ChickenStress a European Training Network (ETN)
ESR 8 – free range PhD – Early life conditions and individual differences in range use in free-ranging laying hens

Location: *ILVO _ Animal Sciences _ Scheldeweg 68 _ 9090 Melle (Belgium)*
Supervisor: *Dr. Frank Tuyttens Tel. +32 9 2722605*
Vacancy number: *EV/2019/011/Dier68*

Description

Many consumers pay a premium prize for free-range eggs mainly because they associate such production systems with better animal welfare. A properly designed free range area provides hens with ample space, stimuli and possibilities to express highly motivated behaviours (e.g. foraging and dustbathing). Nonetheless these animal welfare benefits may not be fully realised on commercial farms because the hens do not use the free range optimally. The reasons are not fully understood but seem to relate to inadequate designs of the free-range, inappropriate early-life conditions and individual hen-differences. In this study, innovative hen tracking technology will allow these factors to be unravelled.

The objectives of the PhD project are to 1) investigate the effect early-life conditions that better mimic incubation, hatching and rearing by natural mothers on range use and welfare; and 2) understand causes and consequences of individual differences in ranging behaviour. A 2x2 factorial experiment will be conducted with half the birds incubated in darkness (standard practice), and the other half in 12:12 light cycle. Of these two treatments, half the pullets will be reared with access to a dark brooder (a shelter that mimics the dark warmth of a mother hen's wings) and the other half without. At the end of the rearing period, stress resilience, fear and other welfare indicators will be compared between treatments. The birds will then be transferred to an experimental field and housed in mobile poultry houses with access to a range with two types of vegetation cover. During the egg-laying period, the birds will be individually tracked to quantify their range use, using an ultra-wideband tracking system already in use at ILVO. These same birds will also be scored on productivity, behaviour, welfare, fear, and stress resilience. Two predictions will be tested: (1) that light incubation and dark brooders improve welfare, stress-resilience, productivity and range-use of hens, and (2) that hens that range more are less fearful and stress-resilient and have better welfare.

The student will be employed by ILVO (Flanders Research Institute for Agriculture, Fisheries and Food) and registered for a PhD at the Faculty of Veterinary Medicine of Ghent University (Belgium). The student will spend a four-month secondment with our academic partner at the Open University (Israel), to learn how to process chicken brain tissue and to quantify hippocampal neurogenesis as a measure of stress-resilience. The student will also spend a further 2 month secondment with our industrial partner Lakes Free Range Co. (UK) to understand the working of a free-range egg production business and assist in optimizing processes for welfare and productivity.

Requirements

Competencies	Essential	Desirable
Education / Qualifications	Master's degree (or a degree of minimum four years of study considered equivalent by Ghent University) in a biological science, including animal science, biology, zoology, bio-engineering, veterinary medicine and related disciplines. Comply with the general terms and regulations for PhD positions at the ILVO (https://www.ilvo.vlaanderen.be/language/en-US/EN/Work-at-ILVO/General-terms-and-regulations.aspx#.XJ4TV5hKhaQ). Comply with the general terms and regulations for PhD positions at the Ghent University (https://www.ugent.be/prospect/en/administration/application/requirement/phd.htm#DoctoralDegree(i.e.Doctorate,Ph.D). Evidence of English language ability: • English at level B2 is required. • The supervisor can also confirm that you have the required level of English. Certificate to conduct animal experiments (FELASA C) or obtaining such a certificate within the first year of the PhD (courses will be organized).	
Skills / Abilities	Fluent written and spoken English. Good written and oral English communication skills. Evidence of numeracy skills (familiar with Excel, for example).	Competence in basic statistics. Willing to learn more complex statistics. Technical and IT skills are an asset.
Experience	Experience in designing and conducting scientific experiments, analyzing data, presenting results.	Experience working with animals, ideally birds. Experience with animal behaviour research.
Knowledge	Basic knowledge of animal behaviour and animal welfare.	Knowledge of egg industry. Willing to learn how to handle large and complex data sets.
Other Requirements	Proactive, problem-solving attitude. Ability to work well as part of a team.	Ability to rapidly acquire new skills. Interest in animal welfare/behaviour. Interest in the egg industry. No known allergies to poultry.