

News

Better conservation of genetic diversity in livestock breeds using genomic information

February 22, 2018

On Friday February 23rd 2018, Sonia Eynard will defend her PhD thesis, entitled "Using genomic information to conserve genetic diversity in livestock", at Wageningen University.

This is a joint thesis between AgroParisTech in France and Wageningen University in the Netherlands, within the framework of the Erasmus Mundus Joint Doctorate Program Animal Breeding and Genetics (EGS-ABG), and in collaboration with the Centre for Genetic Resources, the Netherlands (CGN).

Strong artificial selection reduces genetic diversity in livestock, while maintaining genetic diversity is key to safeguard future selection response. In her thesis, Sonia shows how the use of genomic information, especially whole genome sequence data, and methods like Optimal Contribution selection can be combined to help conserving genetic diversity in selected populations.

Whole genome sequence data provides access to rare alleles, but was until recently hardly available and use of this information in conservation has been very limited so far. Sonia showed by studying whole genome sequence data that selection can lead to considerable losses in terms of rare

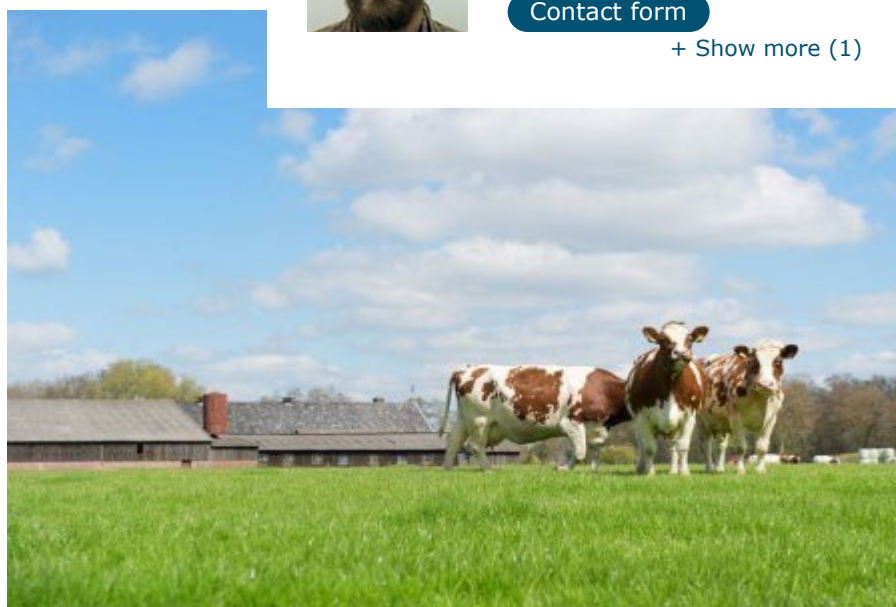


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alleles, while using this type of data in optimal contribution selection enables to mitigate those losses. Using optimal contributions for updating reference populations in genomic selection schemes may also help to restrict the loss of genetic diversity in practical breeding programs. Finally, it was shown that optimal contribution selection relying on genomic information, enables to take advantage of gene bank material to simultaneously increase genetic gain and improve conservation of genetic diversity in live populations of small breeds.

Links

- [Thesis: Using genomic information to conserve genetic diversity in livestock](#)
- [EGS-ABG : European Graduate School in Animal Breeding and Genetics](#)
- [Wageningen University & Research, Animal Breeding & Genomics](#)

Read more



Using genomic information to conserve genetic diversity in livestock SE (Sonia) Eynard



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