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## Lameness is consistently better at predicting broiler chicken performance in mobility tests than other broiler characteristics

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## Abstract

To determine whether lame broilers are in pain it is necessary to compare measures of lameness and mobility before and after analgesic treatment. Such measures should not be unduly affected by other bird characteristics. This study assessed the performance of lame (gait score, GS 3-4) and non-lame (GS 0-1) broilers using two mobility tests: (i) a novel test to assess broiler ability to access resources when housed in groups (Group Obstacle test); and (ii) a Latency-to-Lie (LTL) test. Outcome test measures included number of obstacle crossings, latency to cross an obstacle, and time taken to sit in shallow water. Associations between outcome test measures and other bird characteristics (established lameness risk-factors), including strain, sex, age, mass, contact dermatitis and pathology, were also investigated. The performance of high-GS and low-GS broilers differed in both mobility tests and no other bird characteristics (eg being male and heavy). This component a predictor as lameness that cannot be explained by other bird characteristics (eg being male and heavy). This component may represent pain or discomfort. Both mobility tests are suitable for further application with analgesic testing to classify lameness-associated pain in broilers.

Keywords: animal welfare, broiler, lameness, latency-to-lie, obstacle test, pain