

Press information

Database illustrates chicken biodiversity

International team of scientists develops publicly accessible database with 174 chicken breeds

Insel Riems/Mariensee, 6 June 2019. A total of 174 chicken breeds are contained in a publicly accessible database which scientists from the University of Göttingen and the Friedrich-Loeffler-Institut (FLI) in Neustadt-Mariensee have developed in recent years together with numerous partners. The Synbreed Chicken Diversity Panel (SCDP) covers the better part of the existing species diversity of chicken.

In the accompanying scientific study, the researchers collected genotype information for almost 600,000 single nucleotide polymorphisms (SNPs) from 3,235 animals. SNPs are variations of single building blocks of the genome among individuals. They constructed a phylogenetic tree of unprecedented completeness and resolution. The results have been published in the journal *BMC Genomics*.

The diversity of breeds ranges from wild type to commercial broilers and layers, but also includes a variety of local breeds from almost all continents and fancy breeds from Germany. In the study, the team analyzed the genetic diversity among and between populations. The study showed that genetic diversity is reduced in both fancy breeds and commercial high performance breeds, in particular in layer lines. In African, South American and some Asian and European breeds, in contrast, genetic diversity is still considerable. „It is important that such highly diverse breeds are maintained for the sustainability and flexibility of future chicken breeding“, said Prof. Dr. Henner Simianer and Prof. Dr. Steffen Weigend from the Center for Integrated Breeding Research of the University of Göttingen. The SCDP is a permanent data collection and is continuously supplemented and expanded. With the publication of the study in *BMC Genomics*, all genotype data were uploaded to a data repository and

are therefore available to the scientific community for further analyses.

(<https://doi.org/10.6084/m9.figshare.8003909>.)

Original publication:

Malomane, D.K., Simianer, H., Weigend, A., Reimer, C., Schmitt, A.O., Weigend, S., 2019. The SYNBREED chicken diversity panel: a global resource to assess chicken diversity at high genomic resolution. BMC Genomics (2019). DOI: <https://doi.org/10.1186/s12864-019-5727-9>

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