Breeding resilient ruminants for a changing climate

SHORT SUMMARY FOR PRACTITIONERS:

Climate change is already affecting dairy and other ruminant farms through heat stress, health problems and pressure on feed and resources.

RUMIGEN brought together breeding, genomics, epigenetics, farm data and societal dialogue to support more resilient and sustainable ruminant breeding. The project showed that heat stress can reduce performance and affect traits linked to health and fertility. It also developed knowledge and tools to help breeding organisations better consider heat tolerance, udder health, fertility, genetic diversity and long-term resilience in breeding goals.

For farmers and breeders, the practical message is clear: climate resilience should not be treated as a separate issue from productivity, animal welfare or diversity. Selection decisions should use the best available performance, pedigree, genomic, weather and, where relevant, epigenetic information, while avoiding excessive loss of genetic diversity, especially in local breeds.

In practice, farmers should discuss with breeding advisers and breed societies how resilience-related traits are included in breeding choices, continue recording health, fertility and performance data, and support transparent dialogue on new breeding tools. This can help farms prepare for warmer conditions, maintain robust animals, reduce future losses, and build breeding strategies that are both technically useful and socially acceptable.

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