INITIAL INVESTIGATION OF MORTALITY CAUSES IN FREE RANGE LAYER FLOCKS

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An investigation was undertaken in the Gatton free range layer facility at the University of Queensland to estimate the major causes of mortality for laying hens kept in free-range flocks. The aim was to develop better strategies for improving health and welfare in free range housing systems. Data on mortality were collected from the start of lay to 45 weeks of age. Mortality causes were diagnosed from gross necropsy only and the examinations were performed for the period from 30 to 45 wks of age. All dead/culled birds were collected daily, immediately refrigerated, and necropsied weekly. Samples for microbiological and pathological examination were not collected because of the delay between death and necropsy in many cases. This study is ongoing.

The results show that from start of lay until 45 weeks of age the average mortality rate in the free range flocks was 2.7% (1.7%, 1.7%, and 4.8%, respectively for each replicate). Of the birds necropsied 85% showed fresh and profound lesions/wounds; evidence of cannibalism. Additionally, there were dead birds (12% of examined birds) that did not exhibit external wounds and died due to cachexia (from stress and/or malnourishment). Examination of the reproductive tract of cachectic birds confirmed the presence of an undeveloped ovary and lack of large yellow follicles. The cause of death was also unclear in two cadavers (no signs of infectious or non-infectious diseases were found). The gross pathology findings indicated that cannibalism was the cause of death in 85% of all cases, which took the form of body pecking (50% of all cases, with a significance of pecking more on the left side than on right side of the tail), vent pecking (35% of all cases), and head pecking (15% of all cases).

Feather picking and cannibalism, which frequently occurs in free-range poultry, were among the major causes of mortality in three free range flocks. A wealth of factors such as environmental, ontogenetical and genetical may have played a role in the development and spread of feather-pecking and cannibalism behaviours in the flocks. Pecking started during rearing when mortality rate was very low, feather pecking was insignificant and no cases of death due to cannibalism were recorded. Cannibalism started to appear as feather pecking with the start of lay, probably developed and spread as an abnormal pecking behaviour emphasising changes in the hormonal status of the hen, high light intensities and social stress. The literature indicates that selective breeding of chicken for gentler behaviour could provide an alternative approach to address these problems and improve the welfare of free-range layers (Cheng et al., 2001). However, the development of cannibalism is still unclear. More research is needed on the motivational and learning components in selective breeding for high group productivity and survivability that would result in reduced mortality from cannibalism and improved productivity.


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