

S145 Pathology and serum chemistry of layers affected with fatty liver hemorrhagic syndrome

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The present project was designed to study the serum biochemical and pathological changes in laying hens affected with fatty liver hemorrhagic syndrome and possible dietary sources responsible for this condition. For this purpose serum chemistry profiles of both suspected and healthy birds, selected from different commercial poultry farms based upon clinical findings (obesity, pale combs and wattles, drop in egg production and sudden increase in mortality at farm) were compared. The average concentration of alanine aminotransferase (ALT), aspartate aminotransferase (AST), triglycerides, serum cholesterol, glucose and lactate dehydrogenase (LDH) were significantly higher ($P < 0.05$) in suspected birds compared to healthy ones. For the definitive diagnosis of this problem pathological studies conducted on liver showed no changes in healthy birds while diseased birds showed both gross and microscopic lesions. Proximate analysis indicated significantly higher ($P < 0.05$) values of total fat and carbohydrates content of feed samples being offered to diseased birds as compared to healthy birds. It was concluded from the study that designated parameters of serum biochemistry could be useful in early diagnosis of FLHS while pathological studies can be conducted for definite diagnosis. It was also established that proximate analysis of feed samples is best solution for prevention of this metabolic disorder.

S146 Effect of two housing systems on ghrelin secretion in adult laying hens (*Gallus gallus domesticus*) at different times of life

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Ghrelin is important for food intake regulation in fowl and, thus, for energy metabolism. To test whether ghrelin would change during ontogeny in relation to energetic demand we used laying hens divergent selected for laying performance and analyzed ghrelin titers before and during laying period. We used laying hens of four different lines (4x16 animals): high performing white and brown pure bred lines (Lohmann Tierzucht GmbH) were compared with low performing lines (White Leghorn and New Hampshire). In order to additionally test effects of housing condition hens from all lines were kept in single cages ($N=32$) and a floor housing system ($N=32$). At 16-19, 33-35 and 49-51 weeks of life plasma samples were analyzed with a chicken Ghrelin ELISA Kit and data were analysed using Glimmix procedure of SAS 9.2. Ghrelin titers did not differ between genetic lines but were affected by housing condition x sampling time ($p < 0.0001$). During the first sampling period before start of laying period, hens kept in floor housing showed significantly higher ghrelin titers compared to hens in single cages. In addition, Ghrelin concentrations were highest in the first sampling period, followed by the third and second period whereas differences between the latter were low (all $p < 0.02$). Results suggest that ghrelin in fowl is not related to laying performance. Instead, ghrelin titers seem to change during ontogeny affected by housing condition probably due to differences in hens' behavioral activity.



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