

Editorial

In this volume, three articles extract and examine scientific information that has been gathered over a long time, either in a coordinated way or in different studies. This kind of meta-analysis is important in two ways. Firstly, results are extracted, pooled, and analysed statistically to find major trends or limitations. Secondly, the authors use literature written in Icelandic and report the main findings in English, which gives international researchers access to research that has been carried out over the years. This is in line with one of the aims of IAS, which is to provide a platform where Icelandic research is made known and accessible to the international research community.

The first article, by Jón H. Eiríksson and Ágúst Sigurdsson, uses data collected by the Farmers Association in Iceland on lambs born in 2000 to 2013 to analyse the effect of certain probable sources of bias in genetic evaluation for carcass traits in Icelandic sheep and to estimate the possible benefit of including ultrasound measurements in the genetic analysis. The authors conclude that large genetic improvements have been made in the Icelandic sheep population in a relatively short time and also that the selection has reduced unfavourable genetic correlations.

The second article, by Hrannar Smári Hilmarsson et al., reviews results from barley cultivar trials in Iceland from 40 locations over a 28-year period and compares Icelandic and foreign cultivars. They demonstrated that the days of sowing, heading and harvesting have been moving to earlier dates and that the duration from sowing to maturity has also shortened. At the same time the yield has increased. This is highly interesting for both growers and breeders of new genotypes. The authors also publish a short communication on the effect of soil type on barley yields of different cultivars used in Iceland.

The third article, by Bryndís Marteinsdóttir et al., assesses the ecological impacts of sheep grazing in Iceland. This is a debated issue locally and the authors surveyed a large amount of literature for their analysis. They compiled 347 documents of which, however, only 44 contained extractable numerical data. The lack of comprehensive studies prevented them from drawing firm conclusions for most ecological variables. What could be seen was that the extent of bare ground was higher in grazed areas and the structure of the plant communities changed with grazing. It is particularly interesting to see how many gaps there are in solid scientific knowledge on the effect of sheep grazing in Iceland, a country with such a long-standing tradition of sheep farming.

In this volume we also have an article on a new native vascular plant species in Iceland, *Arabidopsis thaliana*, which was discovered in 2015. A genetic analysis showed closest relation to Scandinavian populations. However, the Icelandic plants did not originate directly from any of the populations represented in the global collection of the 1001 Genomes accessions of *A. thaliana*.

Two short communications in the present volume deal with the foraging behaviour of flying insects in Icelandic plant communities, one, especially, on the bumble bees, and the other on the potential impact of lupine on pollenating insects. These studies show that Iceland, as other countries, needs to be aware of the effect of land use changes and land management on pollenating insects, which play a major role in our ecosystems.

Last but not least, we have one article from the Baltic region on how fertilization of three different energy crops influences soil carbon, nitrogen and sulphur. An important contribution, showing that cultivation for crop production can also simultaneously build up carbon in the soil.

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