

## On Farm Feeding Replacing bought in pig feed with home-grown straights at Sheepdrove Organic Farm

### Background

The ever increasing price and decreasing availability of oil has a major affect on the price and availability of imported and processed animal feeds across all sectors. Organic produce is often seen as niche and expensive. If organic producers continue to use feedstuffs produced in an oil expensive fashion they will become exactly that. Organic systems aim to operate in an ecological and economical way, importing cereals grown thousands of miles away, processed at a mill and then transported again to our farms is costly in oil and therefore money. It is neither ecologically nor economically sustainable. British farms are capable of producing a large amount of high quality cereal, the majority of which is usually sold. Transportation and processing of the grain uses oil and leaves farms vulnerable to market prices. If farmers could formulate diets and feeding programmes for their poultry and pig systems using home-grown cereals, market variables, oil emissions and costs could be cut dramatically.

### The Trial

Wheat is often used in pig diets although the digestible energy (DE) and crude protein (CP) can be more variable than other cereals such as maize, sorghum and barley.<sup>1</sup> During threshing the husk [of the wheat] becomes detached, this means that it is more easily digested by a monogastric digestive system, resulting in easily available CP and similar level of DE to maize<sup>2</sup>.

Triticale, a hybrid of wheat and rye, is designed to combine the grain quality, productivity and disease resistance of wheat and the vigour, hardiness and high lysine content of rye. Countries such as Canada, the U.S.A. and Australia are already growing large quantities of triticale and are starting to advocate its use as a monogastric feed. It has more crude protein and an amino acid profile that more closely matches the requirement of finishing pig than corn – its use as an ingredient in pig diets will also decrease the amount of soya bean meal required.<sup>3</sup>

### Objectives

This trial looked at replacing 50% of the bought-in concentrate with home grown cereals. It was decided that Triticale and Wheat would be compared to each other and a control diet of 100% concentrate.

The key objectives were

- To establish whether pigs finished to target weights in the given time period
- To establish the economic and ecological value of feeding home produced triticale and wheat
- To ensure that Sheepdrove's high welfare standards were maintained

Pigs on all three diets were weighed weekly using electronic scales (see photo), carcass assessments were made using data from the slaughter house.



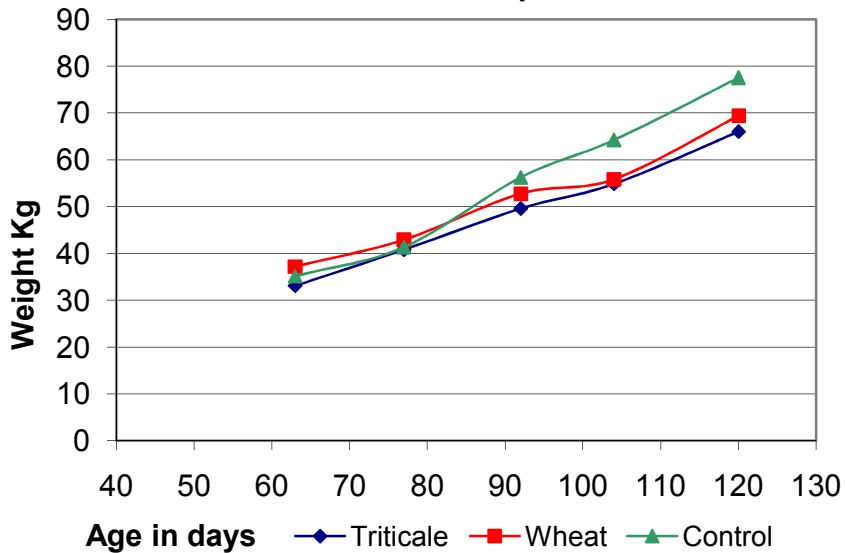
<sup>1</sup> Blair, R. (2007) Nutrition and Feeding of Organic Pigs, Oxfordshire: CABI

<sup>2</sup> Blair, R. (2007) Nutrition and Feeding of Organic Pigs, Oxfordshire: CABI

<sup>3</sup> Effects of Triticale-Based Diets on Finishing Pig Performance and Pork Quality in Deep-Bedded Hoop Barns. *Iowa State University Animal Industry Report 2006*

## Results

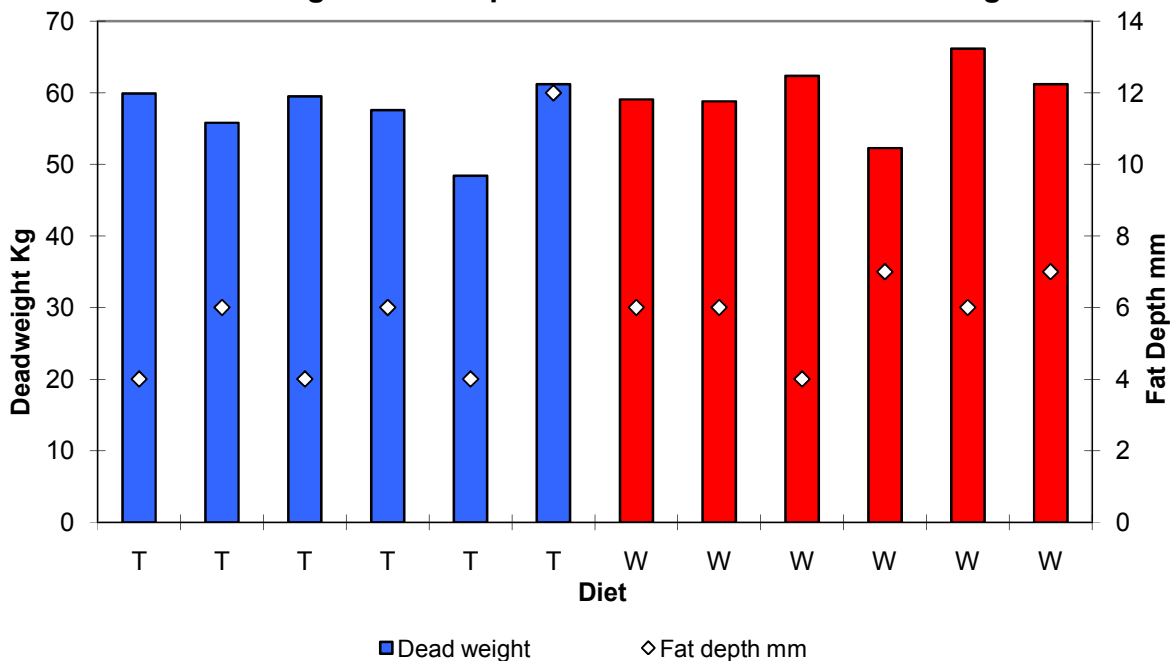
**Average Liveweights for Triticale, Wheat and Control Groups**



All three groups of pigs grew steadily until day 120 at which point many of the pigs had reached slaughter weight, the control pigs were sold on as they were considered too large for home processing. The trial pigs were sold as part of the Sheepdrove box scheme and in the shops. The range of live weights within a farrowing group is important, the smaller the range the better as this gives predictable amounts of meats and sizes of joints.

However some level of difference is acceptable as larger carcasses are used for bacon and smaller ones are cut as joints. This can also be of help to smaller farms who do not wish to slaughter an entire farrowing group at once.

**Deadweight & Fat Depth for Triticale and Wheat Fed Pigs**



## Emissions Per farrowing group – 36 piglets

	MJ	Kg CO2 eq.	
Triticale/Wheat	9536	1126	
Control	19064	2233	
Difference (saving)	9528	<b>1106</b>	<b>kg CO2 eq. per group of 36 pigs</b>

## Economics Per farrowing group – 36 piglets

	Control	Wheat	Triticale
Cost of Concentrate	7182	3591	3591
Loss through loss of Cereal Sales	0	1995.48	2273
Total cost of diet	7182	1595.52	1318
Saving in relation to Control	£0	<b>£399.96</b>	<b>£955</b>

## Discussion

- All pigs finished to acceptable weights within the six month time period allowed for finishing.
- There are considerable economic and ecological savings to be made by feeding both home grown wheat and triticale
- Pig welfare was not compromised in any way by either trial diet.
- Carcass quality was not affected by either trial diet

Triticale is a good alternative feed ingredient for growing pigs;

- It grows well in a British climate
- Gives the opportunity for an extra crop in the rotation and requires no machinery investment as it is so similar to wheat.
- Pigs do not suffer from any anti nutritional factors associated with feeding large quantities of triticale to poultry.
- Neither welfare nor carcass quality are affected.
- The energy and emissions savings are considerable and can help toward lowering the carbon footprint of farms.
- Both the wheat and triticale need a minimal amount of processing to increase digestibility for pigs. Hammer milling with a screen size of 2-3mm or rolling is required this can be done very easily on farm.

The On Farm Feeding, Replacing bought in pig feed with home grown straights project was carried out in association with Sheepdrove Organic Farm and we are very grateful for their help

For more information please contact Rebecca Nelder at  
The Organic Research Centre, Elm Farm  
Hamstead Marshall,  
Newbury,  
Berkshire,  
RG20 0HR

Tel; 01488 658298 [rebecca.n@organicresearchcentre.com](mailto:rebecca.n@organicresearchcentre.com)

**Sheepdrove**



**Organic Farm**

[www.Sheepdrove.com](http://www.Sheepdrove.com)