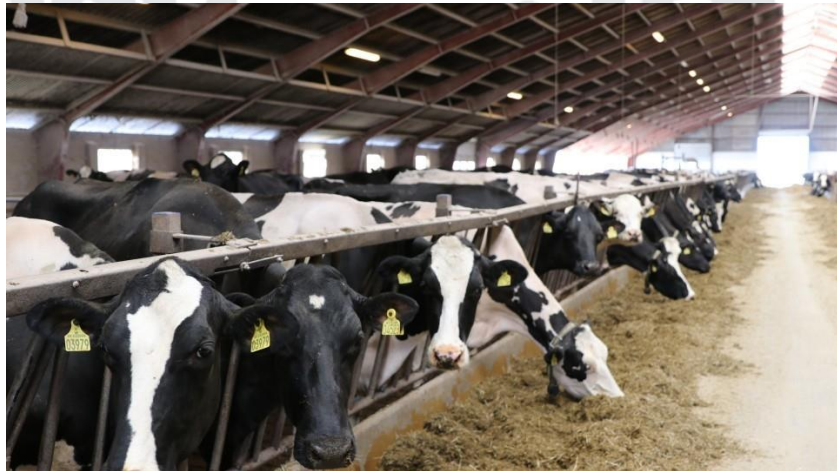




Saved feed – genetic evaluation – around in the world



Gert Pedersen Aamand, NAV
Rasmus Bak Stephansen, Seges
Jan Lassen, Viking Genetics

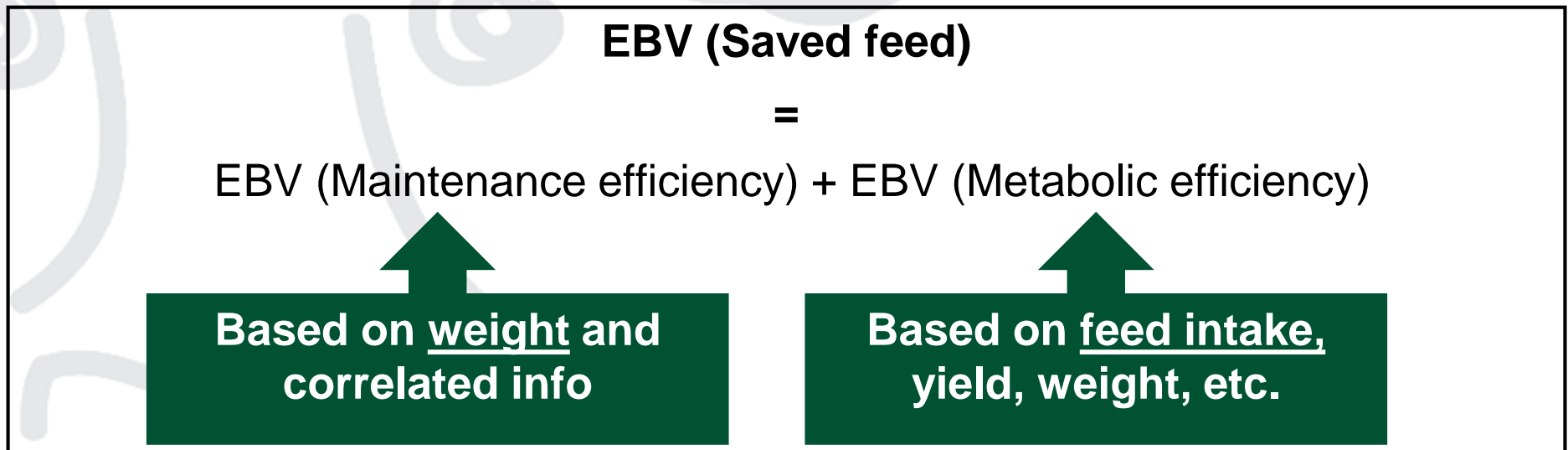
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Saved feed

- Maintenance efficiency (Aug '19)
- Metabolic efficiency (Nov '20)



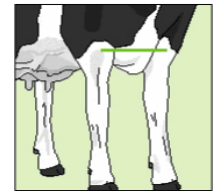
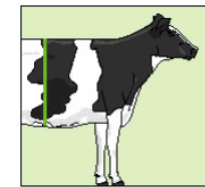
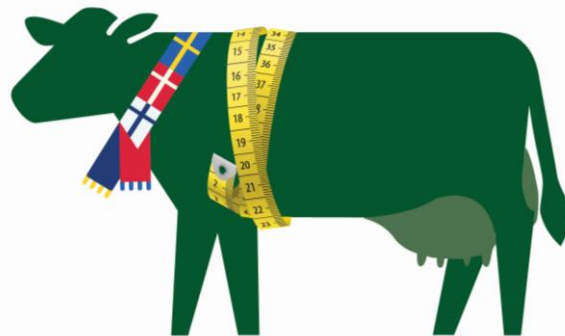
Weight data (maintenance eff.)

Core trait

- Weight from scales
- Tape measurements
- Weight predicted from pictures (CFIT)

Indicator traits

- Slaughter weight
- Stature
- Chest width
- Body depth



Feed intake data (metabolic eff.)

Core trait

- Complete lactations with feed intake data
- Most likely more than one lactation

Most reliable information include early lactation

Indicator traits

- Feed intake from parts of the lactation (eg. day 60-120)
- Feed intake only in 1st lactation
- Heifer feed intake

Less reliable – genetic correlation \ll 1.00

Registration of feed intake on cows



Feed intake	Same precision	
Daily herd management	Extra labor needed	No impact on labor
Type of dairy farms	"Research" dairy farms	Private farms
Costs per cow	Very high	High

What are other countries doing?









Looked at DEU, NLD, FRA, AUS, NOR, USA

- All countries focus on “Saved feed/feed efficiency”
- EBVs have different *names* but all based on maintenance eff. (weight) and metabolic efficiency (feed intake)
- General lack of core data *feed intake*, and *weight*
- Majority of countries have only research farm data - often historical data
- Only Nordic countries have feed intake data for Jersey and RDC

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What are other countries doing?

	Maintenance	Metabolic efficiency	Included in TMI
 Saved feed, NAV	✓	✓	Yes
 <i>EcoFeed, STgenetics</i>	✓	✓	-
 Feed Saved, USA CDCB	✓	✓	Expected Apr 2021
 Efficiency, CRV	✓	✓	Yes
 Australia	✓	✓	Yes
 France	✗	✗	-
 Germany	✗ 2021?	✗	-
 Norway	✗	✗	-

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Registration of feed intake on cows



Feed intake	Same precision	
Daily herd management	Extra labor needed	No impact on labor
Type of dairy farms	"Research" dairy farms	Dairy farms in practice
Costs per cow	Very high	High



NAV



Feed intake (metabolic eff.)

Core trait

- Complete lactations with feed intake data
- Most likely more than one lactation



Most reliable information include early lactation

Indicator traits










- Cow feed intake in part lactation eg day 50-200   
- Heifer feed intake 

Less reliable – genetic correlation $\ll 1.00$





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Number of cows with Nordic feed intake data

	Breed	Metabolic efficiency	Research farms	Private farms	New cows per year
  	Holstein	✓	3000	1500 end 2021	+600
  	<i>RDC</i>	✓	700	1500 end 2021	+600
  	Jersey	✓	0	1500 end 2021	+600

Holstein feed intake data details

	Metabolic efficiency	Research farms	Private farms	New cows per year
 Saved feed, NAV	✓	3000	1500 end 2021	+600
 <i>EcoFeed, STgenetics</i>	✓	4000-heifers		No cows
 Feed Saved, USA CDCB	✓	8000		+750
 Efficiency, CRV	✓	5000	2000	+600

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Summary

- **Feed efficiency is a hot topic worldwide**
- **Reliable GEBVs depends on large scale feed intake recording in production herds**
 - **Essential for genetic progress of Saved feed**
- **CFIT seems to be the best tool to get:**
 - **Feed intake data of good quality**
 - **Data from whole lactations**
 - **Data from private farms**

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