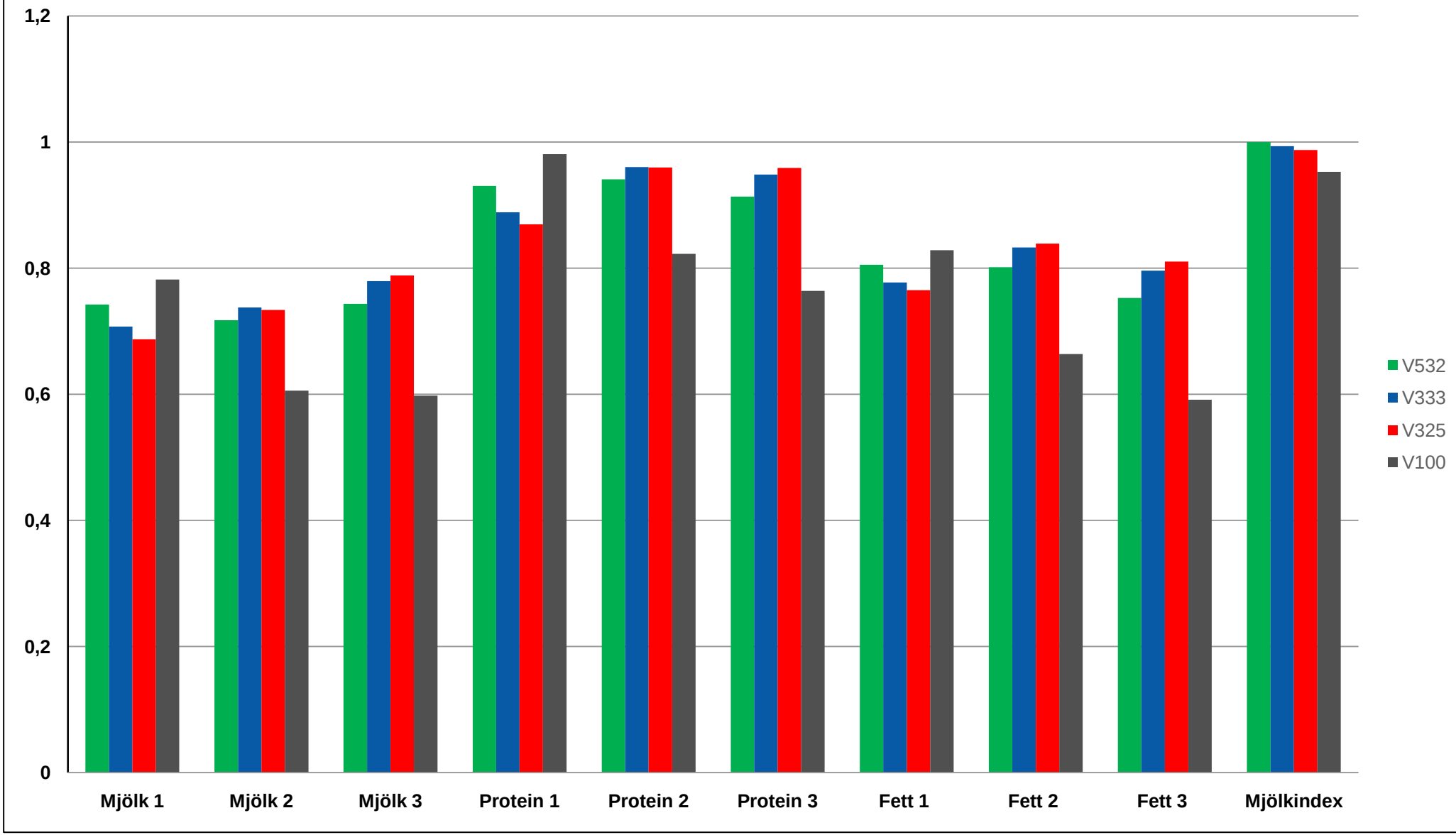
From common description of EBV's within NAV (To be found on the NAV homepage)

EBV´s are based on information from different lactations

- First lactation 50%
- Second lactation 30%
- Third lactation 20%

- Even when later lactation information is missing (through pedigree information and correlations to first lactation)

Korrelation mjölkindex och delegenskaper, SRB tjurar 1999-2003



Gain obtained using NTM

- Can be simulated
- Can be roughly expressed by correlations between EBV's (done here)

Be aware

- Correlations between indices are dependent on bull sample
  - Correlations can therefore change using different samples but same weight
  - Correlations give a rough estimate for the changes to be obtained

Correlation between NTM and other traits for HOL

Yield	0.61
Growth	0.09
Fertility	0.44
Birth index	0.31
Calving index	0.35
Udder health	0.45
Other diseases	0.49
Body	-0.04
Feet and legs	0.15
Mammary system	0.34
Milkability	0.11
Temperament	0.00
Longevity	0.71

Correlation between NTM and other traits for RDC

Yield	0.68
Growth	0.06
Fertility	0.16
Birth index	0.20
Calving index	0.22
Udder health	0.30
Other diseases	0.24
Body	0.06
Feet and legs	0.17
Mammary system	0.32
Milkability	0.21
Temperament	0.20
Longevity	0.60

Correlation between NTM and other traits for Jersey

Yield	0.75
Growth	-0.05
Fertility	0.22
Birth index	-0.02
Calving index	0.08
Udder health	0.43
Other diseases	0.30
Body	0.03
Feet and legs	0.25
Mammary system	0.25
Milkability	0.10
Temperament	0.22
Longevity	0.60

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Fulfilled!!