

Maintenance, efficiency and beef production

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NAV



Nordisk Avlsværdi Vurdering •

Nordic Cattle Genetic Evaluation

STØTTET AF
Mælkeafgiftsfonden

Input and output

Feed requirement
for growth

Feed requirement
for maintenance

Feed requirement
for milk production

Actual feed
intake



Weight and
conformation
of the carcass

Milk production

Growth

- Only information on bull calves
- $EBV_{\text{Growth}} = EBV_{\text{NDG short}} + EBV_{\text{NDG long}} + EBV_{\text{Conformation}}$
- NDG short: Net daily gain up to 550 days
- NDG long: Net daily gain more than 550 days
- Carcass conformation score

NAV Fat score (indicator trait)



Factors affecting the value of growth

Revenues from
slaughtered
bull calves



Value of carcass
conformation score
in bull calves



Growth

Factors affecting the value of growth

Revenues from
slaughtered
bull calves



Value of carcass
conformation score
in bull calves



Growth

Revenues from
slaughtered cows

Value of carcass
conformation score
in cows

Consequence of including the two other factors in the derivation of the economic value for growth

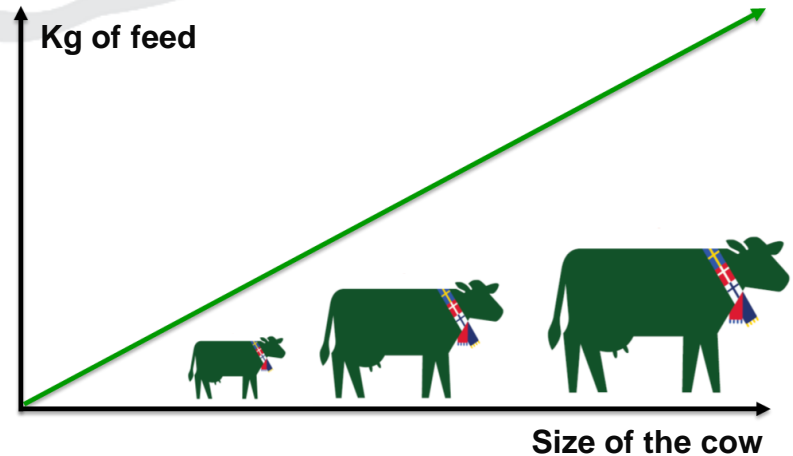
- Revenues from slaughtered cows
 - Improved carcass → Higher revenue → Higher economic value for growth
- Thus, we expect that the economic value for growth increases by including the factors for cows

Saved feed

- $EBV_{\text{Saved feed}} = EBV_{\text{Maintenance}} + EBV_{\text{Metabolic efficiency}}$
- **Maintenance:** data on weight of cows from practice
- **Metabolic efficiency:** data on feed intake from research herds and CFIT herds

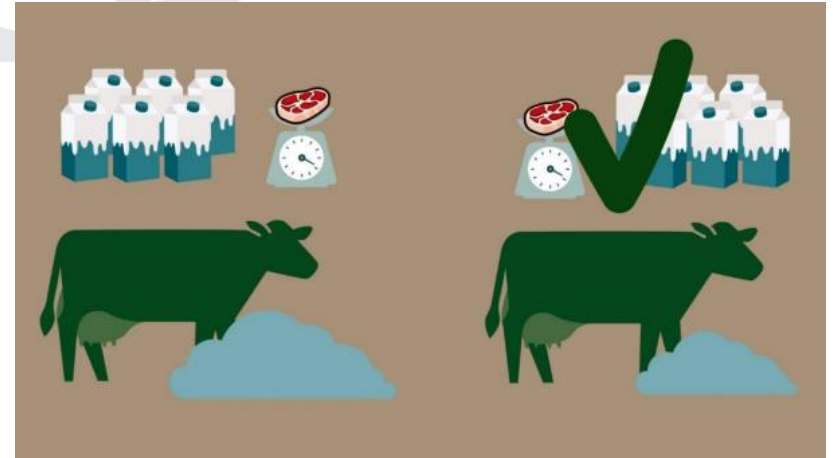
Maintenance

- Based on metabolic body weight (MBW = $BW^{0.75}$)
- Approximately 30% of the total energy requirement is needed for maintenance



Metabolic efficiency

- Same milk production and weight of cows
- The cow on the right eats less feed and is more efficient



Factors affecting the value of saved feed

Feed requirement for
maintenance from first
calving to slaughter 

Maintenance

Metabolic efficiency

Saved feed

Feed requirement for
milk production 


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Factors affecting the value of saved feed

Feed requirement for maintenance from first calving to slaughter 

Maintenance

Metabolic efficiency

Feed requirement for maintenance in the rearing period

Revenues from slaughtered cows

Saved feed

Feed requirement for milk production 

Feed requirement for growth in the rearing period

Consequence of including the other factors in the derivation of the economic value for saved feed

- Revenues from slaughtered cows
 - Lower carcass weight → Lower revenue → Lower economic value for saved feed
- Feed requirement for maintenance in the rearing period
 - Lower weight of heifers → Lower feed costs → Higher economic value for saved feed

Consequence of including the other factors in the derivation of the economic value for saved feed

- Feed requirement for growth in the rearing period
 - Less feed to achieve the same daily gain → Lower feed costs → Higher economic value for saved feed
- Thus, we expect that the economic value for saved feed increases slightly by including the other factors

Economic value for saved feed

	HOL	RDC	JER
Proposed in 2020	0.18	0.23	0.18
Decided in 2020	0.08	0.13	0.18

Topics to discuss at the group work

- Revenues from slaughtered cows are not included in growth and saved feed today
- Feed requirement for maintenance and growth in the rearing period are not included in saved feed today
- The decided economic value for saved feed is lower than the proposed in HOL and RDC