



Article added on: 02/06/05
Category: Research: Project Summary
Key words: 100% organic rations, table birds, poultry, feeding

Project Title: Towards One Hundred Percent Organic: Research and development to achieve a one hundred percent organic ration for the Sheepdrove poultry system: Trial 1



Short Title: Poultry breed and feed trial 1

Project Code: SOF030/1 and SOF030/2 (a two part trial)

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Project Partners: Sheepdrove Organic Farm, Andy Butterworth - University of Bristol

Start Date: January 2004

End Date: August 2004

Funder: Sheepdrove Trust

Key Words: 100% organic rations, table birds, poultry, feeding

EFRC Programme: Poultry

Project Aim: This project alongside the other poultry breed and feed project aims to research and develop the possibility of achieving a complete production one hundred percent organic ration for the table birds reared at Sheepdrove organic farm.

Abstract of Research:

- This final report summarises the results of the first trial of the work in relation to 'breed and feed' trials.

- The trial was undertaken to investigate the impact of removing the Soil Association derogation for 20 per cent non-organic component in organic table bird feed ration.
- The trial also investigated the suitability of the ISA 257 breed currently used in the SOF system, as it has been questioned as to whether it is the most appropriate genotype to use.
- The objectives of the trial were to compare a one hundred percent organic ration with Sheepdrove's usual eighty percent ration, and the usual ISA 257 breed with the Colourpac bird. In addition to establish the impact of the above regimes on the agronomic and economic factors in the system, including bird weight, dressed weight, carcase downgrading conditions and feed consumption and costing, and to ascertain the impact of the regimes on the health, welfare and behavioural factors.
- Two batches of 2000 birds were grown in identical houses divided into sections in mixed flocks of approximately 500, under organic free-range conditions conforming to Soil Association standards.
- Weekly weights were obtained for 50-bird samples of each genotype and ration combination in each flock/house, as were behavioural observations after week 6.
- Gait scoring was undertaken one week prior to depletion for a sample of birds of each genotype and ration combination in each flock/house.
- At slaughter, on-line flapping, feather damage, bird cleanliness, contact dermatitis, carcase weight, carcase bruising, wing haemorrhages, damage to the skin and carcase conformation scores were collected for a sample of 51 birds of each genotype and ration combination from each flock/house.
- The trial indicated a small statistical difference in the live and carcase weights between the two rations, with the 100 percent producing slightly lower average weights. In practice and in the context of the soon to be removed derogation this difference is minimal. This difference is further reduced, as the trial did not identify an economic shortfall in producing birds on the 100 percent ration.
- In addition, the trial did not identify any overall health, growth or welfare implications, or any behavioural differences, in the birds the four regimes (ISA and Colourpac on the 80 percent organic ration, and ISA and Colourpac on the 100 percent organic ration). This was despite an initial suggestion that a nutritional inadequacy in the 100 percent organic ration may cause differences to be apparent.
- There were some differences between the two strains of bird ISA 257 birds were found to be significantly less clean, had more feather damage and back bruising than Colourpac birds. However these were generally at low levels overall, and despite these findings, the ISA 257 was found to have better carcase conformation when compared with the Colourpac.
- The trial highlights footpad dermatitis as a possible welfare concern, as footpad dermatitis was found to be at high levels relative to conventional systems across all the regimes. It is possible this is due to litter condition. This indicates that foot condition within the Sheepdrove system should be monitored.
- Wing haemorrhage and red wing tips were significantly more prevalent in ISA 257 birds than Colourpacs. This is not the result of more severe flapping, as ISA

- 257 flapped significantly less than Colourpac birds, so this could be the result of a difference in bird robustness. This merits further investigation.
- In conclusion, on the basis of the trial, there appears to be no implication in moving to the 100 percent ration when required to do so. It should be considered that the finding could be an artefact of the summer weather; so further study should investigate the same regime with the winter season.
 - Further study should also consider other 100 per cent ration formulations.

Objectives: The trial compared a one hundred percent organic ration with Sheepdrove's usual eighty percent ration, and the usual ISA 257 breed with the Colourpac bird.

The trial established the impact of the four regimes (ISA and Colourpac on the 80 percent organic ration, and ISA and Colourpac on the 100 percent organic ration) on the agronomic and economic factors in the system, including bird weight, dressed weight, carcase downgrading conditions and feed consumption and costing, and ascertained their impact.

It also established the impact of the four regimes on the health, welfare and behavioural factors in the system.

Expected Benefits: The benefits derived from this research will include scientific evidence of an effect, if any, a move to a 100 per cent organic ration will have on the health welfare and performance of table birds in an organic silvo-poultry system. It will provide crucial, but currently absent evidence to inform the decision of lifting the derogation.

In addition, it will help to provide information on the breeds better suited to the organic table bird production than the currently used, slower growing, but essentially conventional breeds of bird.

Output:

- Final report completed
- Submitted, accepted and presented at 17th Soil Association Annual Conference and 1st Annual Congress of the EU Integrated Project Quality Low Input Food – Organic Farming, food Quality and Health “Improving quality and safety and reduction of cost in the European organic and ‘Low input’ food supply chains” Newcastle, UK. Abstract printed in conference proceedings. As a result of the presentation the abstract has been selected to be published in a special edition of the Journal of the Science of Food and Agriculture.
- Submitted and accepted for 15th IFOAM Organic World Conference 2005, Shaping Sustainable Systems in Adelaide, South Australia, under Researching Sustainable Systems Conference, under the topic of Animal production research (breeding, husbandry, health and welfare. Full paper to be printed in Conference proceeding