

Development of an agroforestry system for chicken production

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ABSTRACT

Because conventional production of chickens has gone further than any other animal production system towards complete control of the animal's brief lives, development of effective silvo-poultry systems seems particularly necessary for these essentially woodland birds. The objective is to develop a production system that closely matches the physiological and behavioural needs of the animals being reared. For the example of chickens, this means trying to mimic a woodland/forest-clearing environment. By providing a wide range of trees, shrubs and herbs, it should be possible to provide shelter, nutrition and medicinal benefits for the birds. At the same time, the system needs to fulfil other functions in terms of biodiversity and community assets for the farm, together with profitable organic chicken production.

Keywords: poultry; agroforestry; production systems

INTRODUCTION

IOR-EFRC has been working with a fully converted commercial organic farm, Sheepdrove Organic Farm in England, to develop an agroforestry system for organic table bird production. Agroforestry is a range of different approaches for integrating trees, crops and animals to the mutual benefit of all components. It is particularly appropriate for organic agriculture because of the increased range of interacting elements of biodiversity relative to crop or animal based systems.

The major aim of the project is to develop a system that provides chickens with an environment that approximates to their original habitat. The domesticated chicken has evolved from a ground dwelling forest fowl that inhabited forest clearings and woodland edges. Therefore we need to re-create this environment while keeping in mind the needs of a commercial organic farm. This leads to a set of objectives for the project:

- 1 To provide living conditions that allows the chickens to express the basic aspects of their innate behaviour, by establishing a woodland edge habitat.
- 2 To provide a wide range of trees and shrubs for shelter and nutrition, together with a wide range of understorey plants additional to the background grass/clover ley. The herbs should provide both nutritional diversity and medicinal potential.

- 3 The system, overall, should provide a biodiversity asset for the farm.
- 4 The system should also provide a community asset in terms of landscape and the opportunities to gather hedgerow fruits.
- 5 The system should provide profitable chicken production based on a product with an outstanding organic production image.
- 6 The system should provide flexibility for crop rotations and for the later introduction of other animal enterprises.

SYSTEM DEVELOPMENT

Within the existing organic system, the chickens are currently in good condition with low mortality (2%) and reasonable weight gain. The mobile sheds are well insulated and afford adequate protection from sun, cold and wind. The ratio of chickens to stockman is low (especially for table birds) and management is excellent. However, there are no perches or dust baths provided. And the birds do not range far from the sheds—even on a warm sunny day. Lack of ranging is causing several problems:

- The birds are not consuming 'wild' food or exercising outside. They are behaving as if they are barn-reared birds. The meat therefore cannot differ qualitatively from barn-reared birds.
- The aesthetic appearance of the site is greatly reduced by the lack of visible birds and the monotony of the ley area.

The planned system is based on highly diversified parallel hedges incorporating tree, shrub and herb species suited to chickens. The hedges are 50 m apart to allow space for the mobile poultry houses and subsequent cropping. The tree choice is determined by soil type, depth, site aspect and local culture.

The research project is completing its planning stage and we are expecting to provide a facility for multidisciplinary research on chicken production, encompassing biological, socio-economic and policy aspects.

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