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Is the rotarod test an objective alternative to the gait score for evaluating walking ability in chickens?

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Abstract

*Walking ability is related to motor co-ordination which, in rodents, can be assessed by an established test in pharmacological studies — the rotarod test. The purpose of this study was to evaluate a modified rotarod test for chickens and its relation to the often-used gait score system. At the end of their rearing period, we tested 138 male chickens (*Gallus gallus domesticus*) from three differing growth performance strains: Ross 308 (fast-growing; n = 46), Lohmann Dual (medium-growing; n = 46) and Lohmann Brown Plus (slow-growing; n = 46). First, the chickens' gait scores were assessed and, immediately following this, they were placed gently onto a steady rod. The velocity of the rotating rod gradually increased, and the latency to leave the rod was recorded. By using a linear mixed model, we were able to show that the latency to leave the rotating rod was significantly predicted by the gait score. Fast-growing chickens had shorter durations on the rotating rod, and these durations were associated with gait score. We conclude that the rotarod test provides an objective alternative method for assessing walking ability in chickens without the need for intense observer training or the risk of observer biases and propose that this novel methodology has the potential to function as a precise, objective indicator of animal welfare.*

Keywords: *animal welfare, broiler, domestic fowl, gait score, motor co-ordination, walking ability*