CRV, koploper
in gezondheid en efficiëntie

Feed intake recording on commercial farms for high reliable breeding values

Pieter van Goor, Genetics and Innovation CRV

CRV
BETTER COWS > BETTER LIFE

The importance of feed efficiency

Lower feed costs
The costs of the feed ration account for approx. 60% of all the variable costs involved in milk production. Breeding for feed efficiency saves on average 10% on feed costs.

A positive impact on the environment
By reducing greenhouse gas emissions and the use of scarce resources.

CRV
BETTER COWS > BETTER LIFE

LIFE WEIGHT AND FEED EFFICIENCY

- Over the past 30 years, our cows have grown about 4 cm and are 50 kg heavier. Trend still shows an increase in height size and weight. Average NL/VL adult cow weighs about 658 kg and are 150 cm height. ***Heavier cows need about 1,0 - 1.5 kg dm of feed per day extra per 100 kg of body weight.***

CRV
BETTER COWS > BETTER LIFE

Example Milk production and feed intake.

Cow	Kg .Milk* in 3 lact.	Life weight adult cow	Kg. dm. feedintake	feed efficiency	Profit per cow in euro's
A	30.140	660	26.898	1,13	5170
B	30.287	634	21.887	1,39	6223
C	30.802	650	20.143	1,54	6752
D	30.408	618	18.552	1,65	6932

Difference in DM intake

Cow D +34% more profit compared to A.

*Kg FPCM ** Milk price € 0,35 - Feed costs € 0,20 kg/dm

CRV
BETTER COWS > BETTER LIFE

When will it be succesfull?

- **Breeding values should have high reliabilities.**

- **Feed intake recording on a large scale**
  - Lactating cows
  - 1,2 and 3th lactation

- **Don't wait till you have solved all problems**

- **Don't wait till everybody will join.**

- **You have to invest a lot of money**

CRV
BETTER COWS > BETTER LIFE

COLLECTION OF FEED RECORDING DATA

5 Commercial farms

▪Aug. 2017		Alders, Overloon	200 cows	20 bins
Mar. 2019		Gastel, Nispen	150 cows	20 bins
Sept. 2019		Vroege, Dalen	1.200cows	84 bins
Nov. 2019		Duursma, Bellingw.	300 cows	46 bins
Dec. 2019		Meerkerk, Em Com	230 cows	30 bins

5 Research farms.

In total CRV is measuring 2.500 cows a year for feed intake.
In total now 10.000 cows with feed intake data.(dec 2022)

BETTER COWS > BETTER LIFE

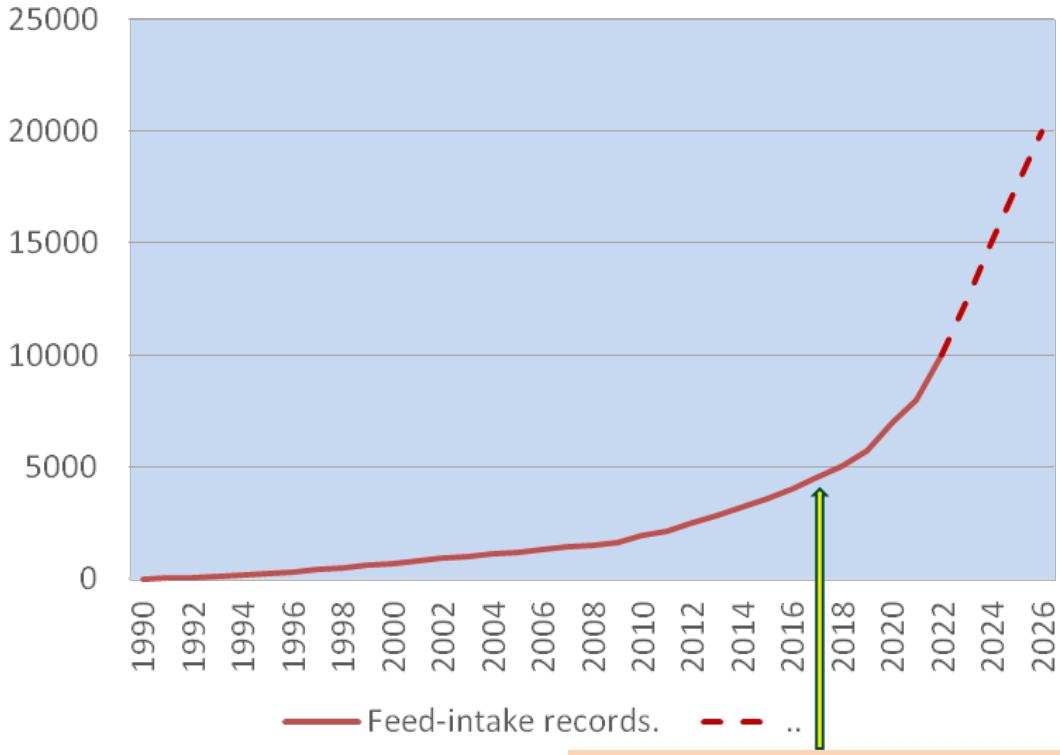
Different feedbins on different farms.

Data collection.

- Individual feed intake (roughage and concentrate) Control group Milk production 2-3 x daily (comp. via Milk rec) All cows Body weight (2 x daily) / Body condition score All cows
- Water intake Control group
- Health traits and claw health(DigiClaw) All cows Rumination/ laying & eating time All cows Fertility (Ovalert) All cows
- Measuring Methane emissions (3 farms)
- All farms using at least 80% young CRV bulls.

CRV
BETTER COWS > BETTER LIFE

Feedintake recording individual cows since 1990



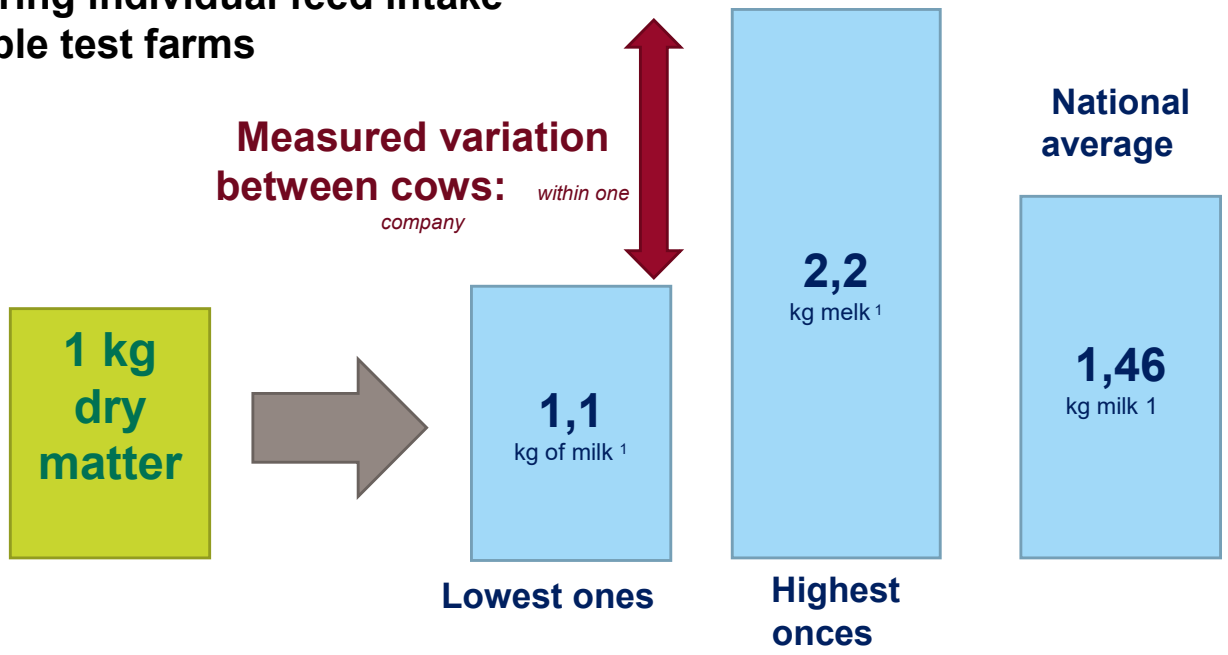
Start feed intake recording on commercial dairy farms

Feed efficiency

What did we find?

Feed efficiency = kg of milk produced[1] / kg of dry matter

Since 2017, CRV has been measuring individual feed intake of > 2,500 cows per year on multiple test farms

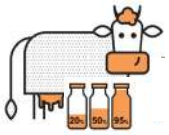


CRV
BETTER COWS > BETTER LIFE

1 kg milk = kg measuring milk with 4.00% fat and 3.30% protein

Feed efficiency

What do we see at the 5 commercial farms?



	Feed efficiency	Body weight	Milk1 production	Dry matter intake	Concentrates / kg milk1	Profit per day
25% best for FE	1,87	676 kg	42,2 kg	22,6 kg	220 gram	€ 10,24
25% least for FE	1,38	697 kg	32,5 kg	23,5 kg	270 gram	€ 6,86
Difference	0,5	- 21 kg	9,7 kg	- 0,9 kg	- 50 gr.	+ € 3,38

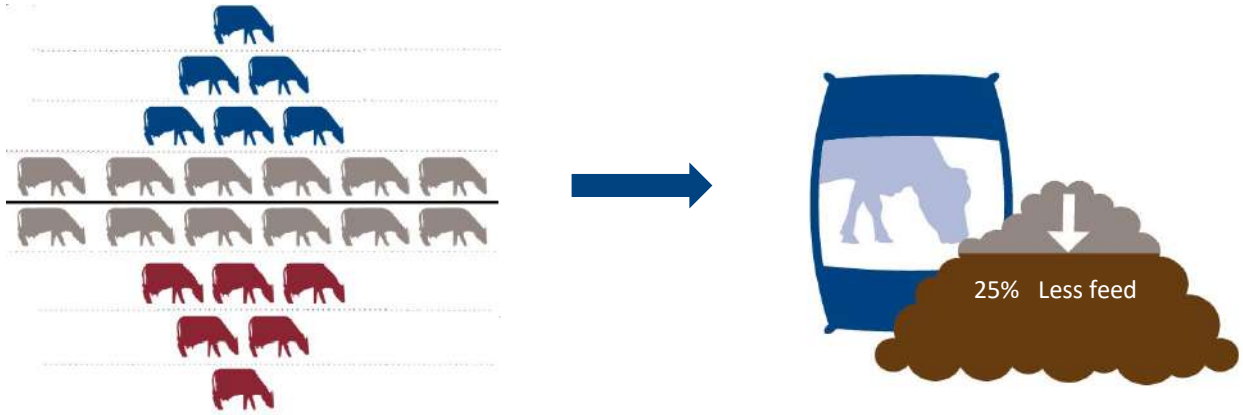
25% best cows: 49% more profit

CRV
BETTER COWS > BETTER LIFE

[1] kg melk = kg meetmelk met 4,00% vet en 3,30% eiwit

[2] Melkprijs € 0,35 Krachtvoer prijs € 0,27 Ruwvoer prijs € 0,15

The 25% best cows for feed efficiency in the herd need a quarter less feed for the same amount of FPCM milk as the 25 % lowest cows for feed efficiency. So less feed costs, less methane emissions and less manure.

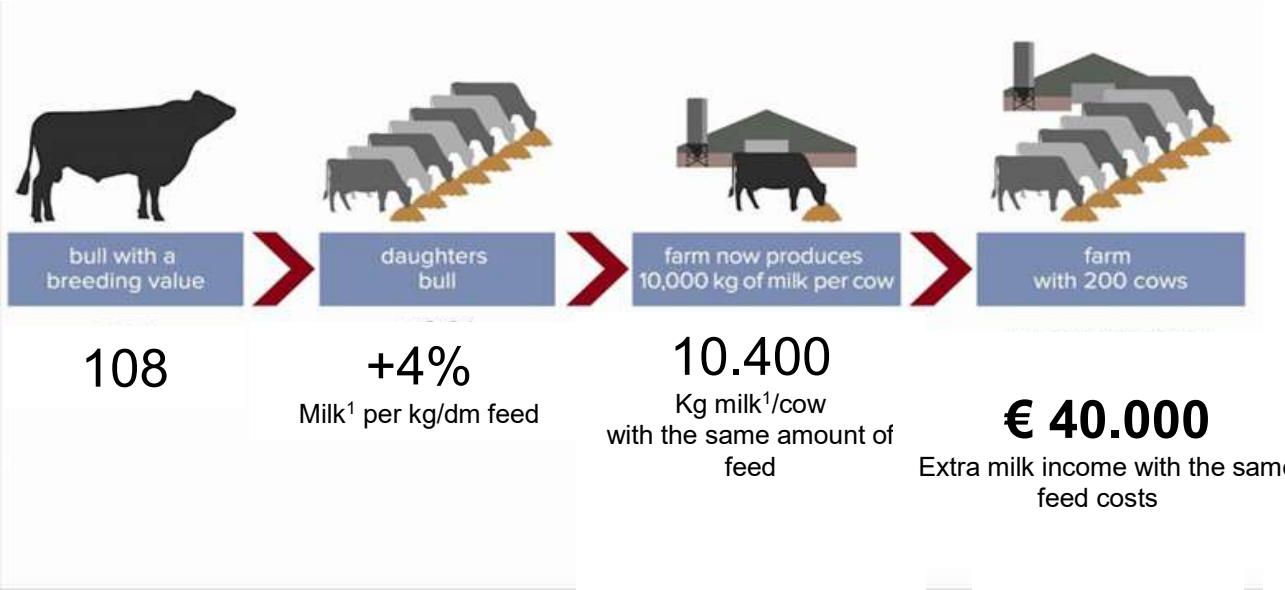


CRV
BETTER COWS > BETTER LIFE

Breeding value Feed efficiency

What can breeding mean in this?

A bull with a breeding value 108 Feed efficiency gives offspring with +400 kg of milk*



* with a production of 10,000 kg of milk1/year and the same ration

EITHER With the same production you save 15,600 euros feed costs (3)

AND IN DOING SO *4% less methane emissions per kg of milk*

CRV
BETTER COWS > BETTER LIFE

[1] kg milk = kg FPCM with 4,00% fat and 3,30% protein
[2] Milk price / kg FPCMilk 0,50 €
[3] Concentrates 0,38 €/kg, Raufase price 0,22 €/kg

Reliable Breeding values

Proven bulls:

Reliabilities breeding value from 65% to 85 %

Young Genomic bulls:

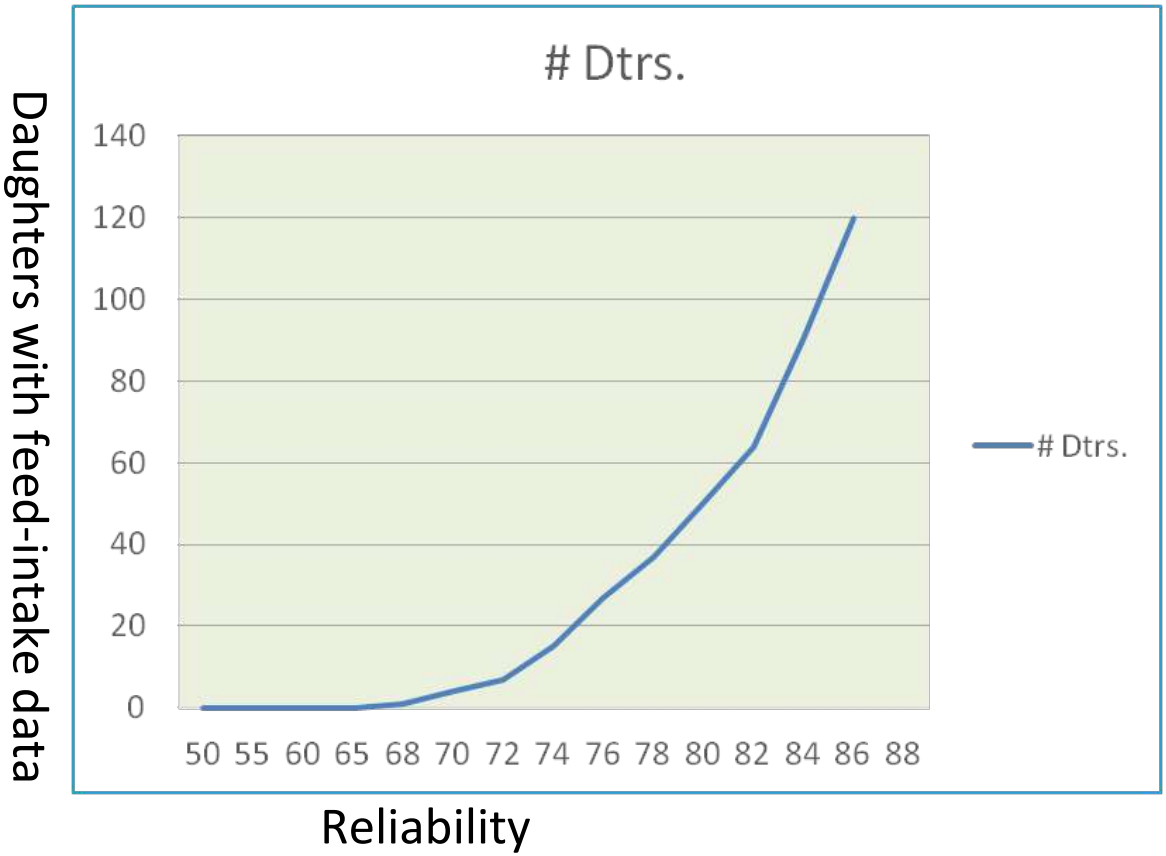
Reliabilities from 50% tot 54 %

CRV
BETTER COWS > BETTER LIFE

Proven bulls with numbers of daughters with feed intake data December 22.

Bull	Daughters with feed intake data	% Rel. BV FE	BV FE
Esperanto	73	80	110
Lendor	69	75	106
Final	64	82	103
Danno	146	85	102
Ranger	99	77	102
Finder	31	79	102
Jupiler	164	82	102
Magister	141	82	101
Atlantic	122	87	97
Rocky	52	80	95

Quantity of offspring and % reliability BV feedefficiency



18 Bulls with ≥ 106 BV Feed Efficiency available..dec.22

NVI	Fertility	udder health	Claw health	Longevity	Methane Eff.
327	104	105	105	604	106
Kg Milk	% Fat	% Protein	Calving ease	Ketosis	Feed efficiency
1461	,14	,14	102	106	107

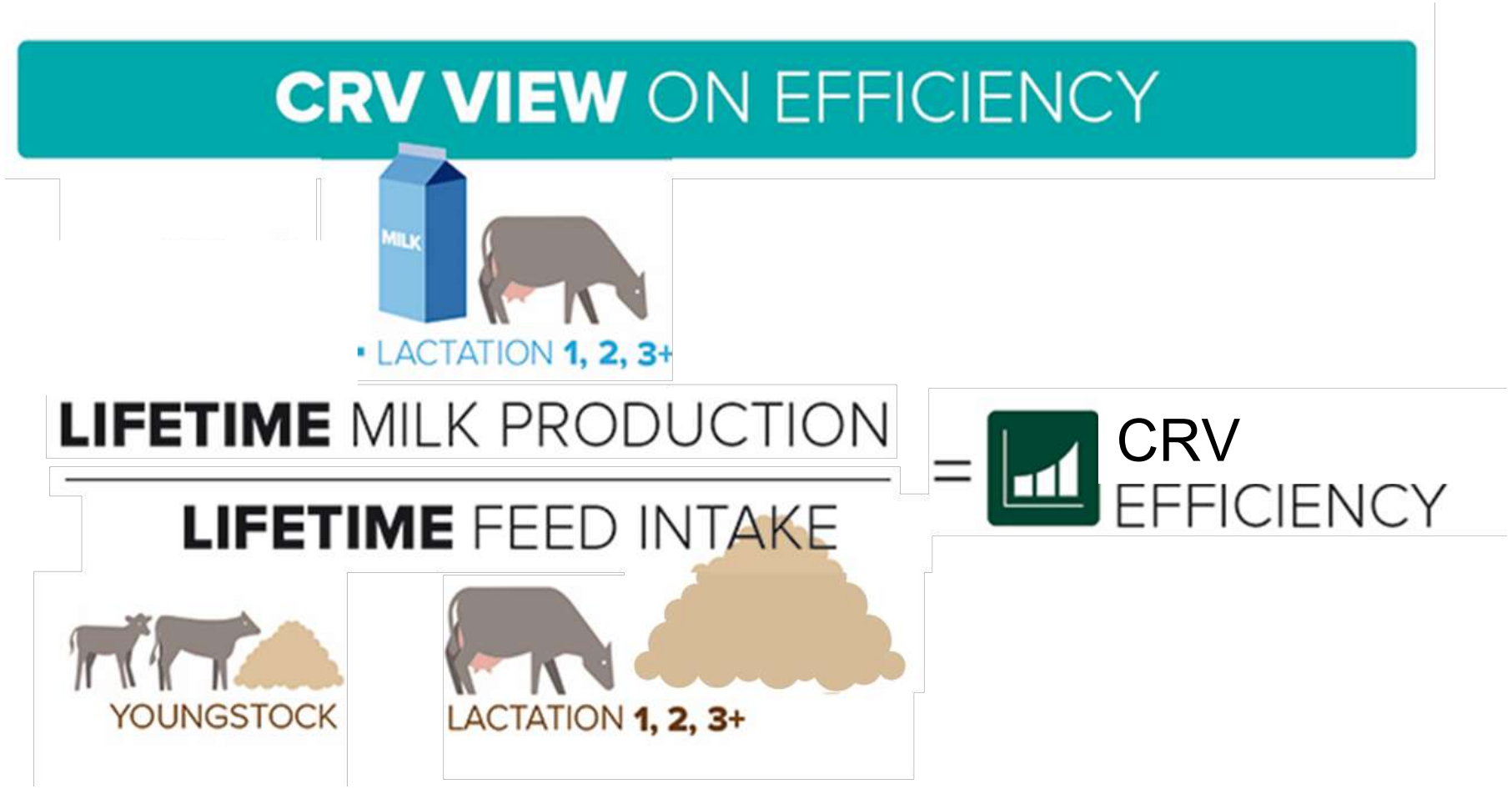
D. Endless RF

D.Flagstone

Thank you

BETTER COWS > BETTER LIFE

Selection on lifetime efficiency



CRV

BETTER COWS > BETTER LIFE