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## Laying performances and egg quality in two broiler breeder purelines divergently selected on their meat ultimate pH.

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## 2018 Meeting – Edinburgh, Scotland

*Holiday Inn*, 132 Corstophine Road, Edinburgh  
EH12 6UA, UK

2018 October 4<sup>th</sup> and 5<sup>th</sup>

### CALL FOR PRESENTATIONS AND ABSTRACTS FORM

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### CALL FOR PRESENTATIONS AND ABSTRACTS

If you wish to offer an oral presentation or poster on any topic (Fertility, Egg incubation, Embryonic Development, Commercial Breeder Management) please provide the following details and indicate your form of presentation below.

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<b>breeder purelines divergently selected on their meat ultimate pH.</b>	
<b>Format of abstract: 300-500 words; letter type Arial 11</b>	
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<b>ABSTRACT</b>	
The selection of meat-type lines for increased growth and muscle development has been	
accompanied by significant physiological changes. While considerable gains have been made	
in production performances, there are limits in terms of product quality but also reproduction.	
There is therefore a real challenge to better understand and exploit, the elements of the	
compromise between production, reproduction and meat quality.	
The study focused on breeder hens at the 11th generation of selection, at which a differential	
of 0.5 pH unit is observed for the selection criterion (ultimate pH measured in chicken growing	
in the breast muscle at 6 weeks). Eighty females for the pHu+ and for the pHu- lines were	
housed in single cages in controlled environment from 20 to 40 weeks of age. During this	
period,	
eggs were weighted every week and eggshell mechanical properties (eggshell shape, percent,	
index, thickness, toughness, elasticity) have been determined to evaluate the egg quality for	
each line during all the laying period.	
Data collected between 23 and 39 weeks of age show a decrease in the laying rate, a first egg	
delayed and a higher percentage of broken eggs in the high pH line (pHu+, line presenting the	
lower energy status) by comparison to the low pH line (pHu-). Divergent selection also changed	
the characteristics of the eggs, resulting in heavier eggs and a higher shape index value (more	
round shape eggs) in the pHu+ line.	
In conclusion, these results suggest a deterioration in the reproductive performance studied	
and changes in the characteristics of eggs in relation to the decrease in energy storage caused	
by selection for an increase in pHu. These first observations pave the way for future	
genetic studies to evaluate the contribution of energy status in terms of improving reproductive	
traits whose degradation penalizes the meat-type sectors. In an original way, they also suggest	
the possibility of identifying new indicators or biomarkers of the energy status from measures	
related to reproduction and the egg.	