

Ph.D. in Animal Science

Optimization of bone mineral status and performances of layers – Towards new calcium and phosphorus requirements through modeling approach

Research directors

Marie-Pierre Létourneau Montminy, Ph.D. and Agnès Narcy, Ph.D.

Research environment

This Ph.D. project will be funded by Laval University via Canadian Poultry Cluster 3 and DSM. During this Ph.D. program, the candidate will be part of the dynamic research team of Laval University Animal Science department and UMR BOA, INRA, Université de Tours.

Project description

Context: There is a tendency for extending the laying cycle of commercial flocks to reach 500 eggs per cycle. Modern hens are indeed able to produce more eggs by extending the laying period but stability in egg quality remains a challenge in older hens. However, the mineral nutrition of the hen has not materially evolved since many years. This research is therefore of major importance for the egg industry because osteoporosis, bone fracture and cage layer fatigue are often associated with mineral nutrition. Consumers and other stakeholders are putting pressure on producers to reduce their environmental impact and improve animal welfare. By a more precise knowledge of the requirement of P and Ca on a day scale according to the age of the bird, P inputs could be reduced and Ca inputs adjusted on a day scale to ensure eggshell quality and improve the management of manure and health problems to evolve towards a more sustainable production.

Methodology: The current research project is integrated in a large research program with the general objective of improving our understanding of P and Ca metabolism to optimize their utilization in poultry and better estimate Ca and P allowances. The objective is to integrate our knowledge on the basis of P and Ca metabolism in pullets and laying hens. A previous model developed in broilers will be adapted (Létourneau-Montminy et al., 2018).

Qualifications

- Master's degree in animal science or related topics
- Skills or interest in modelling is wishes
- The candidate must be able to follow courses in French

Other information

- The selected candidate must be admitted in the Ph.D. program
- This position will be available for 3 years starting in 2018
- A 21 000\$/year scholarship will be available.

Contacts

Marie-Pierre Létourneau-Montminy, Ph.D.
Professeur agrégé
Email: Marie-Pierre.Letourneau@fsaa.ulaval.ca

Agnès Narcy, Ph.D.
Ingénieur de recherche
agnes.narcy@inra.fr