

Breeding indexes and genetic selection to improve the characteristics of the dairy herd

Topic
Economic resilience



Topic
Animal welfare



Background
Breeding indexes can help to make better breeding decisions i.e. selection of the cows and bulls to be parents of the next generation. Breeding decisions have a long term effect on the future of the dairy farm as the effect of breeding is permanent and cumulative. Breeding is one of the main ways to influence the sustainability of cattle farming.

How does the strategy work?

Know your cows and select!

- Keep records of breed, age, calving's, diseases/treatments, pedigree of the cows
- Keep regularly records of milk yield and milk composition (protein, fat)
- Use breeding indexes of different traits and total breeding index to select lower merit cows to be inseminated with sexed semen to get bull calves or with beef semen
- Use genomic testing of calves to be able to select best calves for renewing the herd.

Select bulls!

- Find out the breeding indexes of the bulls available
- Select the right bull for each cow according what traits should be improved in your herd
- Use artificial insemination, embryo transfer etc.

Positive features

- A genetically superior cow produces more, has lower costs because it is healthier, more fertile, more robust and has a better feed efficiency than its genetically inferior counterpart.
- Improving feed efficiency is important because feed costs are one of the biggest costs in milk production.
- Improving feed efficiency through animal breeding is one of the most important methods to reduce greenhouse gas emissions from dairy production.

More info: videos

[Breeding value Nordic total merit \(NTM\)](#)

[Use genomic testing in your herd](#)

Breeding index

In the Nordic countries, dairy cows are selected for

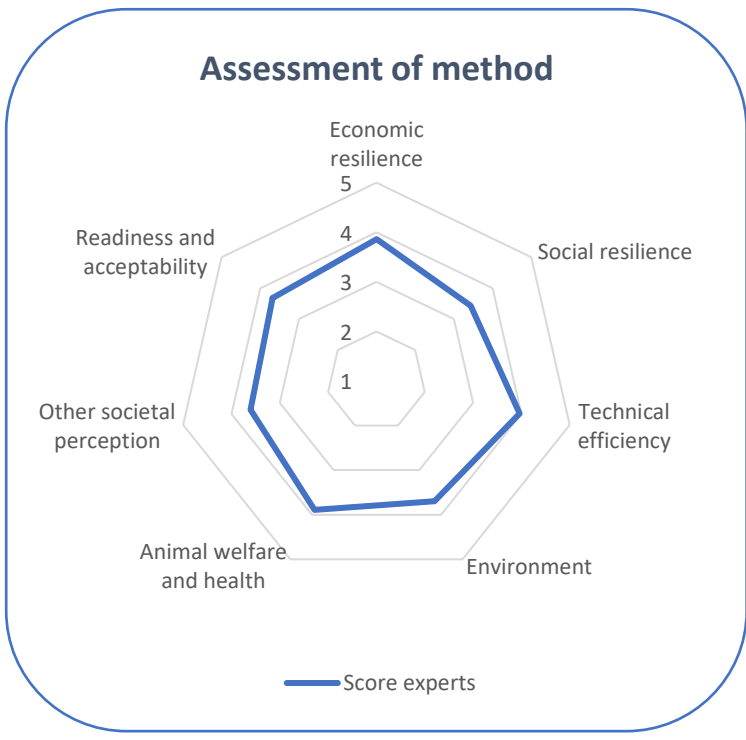
- milk, fat and protein yields
- growth
- fertility
- calving ease
- udder health
- general health
- hoof health
- leg structure
- udder structure
- milkability
- temperament
- durability
- calf vigour
- feed efficiency

For each animal is calculated:

Breeding value of each of these traits

In the combined breeding index NTM each trait is weighted according to its economic value

The combined breeding index NTM (Nordic Total Merit index) balances breeding of production and health.



Quote of the farmer:
“Breeding indexes make it easier for me to make breeding choices, as I don't have to compare all the traits, but only need to focus on comparing the indexes.”

