



# Sustainable Farming

## Farm facts

**Name:** Midland Pig Producers

**Location:** Staffordshire

**Farm size and enterprise:** 450 sows selling all progeny at 7kg and finishing pigs as part of the Green Pig trial

## Background

Midland Pig Producers are hosting commercial scale trials as part of the Green Pig Project. The Green Pig Project is a collaborative project between research and industrial partners and is sponsored by Defra through the Sustainable Livestock Production LINK Programme. The aim of the project is to assess the potential of using home-grown legumes (peas and beans) in growing/finishing pig diets as a means of reducing environmental burden and soyabean meal (SBM) dependency in UK pig production.

## Benefits

- Reduce dependency on imported SBM
- Improve farm sustainability with home-grown pulses (peas and beans)
- Reduce environmental impact of farm
- If SBM prices continue to rise or availability is reduced, pig producers can be confident in using pulse crops as replacements.

## The trial

Three different diet formulations were fed to batches of pigs 35-110kg. Parallel treatments were carried out on slatted and straw-based housing.

The trial commenced with the first set of three diets (Finisher 1) introduced when the batches of pigs reached approximately 35kg in weight. At approximately 60kg, a second set of three rations was introduced with a reduced total protein and energy level (Finisher 2). The pigs were removed from the trial and taken to slaughter once they reached 110kg.

The following diets were used:

- Control diet (SBM)
- Pea diet (30% peas, no SBM)
- Bean diet (30% beans, no SBM)



*The Green Pig Project feed trial has gone very well, no adverse effects seen with any of the diets, all pigs grew and graded well.*

*Trevor Digby, Production Director*



The maximum currently accepted level of pulses is around 15%, typical inclusion rates are 5-11%. The Green Pig diets were formulated to be nutritionally balanced through use of pure amino acids.



*A Green Pig ration containing a 30% pulse inclusion level*

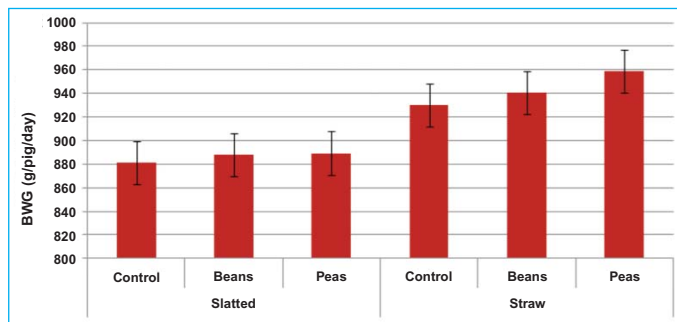
## Results

Test diets resulted in similar pig body weight gain (BWG; Fig. 1) and feed conversion ratio (FCR; Fig. 2) indicating no detrimental effect of using 30% peas and faba beans in pig diets in the absence of SBM. Also back fat depth (P2; Fig. 3) measured at slaughter were similar, and mean P2 values obtained were below the 12mm upper limit for premium carcass payment.

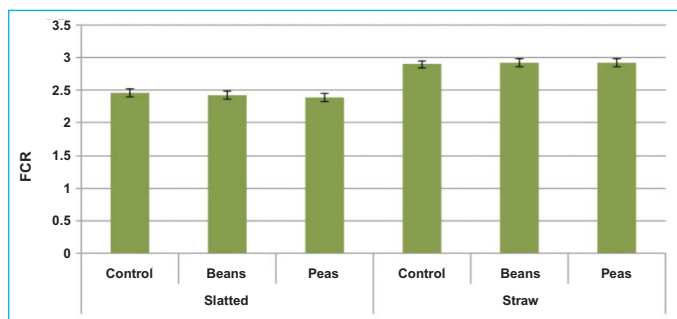
The slaughter data has been analysed using QBox (Fig. 4) to give a commercial overview of how many pigs from each treatment met the required contract slaughter specification. The graphs show the distribution of pig carcass weight and back fat (probe). The majority of pigs fell within the desired specification (dark shaded area) and therefore full contract payment. Deductions are applied to pigs which fall outside of the dark shaded areas.



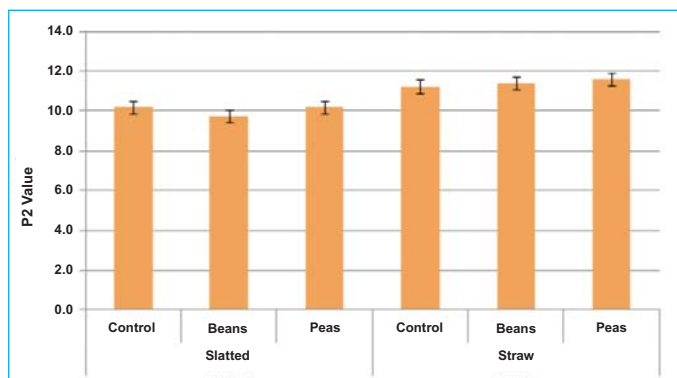
**Figure 1** The body weight gain (BWG) (g/pig/day) of pigs (35-110kg) fed control, bean and pea diets housed on a slatted or straw system



**Figure 2** FCR of pigs (35kg-110kg) fed control, bean and pea diets housed on a slatted or straw system



**Figure 3** Fat depth at the P2 position of pigs fed control, bean and pea diets housed on a slatted or straw system



**Conclusion**

The project has shown that higher levels of peas and beans than are currently used in the UK can be included in rations for grower and finisher pigs without significant penalties on growth performance or slaughter measures.

Furthermore, there is no difference between pea and faba bean based diets suggesting farmers can choose the pulse which best suits them. Thus, peas and faba beans are a viable home-grown alternative to SBM in grower and finisher pig diets.

**Green Pig Life Cycle Assessment (LCA)**

The environmental benefits of using pea and faba bean based diets are being assessed in the Green Pig project through LCA modelling. The LCA has shown that such an approach will contribute to reduce environmental burdens arising from pig production, especially when otherwise used SBM is associated with recent land use change (eg deforestation). This positive answer could lead to an increased demand for pulses being generated from the animal feed industry. Provided that this increased demand can be met, as a whole, the UK pig industry is given an opportunity to become increasingly more sustainable, with reduced reliance on imported protein sources whilst also complying with policies that aim to reduce its environmental footprint.

**Figure 4** QBox analysis

