DNK: Traits and weighting in current national indices and suggestion for joint Nordic indices

Kevin Byskov/SEGES

1

Danish national beef evaluation

6 trait groups

- Fertility
  - Calving interval
- Survival after birth (Young stock survival)
  - Survival 200d (direct+maternal)
- Calving
  - Survival at birth, Calving ease, Birth weight (all 3 direct+maternal), Survival dairy crosses, Calving ease dairy crosses and Size dairy crosses

2

Danish national beef evaluation

6 trait groups

- Weight gain
  - Birth weight, Weight 200d, Weight 365d (all 3 direct+maternal), Net daily gain, Net daily gain dairy crosses, Test station daily gain (<2019)
- Carcass quality
  - EUROP-score, EUROP-score dairy crosses
- Conformation
  - Body, Muscle, Feet&legs

3

Combined indexes

- Weight gain, Direct (VÆKST)
  - Weight 365d, Net daily gain, Test station daily gain, Net daily gain dairy crosses
- Weight gain, Maternal (MÆLK)
  - Weight 365d, Net daily gain
- Carcass quality
  - EUROP-score

4

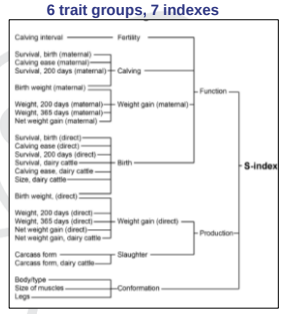
Combined indexes (continued)

- Calving traits, Direct
  - Survival at birth, Calving ease, Birth weight, Survival after birth
- Calving traits, Maternal
  - Survival at birth, Calving ease, Birth weight, Survival after birth
- Type traits
- Fertility

5

Danish national beef evaluation

6 trait groups, 7 indexes



6

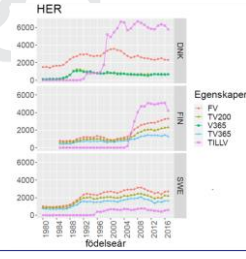
Selection within Danish herds

- S-indeks – for all animals
- No cows are pre-selected for production of slaughter calves
- Primarily stock bulls and limited use of sexed semen

8

Other differences

- DNK has many slaughter data available
  - But less data on live animals (~10%)
  - Evaluate maternal net daily gain
    - But data very late in life
- Generally smaller herds
  - Only (very) few 1st calving/herd/year
  - 1st and 2+ calving are treated as same genetic trait with different level (fixed effect)
  - NAV combines across HY in case of very small HY groups



9

Other differences

- Phantom Parent Groups
  - More groups in NAV due to stronger data
  - Expected positive effect on import bull index level
- Reliabilities
  - Calculated from selection index methods
  - New NAV method is better

NAV

Nordisk Avlsværdi Vurdering • Nordic Cattle Genetic Evaluation

10

DNK response to combined indices General considerations

- Important with enough flexibility to account for differences across countries
  - Don't combine different trait groups into e.g. indexes for Function and Production on NAV level

	FRGT	KLVN	MLK	FDS	VKST	SLGT	EKST
SIM	0,078	0,306	0,107	0,347	0,557	0,537	0,052
ANG	0	0,242	0,230	0,198	0,175	0,826	0,039
LIM	0,191	0,571	0,337	0,533	0,210	0,140	0,256

Production

NAV

Nordisk Avlsværdi Vurdering • Nordic Cattle Genetic Evaluation

11

DNK response to combined indices General considerations

- Calving traits (direct + maternal)
  - Include both 1st and later calvings
  - There might be most difficulties related to 1st calving, but there are most 2+ calvings

NAV

Nordisk Avlsværdi Vurdering • Nordic Cattle Genetic Evaluation

12

DNK response to combined indices General considerations

- Growth (direct)
  - SDG is what is paid for
  - Include trait measured on live animal too (200d and 365d), to encourage breeders to weigh animals
  - Also, SDG may be higher correlated to Mature weight
- Growth (maternal)
  - Concerned about lower reliability of Danish animals, as we do not utilize maternal SDG even if the information comes in late

NAV

Nordisk Avlsværdi Vurdering • Nordic Cattle Genetic Evaluation

13

14