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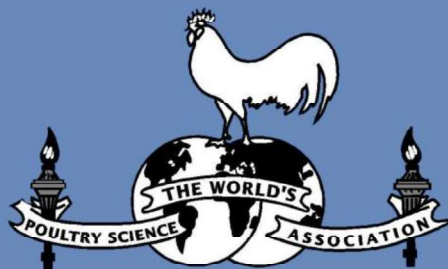
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ABSTRACTS

Relation between range use and parasitic infection in Italian organic laying hens**Valentina Ferrante¹, Cristina Tognoli¹, Guido Grilli⁵, Lorenzo Ferrari¹, Paolo Ferrari², Monique Bestman³, Stefan Gunnarsson⁴**¹Department of Environmental Science and Policy, Università degli Studi di Milano, Italy, ²Centro Ricerche Produzioni Animali - C.R.P.A. S.p.A., ³Louis Bolk Institute, The Netherlands, ⁴Swedish University of Agricultural Sciences, Sweden, ⁵Department of Veterinary Medicine and Animal Sciences, Università degli Studi di Milano, ItalyCorresponding author: valentina.ferrante@unimi.it

Organic laying hens have access to outdoor areas that is regarded as a potential source of helminth infections. Helminthic infections with e.g. *Ascaridia galli* (A) have been associated with performance losses. Some studies have found that *A. galli* and *Heterakis* spp (H) are the main species founded in organic and free range systems. The aim of this study was to evaluate: -the relation between parasite eggs in the free-range soil and the intensity of use of the range area in terms of distance to the stable and proportion of chickens using the range area; -the level of individual laying hens, between frequency of use of the range area and faecal egg counts. The study was carried out in 8 Italian organic layer farms (45 to 80 weeks of age), that have had range access >5 months and were not dewormed. Twenty samples were taken per farm: 6 soil samples (5-20-50 m from the pop-holes), 7 mixed manure samples from 70 'outdoor hens' at >50 m from the pope-holes and 7 mixed samples from 70 'indoor hens'. All samples were analyzed for eggs from A/H and *Capillaria* (EPG; McMaster method). Paired samples t-tests and Pearson correlations were performed with IBM SPSS version 25. Manure from outdoor hens had significantly less EPG for A/H compared to manure from indoor hens (47% vs 63%; mean 43 vs 172 P>0.05); EPG for A/H outdoor and indoor were correlated (p=0,37). Soil samples had a high prevalence of *Capillaria* (87%), as well as manure collected indoor and outdoor (33 vs 24). The mean of *Capillaria* eggs were significantly higher in soil then both the outdoor and indoor manure samplings (112,50vs22.22vs12,96; p<0,000). The mean mortality at 60 weeks was 5%, production at 60 weeks and health parameters did not deviate from hybrid standard. The lower presence of A/H both in the soil and in the outdoor manure may indicate a poor use of the farthest location of the range; when investigated on flock level, infection with parasites did not severely impair the performance. Funding: ERA-net Core Organic Cofund FreeBirds

Keywords: Organic laying hens; free range; parasites