

# Chicken Run Innovation Project - Enrichment for Broilers

## Background

Worldwide chickens are raised in environments with little stimulation or opportunity to express their full range of natural behaviours. Allowing for the expression of natural behaviours is important for the health and welfare of an animal.

Environmental enrichment is the provision of stimuli which promote the expression of species-appropriate behavioural activities and biological functioning of the animal.

To be effective, enrichment should:

- maintain the interest of the birds
- increase the occurrence of desirable behaviours
- decrease detrimental behaviours and
- be practical to implement, e.g. easy to disinfect across successive flocks

However, the enrichment commonly used in commercial broiler houses is often not able to meet these criteria (Table 1).

In this Innovation project, the Food Animal Initiative (FAI) – which is the sustainable farming research and development arm of Benchmark Sustainability - and M&S teamed up with Sustain at the Royal College of Art (RCA) to develop novel forms of environmental enrichment for broilers.

The aim is to produce and test a prototype that meets the needs' of the birds, is practical for producers to use and provides environmental benefits, such as reducing feed requirements or making use of waste materials.

## A novel approach to welfare

Sustain was established by the RCA in 2011 to inspire, encourage and support students to embrace sustainability in their work. Sustain helps students from across the RCA use innovation to address pressing social and environmental issues.

At an annual event they run in October called AcrossRCA, students from different disciplines come together to work on live projects. The event consists of one week of development, one week of workshops and four to five weeks of final ideas development.

At the workshop, which was open to 25 students from across the Royal College of Art, students were selected to form a team to design and innovate novel forms of enrichment for chickens. The teams then developed and evolved their 'enrichment ideas' with the guidance and support of the Sustain team and RCA workshop leaders.

### Innovation in practice

Testing of the prototypes is now underway at commercial farms in the UK. Testing includes comparisons of production parameters, M&S welfare KPI's and behavioural observations.

### Innovation delivered

Once the testing is complete, we will work closely with the teams to inform of refine each enrichment idea. The most appropriate ones will then be selected and presented for review later in the year. Watch this space...

Table 1. Benefits and problems associated with commonly used types of enrichment in commercial broiler houses

Enrichment	Benefits	Problems
Perches	1. Strong evidence for birds wanting to perch	1. Commercial broilers are physically unable to perch after about 20 days of age and rarely use perches above 10inches. 2. It is not possible to provide perching space for all birds in a house. 3. Additional obstacles for stock people to navigate. 4. Can be difficult to clean down and disinfect after use.
Straw bales/ wood chip bales	1. Provides substrate for exploratory/foraging behaviour. 2. Provides a substrate for dust bathing. 4. Convenient for stock people to place and no need to remove at the end of the cycle. 5. Provides spatial variation.	1. Potential problems with biosecurity. 2. Can be rapidly used up. 3. Can be difficult or expensive to maintain. 4. Birds may not be physically able to get up on bales. 5. All birds are unable to use the bales at the same time.
Pecking objects (pecking blocks, CDs, string).	1. Initial interest in pecking objects.	1. Does not maintain birds' interest as does not provide a reward/does not change. Often ignored after the initial placement.
Natural Light	1. Provides higher light intensity inside houses which is important for increasing activity, particularly foraging.	1. Expensive, as windows need to be fitted. 2. It is not clear which design / placement of windows is most appropriate.

Diagram 2

