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OBSERVATORY

Commercial Production of Chickens Takes Toll on Genetic Diversity

By [HENRY FOUNTAIN](#)

To the connoisseur of fine food, chicken may seem depressingly monotonous no matter how it's prepared. But scientists worry about a more basic degree of sameness — a lack of genetic diversity in the birds that are raised for meat and eggs.

An analysis of commercial chicken populations around the world by William M. Muir of [Purdue University](#) and colleagues has revealed the extent of the problem. Fifty percent or more of the diversity of ancestral breeds has been lost, they report in [The Proceedings of the National Academy of Sciences](#). That could make chicken production more susceptible to disease outbreaks for which resistant genes have disappeared.

Sampling about 2,500 birds, the researchers looked at several thousand instances of genetic variation and used that to estimate what a hypothetical ancestral population looked like genetically. “Then we were able to say what is missing” in commercial birds, Dr. Muir said.

Their findings indicate that most of the diversity was lost with the advent of wide-scale commercial production in the 1950s. Only a handful of hundreds of breeds have been crossed to produce broilers and layers.

Dr. Muir said restoring some diversity was not simple a matter of crossing with more breeds — producers would lose the improvements they have made in existing lines. Instead, one approach would be to use genetic markers to aid in cross-breeding, “to select for the parts that are good,” he said.

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