



## CASE STUDY: Clive Soanes Broilers Ltd (BROILERS)

### How is broiler performance affected when soya is partially replaced by faba beans?

Clive Soanes Broilers Ltd ran a feeding trial evaluating the effect of reducing soya and partially replacing with UK-grown faba beans across three crops of broilers at one of its production sites in 2024.

The company is part of a family-owned, fully integrated poultry business based in East Yorkshire. Managing Director Claire Wright oversees 650,000 birds across company-owned farms, with two contract growers producing a similar number of birds. The birds are reared from day-old through to 33-48 days before being processed by sister company Soanes Poultry Ltd, which handles around 145,000 birds per week.

The processing business undertook a carbon mapping exercise in recent years, which identified feed as the largest single contributor to total emissions accounting for 50.68% of the carbon footprint. With soya as the principal driver, Claire and her team were keen to investigate opportunities to reduce soya use while maintaining welfare and performance standards.

Regular technical meetings with feed supplier ABN led to discussions about the NCS project and the potential to trial field beans as part of a more sustainable ration. Claire was open to exploring the option, recognising the need for ongoing innovation in a rapidly evolving poultry sector.

In 2024, one Clive Soanes Broilers site adopted a ration with reduced soya and increased faba bean inclusion, supplied by ABN. The aim was to assess whether bean inclusion could be achieved without adversely affecting bird performance.

The first crop of birds was fed a ration with a moderate reduction in soya replaced by bean protein. Litter quality remained unchanged, indicating good gut health and no negative impacts so the level of beans was increased in the ration for the second and third crops.

Overall bird performance remained robust across all crops, but the inclusion of raw field beans at higher rates had a measurable impact on feed efficiency. While intakes remained stable and bird condition was excellent, the lower FCR contributed to higher production costs. Minor improvements were noted in welfare-related metrics due to healthier skin condition and fewer rejects.

Table 1 summarises the performance impact of bean inclusion, comparing it with a broader dataset across multiple poultry trials including this one.

The trial confirmed that raw faba beans can be incorporated into broiler diets without compromising health or welfare. However, higher inclusion levels resulted in wetter litter requiring increased management, a higher FCR, and increasing cost of production.

These findings point toward processing – such as extrusion – as a likely route to unlocking greater nutritional value by reducing antinutritional factors and improving protein digestibility.

**Table 1: Performance summary**

|                                                     | Control |          | Beans |          |
|-----------------------------------------------------|---------|----------|-------|----------|
|                                                     | Site    | Overall* | Site  | Overall* |
| <b>39 day live weight (kg)</b>                      | 2.620   | 2.585    | 2.629 | 2.571    |
| <b>39 day FCR</b>                                   | 1.618   | 1.639    | 1.694 | 1.687    |
| <b>Mortality</b>                                    | 3.47%   | 4.02%    | 3.67% | 3.32%    |
| <b>European Production Efficiency Factor (EPEF)</b> | 401     | 389      | 383   | 378      |

\* Average across all sites participating in the trial

## Carbon differences

Data from all the NCS project broiler trials was analysed by project partner Farm Carbon Toolkit. This highlighted that bean-fed birds consume around 3.6% more feed than control groups. However, the bean diet had a considerably lower carbon footprint than the control diet containing more soya (1169 kg per tonne of feed compared to 1371 kg) containing more soya. As

bird weights from both diets were virtually identical performance of both diets was equal, allowing a fair comparison of carbon efficiency. This showed that even with the higher quantities consumed by the bean-fed birds carbon emissions (from feed) were 12% lower than those fed the control diet.

**Table 2: Carbon cost of bean fed birds vs control (data from across all NCS broiler trials)**

|                                                            | Beans | Control |
|------------------------------------------------------------|-------|---------|
| Feed consumed per bird (kg)                                | 4.615 | 4.455   |
| CO <sub>2</sub> +LUC* (CO <sub>2</sub> ) per tonne of feed | 1169  | 1371    |
| Carbon value of feed consumed                              | 5.39  | 6.11    |
|                                                            |       |         |
| Live weight (kg)                                           | 2.678 | 2.679   |
|                                                            |       |         |
| Carbon cost (of feed) per kg liveweight gain               | 2.01  | 2.28    |
| Full carbon cost** per kg live-weight gain                 | 3.45  | 3.81    |

\*LUC = Land Use Change

\*\*Full carbon cost also includes emissions from manure and other elements



## Next steps

A second phase of trials started in November 2025 involving extruded faba beans, where processing is expected to reduce antinutritional compounds, enhance nutrient availability support improved FCR, and maintain or improve bird welfare.

Claire explained that if a marketable low-soya ration can be developed that reduces carbon emissions and maintains cost efficiency, it could open opportunities for their own arable unit to grow beans profitably as part of a more circular, integrated farming system.

**“Improving sustainability is the right thing to do and a business priority, but any ration change must be economically viable for both the poultry unit and arable enterprise. As a business we want to be at the front of positive change. The market moves quickly and if we don’t innovate, we’ll soon be out of date.”**

**Claire Wright, Managing Director**

## Clive Soanes Broilers Ltd

- Fully family-owned, independent and integrated
- 650,000 broilers
- Two contract growers with similar total capacity
- Birds processed by Soanes Poultry Ltd (145,000 birds/week)
- Sales into wholesale butchers, farm shops, restaurants, and ready-meal processors

## NCS Project

Nitrogen efficient plants for Climate Smart arable cropping systems (NCS) is a four-year £5.9m research programme aiming to enable UK farming to bring about a reduction of 3.4MtCO<sub>2</sub>e p/a or 54% of the maximum potential for the industry through increased production and use of pulses. Led by PGRO it involves 200 UK farms and 17 partners. The project is funded by the Farming Futures R&D Fund: Climate smart farming, part of Defra’s Farming Innovation Programme. Defra is working in partnership with Innovate UK who are delivering the programme.

