Joint Nordic Test Day Model: Experiences with the New Model

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Objectives of joint evaluation

- Better use of
  - Data
  - Resources
- Direct comparison of animals
  - Across borders

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Nordic Cattle Genetic Evaluation, NAV

- Joint evaluation since April 2005
  - Type traits
  - Female fertility
  - Milkability
  - Temperament
  - Leakage

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First joint evaluation for yield traits

- April 2006
- EBVs from joint evaluation compared to national proofs
  - Each animal gets the same NAV-EBV for the same biological trait in DNK, FIN and SWE

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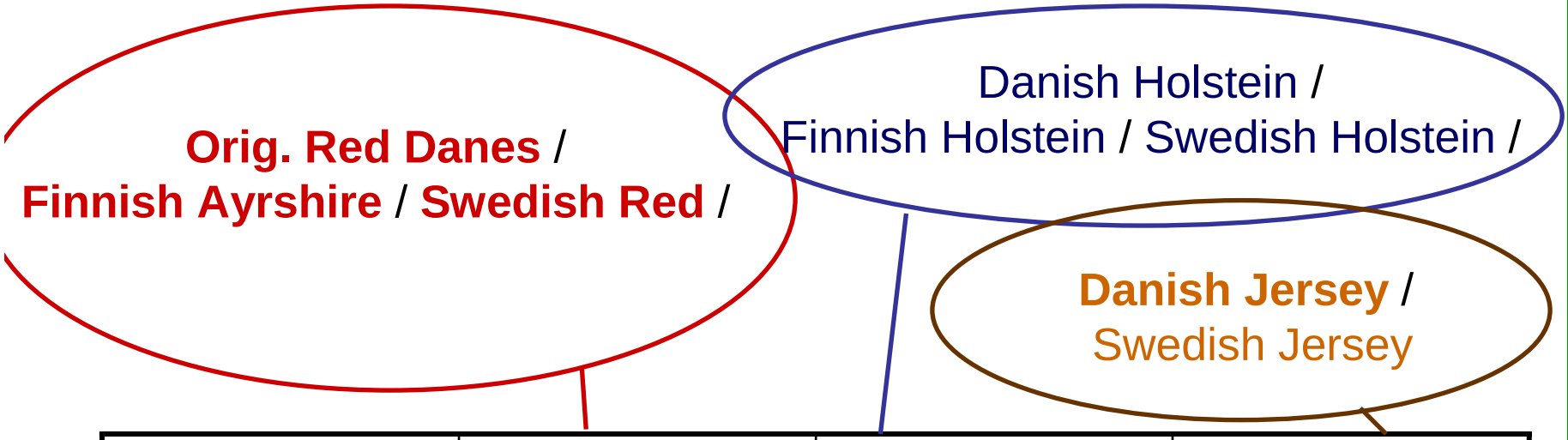
Data

All dairy cattle from Denmark, Finland, & Sweden



	Red Breeds	Holstein	Jersey
Animals	4.1 mil.	6.6 mil.	0.6 mil.
TD yields	45.6 mil.	81.6 mil.	7.2 mil.
305d yields	1.9 mil.	1.6 mil.	-

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Changes in data and models

- Additional data from neighboring countries
- Pedigree information combined
  - More accurate information from the originating country
  - Affects genetic groups etc.

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Changes: Denmark

- From single trait repeatability to multitrait multilactation model
- From 305d to TD data
- Exclusion of older data
- Different procedure for heterosis estimation
- Different procedure for HV correction

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Changes: Finland

- New: heterosis + recombination loss included in the model
- New: accounting for HV

Changes: Sweden

- From repeatability to multilactation model
- Exclusion of older data
- Different procedure for heterosis estimation
- Different procedure for HV correction

Publishing EBVs

- Relative EBVs
- Mean 100, SD 10 index points
  - Common base: cows from DNK, FIN, SWE
- 1st, 2nd and 3rd lactation EBVs combined
  - Weights: 0.5 : 0.3 : 0.2
- Common yield index: milk + protein + fat
  - Weights: -1 : 4 : 1

Correlations: NAV and national EBVs

- Sires: 0.95-0.99
  - More fluctuation in RDM (Orig. Red Dane)
- Cows: 0.90-0.95
  - Slightly lower for fat yield

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Considerable re-ranking

- Additional data:
  - Proven elite sires
  - Young bulls from mutual testing program
    - 153 Red breed, 21 Holstein bulls
- Sires:
  - Effects of heterosis and recombination loss
- Cows:
  - Simultaneous accounting for HV

Example: T Funkis

	DNK	FIN	SWE	NAV
milk kg	108	116	110	107
fat kg	107	121	112	108
protein kg	109	118	112	109
daughters	45411	1039	8134	54584

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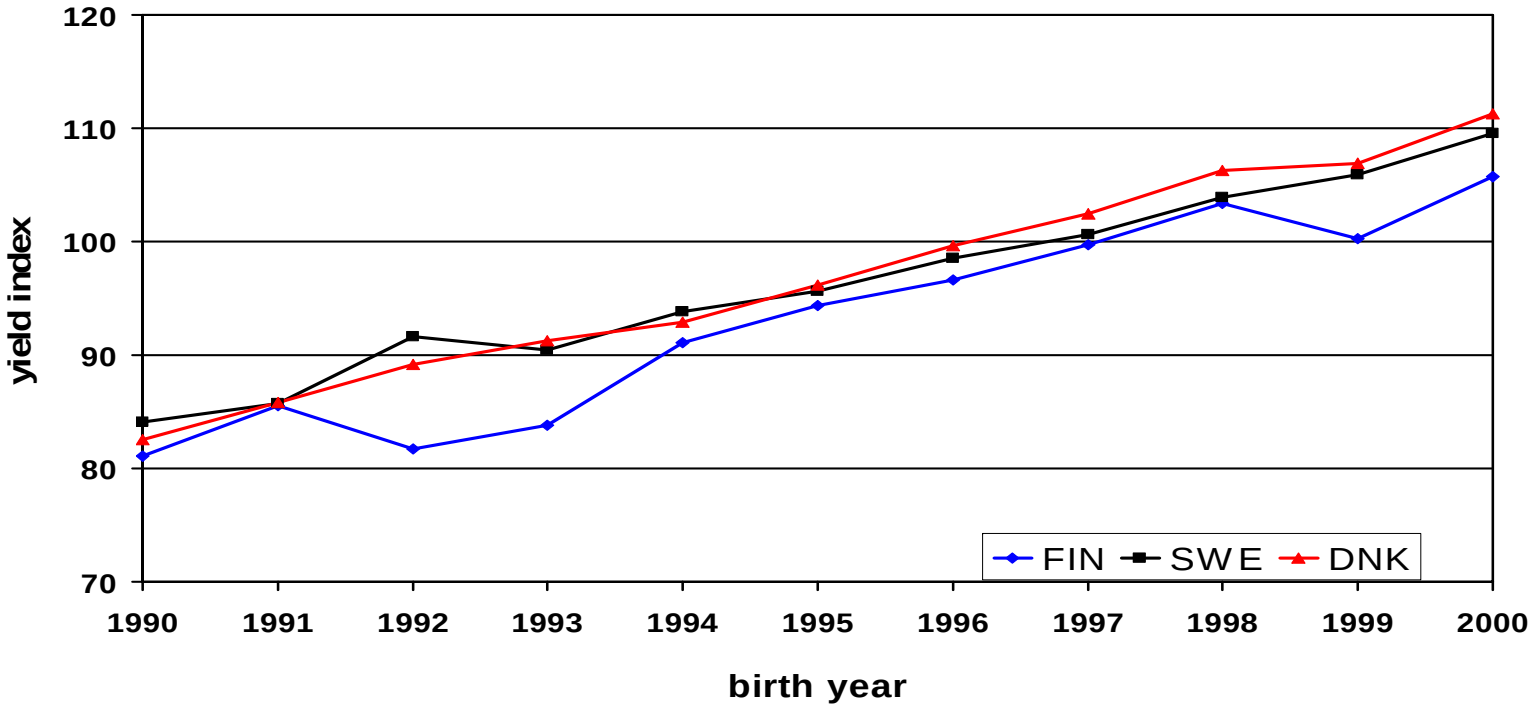
Genetic trend: HOL sires



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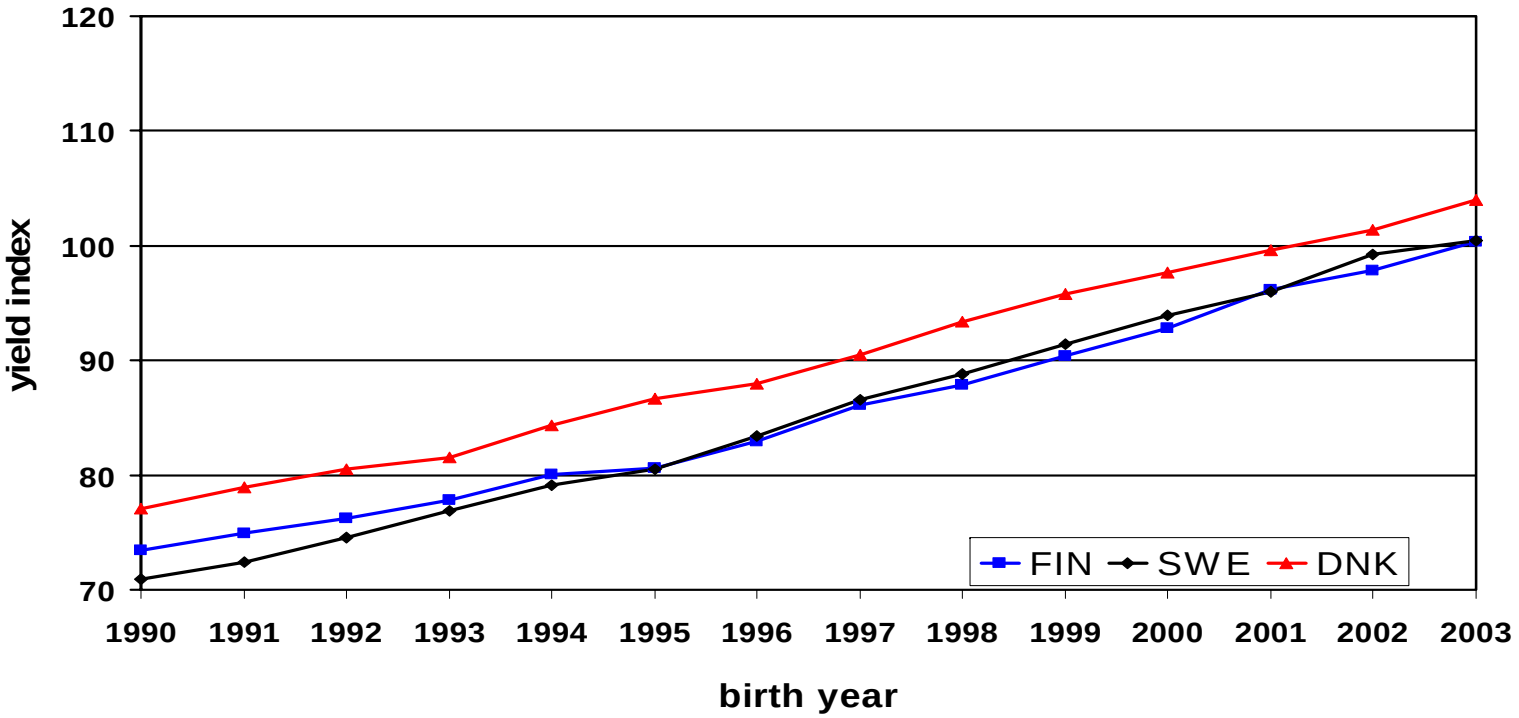
Genetic trend: HOL cows



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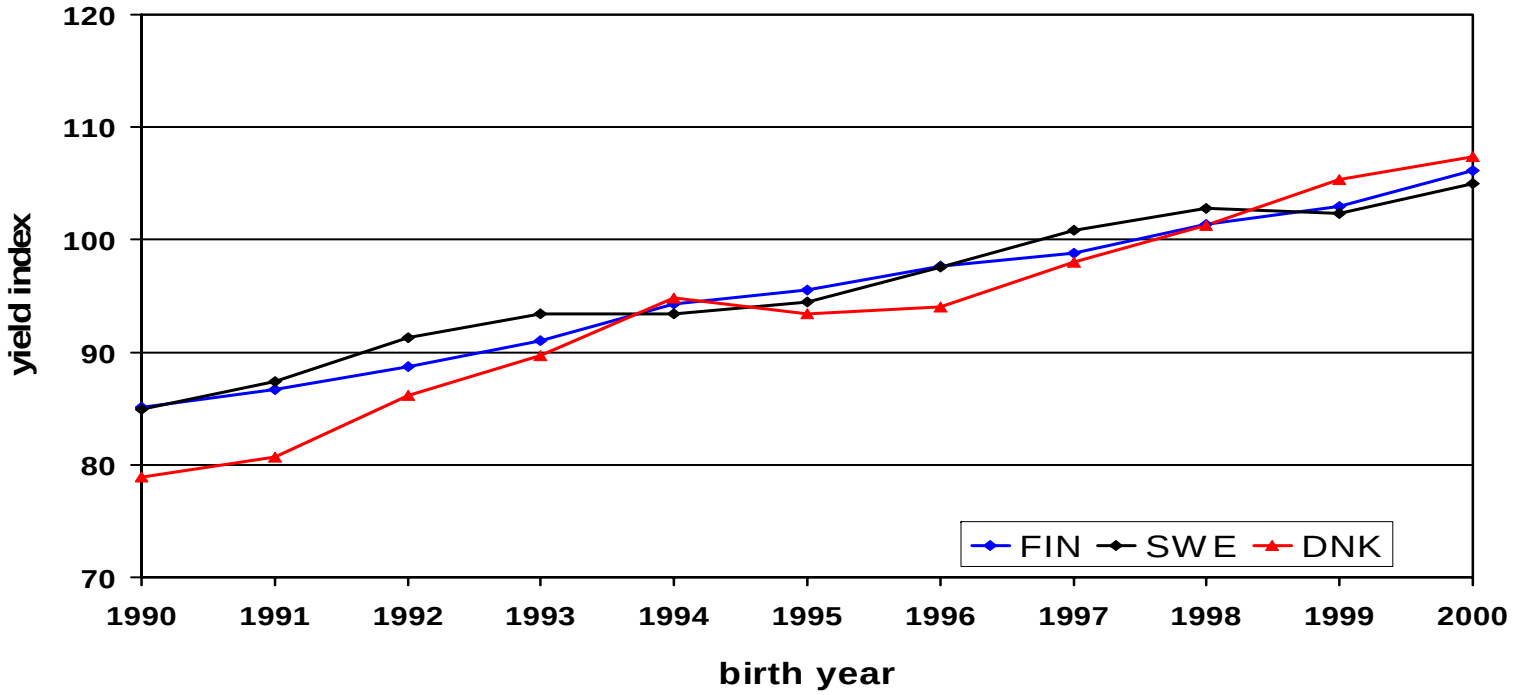
Genetic trend: Red breed sires



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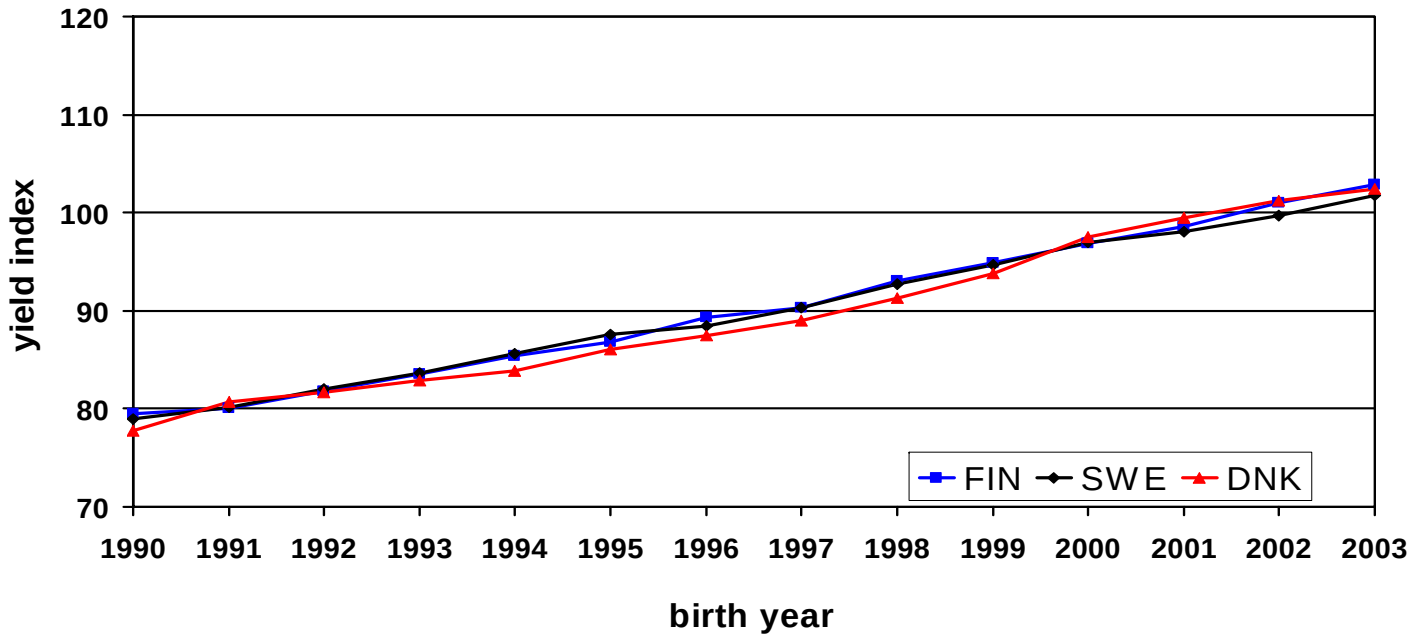
Genetic trend: Red breed cows



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Conclusions

- Routine evaluation in use
- Results as expected
- Well received by
  - Farmers
  - A.I. companies

- Under work: inclusion of SWE TD records

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