Topic	Topic
Technical efficiency	Economic resilience

Picking sires to suit specific traits of dairy cows on farm

Background

A dairy farmer must take into account numerous genetic and environmental factors when selecting sires. These factors include the breeding objective, genetic level of the herd, genetic information on individual animals, relatedness, technological circumstances, input and market prices. The decision on mating pairs has a long-term impact on the herd.

How does the strategy work?

Breeding organisations calculate country selection indices, in which the traits and their respective weights reflect market demand and are based on the economic data (profitability) of these traits. However, individual farming situations may vary.

Farmers need to identify the specific traits or characteristics (breeding objectives) they want to improve, and these objectives should align with the farm's production system and market demands. **Evaluating the potential return on investment based on the improvement in traits that align with the farmer's breeding goals is the key factor.**

Periodically review your breeding objectives and the performance of your herd. Adjust your sire selection strategy as necessary to ensure you're making progress toward your goals. Remember that genetic improvement is a long-term endeavour. It may take several generations to achieve your desired traits fully. **Stay committed to your breeding plan and objectives.**

In the present day, our selection criteria encompass various factors, including milk quantity and quality traits, kappa and beta casein genotypes, reproduction traits (such as calving interval and daughter fertility), longevity, health traits (like udder and feet health), management traits (such as milking speed and calving ease), and conformation traits. In the future, we may also incorporate considerations like feed efficiency, methane emission, heat tolerance, immunity, reproductive efficiency, reduced water usage, temperament, stress response, and adaptability to robotic milking into our selection process.

Software tools are available for calculating customized indices using farm economic data. To utilize these tools effectively, farmers should retain comprehensive data on the individual performance of animals and economic parameters. This information can be used to rank available sires according to the customized index.

Over the past decade, genomic (SNP) information has become available for both males and females. This information is not only used for evaluating breeding values but also includes data on genetic defects when pairing males with females. Consulting with geneticists or veterinarians can offer valuable insights into genetic defect management. They can assist in assessing the risks associated with specific mating choices and offer guidance on selecting mates.

Using customized farm criteria (indices), software programs provide a selection of bulls for mating with a female. This selection includes pedigree and genomic information, and the software employs built-in linear programming tools to optimize both the level of inbreeding and the genetic (economic) gain for the farm. It also allows for the specification of the number of females assigned to each bull. Genetic lines may perform better under specific conditions, so choose animals that thrive in your climate and production system.

Equipment involved? Investment?

You may be required to pay a separate service or consultation fee, or it may be included as part of the AI/breeding organisation service.

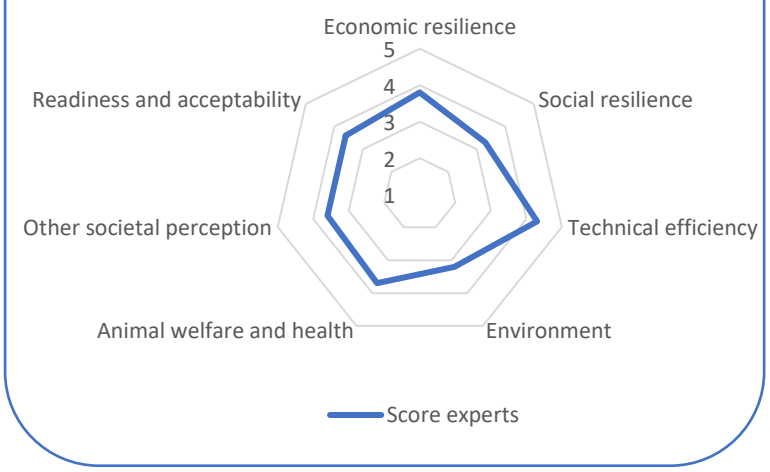
Positive features

- Mate allocation software is available from AI services or breeding organisations, which makes the selection and mate allocation process more time-efficient and takes into consideration multiple perspectives simultaneously.

Be careful, especially on these points

- Genetic defects
- Objective farm and market economic information
- Long-term planning

Assessment of method



Quote of the farmer:

"Irrespective of the advisors and softwares available, I decide…"

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