Building Pathways to Healthier Hens

When Dr. Janice Siegford talks about the animals in her current research study on aviary environments for raising pullets and laying hens, the term "bird's-eye view" comes to mind.

In fact, that's precisely the perspective this Michigan State University associate professor and her Swiss colleagues are attempting to adopt in their research project. They hope to understand how chicks and hens perceive the aviary environment, and how aviary design can impact the birds' health and productivity.

With the industry shift from cages toward alternatives such as cage-free, it's vital for producers to know more about the costs and benefits of these various housing systems. Aviaries will become more prevalent, Siegford believes, but they are far from perfect.

"Aviaries can be more costly for the farmers simply because you often have fewer hens per unit of space and you don't get as many eggs," she explains. "Aviaries can also come with problems that make hens less productive. They will do things like cannibalize and feather-peck, leading to increased mortality. They can also get injured in complex, multi-tier systems; chickens are not agile fliers and crash about 20 percent of the time when they fly. We still have to work on the ideal synergy between what the birds need and are capable of, what customers and consumers see as being the right kind of life for a chicken, and of course, how to ensure farmers stay in business."

Healthier and more productive aviary environments, Siegford and her colleagues suggest, are dependent on structural design and on helping baby chickens learn the ropes – or, in this case, the ramps – from their mothers.

"Chickens learn a lot when they are young," Siegford says. "They hatch precocially and are able to eat and walk on their own, but they typically have mom around to follow for the first month or so. We have a lot of evidence about what she teaches them about what is right to eat, and what is not right to eat. It can be difficult for them to figure out this stuff on their own, but we can make it even harder if we rear them in one environment and then completely change their world by moving them to someplace else. Physically, they are not prepared to adapt to that challenge well."

Siegford's research colleagues at the VPH Institute in Bern, Switzerland, have been working on related issues. Dr. Ariane Stratmann has looked at how using ramps with laying hens reduces falls and collisions, while Dr. Michael J. Toscano has been studying keel bone damage. "In this study, our various research interests have come together and we can look at the aviary environment in a much more comprehensive way," Siegford says.

"One of the things I like about working with industry and groups like the Egg Industry Center that are interested in solving problems is the willingness to try things that maybe seem a little far-fetched – like ramps for chickens," Siegford adds.

"It's kind of a crazy problem, and it's hard to see how the chicken herself sees it. It's nice to be part of something where people are willing to look at things from different angles. I've found that attitude all the way from the producers up to the most senior people in industry and researchers and students in between."

PULLET TRANSITION RESEARCH GOALS

In this study, which is set for completion in 2019, Dr. Seigford and her colleagues are seeking data-driven answers to these questions:

1. During the rearing period, does encouraging greater and earlier locomotion among vertical tiers through the use of ramps lead to specific, short-term change that results in long-term improvements in the laying period?
2. What is the benefit of overall structural similarities between rearing and laying environments in how hens adapt to the latter in the period immediately following population?

Photo courtesy of Big Dutchman

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DR. JANICE SIEGFORD
Pictured center, with Dr. Michael Toscano (left) and Dr. Ariane Stratmann (right)