

Report: Red breed association meeting and ReDiverse workshop

Stockholm 13th-14th November

Representatives of the ReDiverse Consortium were invited by the Red breed association to discuss the future of Red breeds with members of the Viking Red board coming from Finland, Sweden, Denmark, Estonia, Lithuania, Germany. This opportunity was further used to organize a workshop of the ReDiverse project especially to demonstrate and discuss ideas about breeding goals for red breeds.



REDIVERSE - Expected outcomes

- > Sustainable management of genetic diversity provided by European Red Dairy Breeds
- > Formation of joint breeding programs
- > Shared genomic resources → development of genome based conservation strategies
- > Enhancement of collaboration across countries

Ultimately: promotion of European Red Dairy Breeds by improved breeding while preserving their unique characteristics

The meeting was opened by Maria Eriksson from the Swedish Red Association who also arranged the event in a pretty perfect manner. After the welcome and introduction of participants Freddy Fixe from VäxaSverige presented the current state of breeding evaluations for feed efficiency. He pronounced first the need to include this important cost-related trait in the breeding goal but also pointed towards the difficulties in recording the trait and to achieve a sufficiently large reference population. Efficiency might have different meanings e.g. considering output in milk relative to input in feed or relative to output of methane or nitrogen. Another issue is the scale for which an improvement is envisaged which could be the cow, the farm, a country or the world. To start with he suggested a feed saved index as a combination of estimated breeding values for maintenance and feed intake. In lack of direct feed intake measurements by scale indicator traits like body weights measured by tapes could be useful to enhance reliabilities. He ended his presentation with an outlook for future efficiency traits encompassing roughage efficiency, product relative to non-human edible feed and phosphorous efficiency. A lively discussion and sharing of ideas how current work can be extended to red breeds demonstrated the importance of resource saving breeding strategies.



After lunch a group discussion was launched and led by Gustav Jahn addressing the question 'What direction should the red cow go in?'. Jahn asked the representatives to share ideas about the vision of a Red Cow 2030. Beforehand he gave a quick overview in which part of Europe and the world red cows present a substantial proportion of the dairy populations and what the reasons might be. A very first summary was that red cows should demonstrate their uniqueness predominantly in functional characters and are well adapted to the environment which could be a major advantage for the challenge of climate change. Nevertheless it was strongly emphasized that red cows are not only a niche breed but have the general ability to well stay the competition with the dominating Holstein breed. To get an impression about the important characteristics some questions were raised to the audience with respect to different kind of utilization, e.g. dairy type, dual purpose and robustness. In smaller groups arguments were exchanged and it was heavily discussed (1) which biological traits are most relevant, (2) in what production environment, and, (3) under which economic circumstances the three different breeding goals are appropriate. The groups then presented their results an overall sight evolved. A general agreement was that the red cow is profitable and competitive in most productions systems. Specific properties like high labor efficiency, lower mortality, less need of antibiotics and milk composition make red cows unique and advantageous to farmers and consumers. These attributes should be properly labelled like 'ethical', 'green' or 'premium'. Benchmarking in marketing should be against the Holsteins with a high self-confidence. The last issue of this part was on how to put these criteria in scene and who is the driver of promoting the red cow. Next to the major player in Europe the eyes should be widened to countries with larger red cow populations e.g. Australia, South America, the US but also Kenia and Russia. Hereby the red genes can also optimize farmers benefit by crossbreeding.



At the second day a ReDiverse workshop took place together also attended by the Viking Red committee and partners from Geno. Christine Schmidtman (picture) presented background, methodology and results for economic values of various red breeds emphasizing the specific importance of production conditions as well as price/cost ratios. The chosen approach accounts for the structural herd effect and avoids double counting. An intensive discussion of the breeding goal encompassing the vision of the red cow as worked on the day before was extremely helpful for further progress of ReDiverse.

Valuable contributions from all of the representatives with respect to next steps in breeding goal and breeding programmes were:

- Harmonization of trait recording. As many traits as possible should be recorded in the same way for different Red breeds across countries. Emphasis should be put on a common breeding evaluation (similar to EuroGenomics in Holstein). In order to enforce this, tools have to be developed, which can be used across the different breeding organizations.
- Instead of implementing different breeding lines, selection for different breeding goals (selection within different clusters) within the same scheme within a common breeding scheme for Red cattle breeds will be preferred.
- No clusters on a geographical map, but in cluster depending on management systems wishes for improving products demanded by farmers and/or the society.
- Since robustness should be an important property of all Red cows, a separate 'robustness-cluster' is not needed. In general, Red cows have to be robust.
- It would be beneficial to have a larger variety of bulls available being able to serve different production systems.
- Thinking about the naming of the different clusters, no stereotypes.
- Branding of Red cattle breeds. ScanTic Red the "The green cow"/ One Nordic green profile: Focusing on a climate friendly cow, which is efficient (e.g., regarding utilization of feed), avoidance of treatment with antibiotics in the future, use of "regional" protein sources (no soy).
- Clear differentiation of Red cows to other breeds (Holstein, Jersey) → Exposure and promotion of unique characteristics provided by Red cows; highlighting the uniqueness of Red cattle breeds.
- Taking into account the preservation of genetic diversity provided by Red cattle breeds across Europe to maintain the capacity to react to unforeseen changes in the future (climate, production circumstances, political regulations).
- Common female reference population for that, trait recording needs to be harmonized; farmers must be convinced that there are advantages when testing more females in their herd (this should be shown by simulations; investigation of a common Nordic Red cow reference population).
- Robot milking will be important in the future, therefore cows should be adapted to automatic milking systems.
- There will be a higher focus on milk ingredients instead of milk volume in the future more emphasis on fat and protein.

The two day fruitful event was extremely successful not only in bringing red breeds together but also to bring together farmers and representatives from breeding organizations with scientists. All participants honored the clear statements, the concise conclusions and the future –oriented character of the meeting.

