Researchers identify species of bacteria linked to lameness in broiler chickens

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Douglas Rhoads, University Professor of biological sciences at the University of Arkansas. Credit: Russell Cothren

Researchers at the University of Arkansas have identified a species of bacteria that had never before been associated with lameness in broiler

chickens, bringing scientists closer to finding a way to prevent infections.

Using genetic tools and chickens raised on wire flooring as is used in commercial production, the research team determined the bacterium Staphylococcus agnetis is significantly involved with a condition leading to lameness in those broiler chickens, said Douglas Rhoads, University Professor of biological sciences and director of the Cell and Molecular Biology interdisciplinary graduate program at the U of A.

The bacteria had been associated with inflammation of the mammary gland in cattle but not in the legs of broiler chickens. Lameness causes the chickens to suffer and the diseased birds are not fit for human consumption. Rough estimates are that lameness in the Arkansas poultry industry could cost growers about $20 million a year due the loss of birds, Rhoads said.

The team published its findings on Nov. 25 in *PLOS ONE*, the online, open-access journal from the *Public Library of Science*.

"Lameness in broiler chickens is a significant animal welfare and financial issue," Rhoads said. "This is the first report of this poorly described pathogen in chickens."

Bob Wideman, professor of poultry science at the U of A, had shown that growing young broilers on wire flooring is a contributing factor to lameness in broiler chickens. This study, which included Wideman, shows that S. agnetis is also a contributing factor for lameness in those chickens, Rhoads said.

Provided by University of Arkansas