

# New study finds cage-free egg-laying hen mortality declines over time

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New research published today in the journal *Scientific Reports* based on the largest analysis to date of commercial data on egg-laying hen mortality finds that mortality in higher-welfare, cage-free housing systems decreases over time as management experience increases and knowledge accrues.

This finding marks a major turning point in the debate over the transition in [housing systems](#) for egg-laying hens from battery cages to indoor cage-free systems, which some egg producers have argued would

increase hens' [mortality](#), even as it allowed birds to stretch their wings.

The study, authored by Dr. Cynthia Schuck-Paim and others, included data from 16 countries, 6,040 commercial flocks, and 176 million hens in a variety of caged and cage-free systems. Specifically, researchers compared mortality of flocks housed in conventional battery cages; furnished cages—which provide hens with additional space, together with a few home comforts such as a perch, nest and litter substrate to allow them to forage and dust bath; and indoor aviaries, or cage-free [housing](#) systems.

The authors conclude that mortality in cage-free flocks is not inherently higher than those housed in conventional battery cage systems, but rather declines as managers gain experience and knowledge over time.

"When comparisons are made between systems with similar levels of technological maturity, mortality in cage-free housing is not higher than in caged systems," said Schuck-Paim. "In fact, the observed trends in the data show that mortality can be lower in cage-free housing if management continues to improve and genetics are optimized for cage-free systems."

Furthermore, the paper notes that lower mortality or longer survival of hens is not necessarily a good indicator of health or welfare.

"What makes animals suffer is not necessarily what kills them," said Schuck-Paim. "Unhealthy individuals can suffer for extensive periods in caged conditions before succumbing to their fate, if they die at all; whereas other deaths, for example accidents or predation, may affect otherwise healthy individuals."

These findings could reframe the debate on the welfare of laying hens and on the evolution of the egg industry, and highlight the importance of

taking the degree of maturity and level of experience with a production system into account when conducting any farm animal health, behavior and welfare study that compares outcomes across systems.

**More information:** Cynthia Schuck-Paim et al. Laying hen mortality in different indoor housing systems: a meta-analysis of data from commercial farms in 16 countries, *Scientific Reports* (2021). [DOI: 10.1038/s41598-021-81868-3](https://doi.org/10.1038/s41598-021-81868-3)

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