

Global data resource shows genetic diversity of chickens

June 20 2019



A total of 174 chicken breeds are described in a publicly accessible database which scientists from the University of Göttingen and the Friedrich Loeffler Institute in Neustadt-Mariensee have built up in recent years with numerous international partners. This database, the Synbreed Chicken Diversity Panel (SCDP), includes information about a large proportion of the available chicken species and their diversity. Credit: Juliane Fellner

A total of 174 chicken breeds are described in a publicly accessible database which scientists from the University of Göttingen and the Friedrich Loeffler Institute in Neustadt-Mariensee have built up in recent years with numerous international partners. This database, the Synbreed Chicken Diversity Panel (SCDP), includes information about a large proportion of the available chicken species and their diversity. In the accompanying scientific study, the researchers genotyped 3,235 animals for nearly 600,000 single nucleotide polymorphisms (SNPs). SNPs are variations in separate genetic building blocks at specific regions of the genome that vary between individual animals. The researchers created a family tree of exceptional completeness and detail. The results have been published in the journal *BMC Genomics*.

The variety of breeds in the database ranges from wild birds to commercial broilers and egg-layers. In addition, it includes a range of local breeds from almost every continent as well as strains bred by hobbyists in Germany. In the study, the research team analysed genetic diversity within and between populations. The study showed that genetic diversity is reduced both within the hobby breeds and in high-performing commercial breeds, especially in those bred for egg-laying. In contrast, in African, South American and some Asian and European breeds, there is still considerable genetic diversity. "It is important for the sustainability and flexibility of breeding that these very different breeds are preserved," said Professor Henner Simianer and Professor Steffen Weigend from the Center for Integrated Breeding Research at the University of Göttingen.

More information: Dorcus Kholofelo Malomane et al, The SYNBREED chicken diversity panel: a global resource to assess chicken diversity at high genomic resolution, *BMC Genomics* (2019). [DOI: 10.1186/s12864-019-5727-9](https://doi.org/10.1186/s12864-019-5727-9)

Provided by University of Göttingen

Citation: Global data resource shows genetic diversity of chickens (2019, June 20) retrieved 21 June 2024 from <https://phys.org/news/2019-06-global-resource-genetic-diversity-chickens.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.