

# Maintenance, efficiency and beef production

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**NAV**



Nordisk Avlsværdi Vurdering •

Nordic Cattle Genetic Evaluation

# Input and output

Feed requirement  
for growth

Feed requirement  
for maintenance

Actual feed  
intake

Feed requirement  
for milk production



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

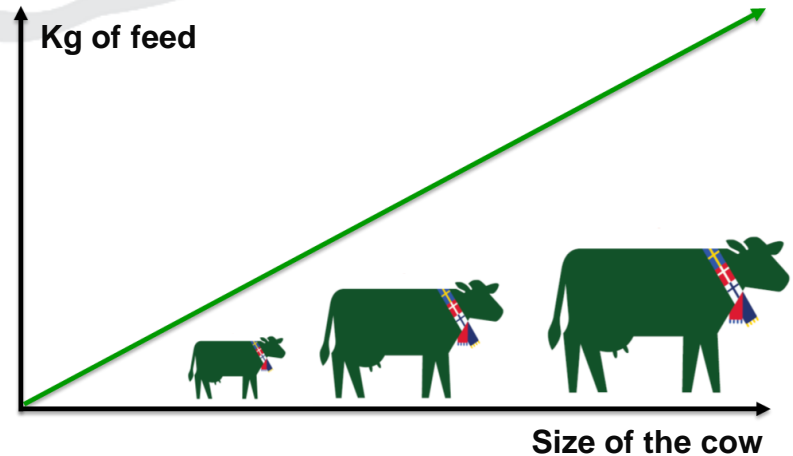
- Revenues from slaughtered cows
  - Improved carcass → Higher revenue → Higher economic value for growth
- Thus, we expect that the economic value for growth increases by including the factors for cows

# 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

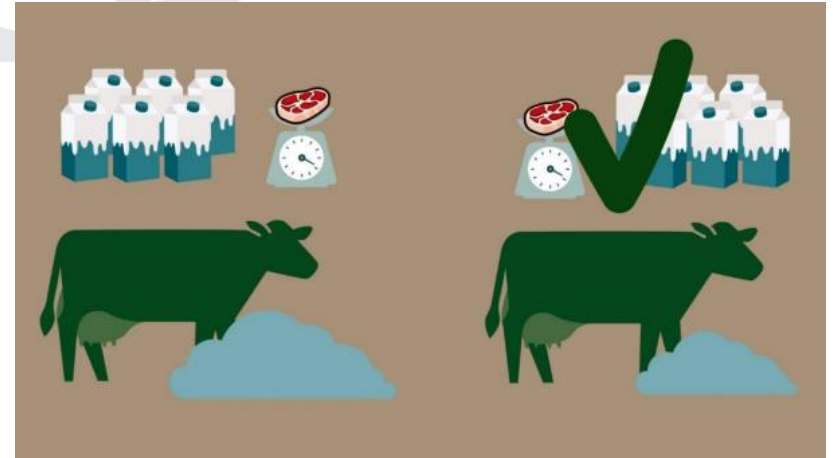
- Based on metabolic body weight (MBW =  $BW^{0.75}$ )
- Approximately 30% of the total energy requirement is needed for maintenance





# 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

# Introduction to a debate

- 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