

# Locally Grown Protein Can Replace Soy in Pig Feed

Point of Production: Finishing

Country of Origin: Finland



Over the last couple of decades, consumer concern about the use of genetically modified (GM) food has grown considerably. Because of this concern, there has been increased need for pig farmers across Europe to find alternative protein sources to the use of GM soy in pig diets, all whilst keeping production costs to a minimum.

## The Solution - Best Practice

Tehri Harjunmaa-Levonen from Harjunmaa Farm in Finland aimed to increase the usage of locally grown protein in pig feed. They found that Faba beans (broad beans) may be an alternative protein source to soybean and so began cultivating faba bean crop approximately eight years ago.

To increase the usage of faba beans in pig feed, they developed a tailored premix together with a local feed company (Rehux) and HKScan. The faba bean inclusion level was approximately 10-12% of the dry matter of the liquid feed. This feed was then given to all the finisher pigs (30-120 kg liveweight). The locally grown protein included barley, wheat, oatmeal, broad bean, liquid barley protein (a by-product of a local distillery). There were two separate diets fed, both based on local proteins, during the finishing stage.

As well as being used as an alternative source of protein, faba bean cultivation can be beneficial to the crop in the next rotation. Faba beans bind to nitrogen and so, can improve the growth of grain crops. Because of this, the farm has increased the area in which they grow faba bean crop (by 150%).

The production costs of pig meat produced with this alternative protein feed can be compared with the standard soybean meal which can be calculated using an Interpig model.

	With soybean meal	Alternative protein feed	% change
Feed (€/kg cold weight)	0,78	0,76	-2,42
Other variable costs (€/kg cold weight)	0,37	0,37	-0,21
Labour (€/kg cold weight)	0,17	0,17	0,00
Finance cost (€/kg cold weight)	0,32	0,31	-3,17
<b>Total costs (€/cold weight)</b>	<b>1,65</b>	<b>1,62</b>	<b>-1,81</b>



Pigs at the feeding trough



## Cost/Benefit Analysis

### Benefits:

- ✓ Feed conversion ratio (FCR) improved from 2.7 to 2.6.
- ✓ Average daily gain (ADG) increased by 9% from 960 to 1050 g/day.
- ✓ Feed costs reduced by 2.4%, this meant a €1.10 saving per pig.
- ✓ The rate of self-sufficiency for protein feedstuffs has increased by 7%, if calculated based on energy content.

### Costs:

- The farmer had to invest in a new mineral dispenser and conveyors.

## Additional Information

Faba beans are richer in lysine but contain less methionine, cysteine, threonine and tryptophan than soybean meal.

The inclusion level of the faba bean in the diet was dependent on the protein levels of the grains.

## Further Research & Project Links

- <https://eupig.eu/>
- Link to technical report
- Contact RPiG (Finland): Ina Toppari

