

Title: Occurrence and control of fatty liver haemorrhagic syndrome (FLHS) in caged hens

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Byline:

Since the 1950s there has been extensive research into the causes and prevention of fatty liver haemorrhagic syndrome (FLHS). This report confirms the presence of FLHS in caged laying flocks in Queensland, and suggests that age and housing conditions influence the incidence of FLHS in hens thereby causing producers significant economic loss.

Summary:

Fatty liver haemorrhagic syndrome (FLHS) is a metabolic condition occurring worldwide in caged layers, characterised by excessive fat accumulation in the liver and liver haemorrhage following rupture. FLHS causes significant losses to the egg industry; demonstrated by an investigation in Queensland in which FLHS was determined as the cause of 74% of mortalities in caged birds.

Due to the high incidence of the cause of death due to FLHS, this project was conducted in order to determine the incidence and impact of FLHS in caged layer commercial flocks.

Since the 1950s, there has been extensive research into the causes and prevention of this disease, especially in caged layers. However, the condition remains unresolved in laying hens. The objectives of this project were:

- (1) To determine the incidence of FLHS in caged layer flocks;
- (2) To ascertain factors that predispose hens to this condition; and
- (3) To understand the impact of this condition on hen health and performance

Initial methods of analysis for the first year of this project were a questionnaire and an epidemiological survey to identify farms that might have acute or sporadic outbreaks of FLHS, and ascertain factors that predispose hens to this syndrome. It was apparent from the questionnaire that most producers were unaware of the condition or monitored hen body weight (BW) during the laying period. In addition, the results of the epidemiological survey confirmed previous observations that laying hens, in multi-tier cages and in controlled environment sheds, are most at risk of dying from FLHS.

In the second year of the project FLHS was studied in an oestrogen-induced model of the condition, demonstrating that manipulation of feed intake might disturb lipid synthesis which is required for maintaining egg production.

This report confirms the presence of FLHS in caged laying flocks in Queensland, and suggests that age and housing conditions influence the incidence of FLHS in hens and cause producers significant economic loss. Studies conducted in this project showed that in addition to the metabolic state of the hen, inflammatory and immune responses appear to be involved in the pathogenesis of FLHS. Further studies are required to explore the interactions between metabolism, inflammation and endocrinology and explain why only some laying hens develop FLHS, while all have fatty livers. A greater understanding of the pathogenesis of FLHS will assist in developing diagnostic tools for early detection of the condition in the field.