

# Alternatives to soya bean for fattening broilers

## Background

By 2022 it will become compulsory under EU Regulations (EC) no 889/2008 to provide all organic livestock with feed derived from 100% organic origins. Pig and poultry farming currently relies heavily on imported soya so finding regional alternatives to soya is important. One of the issues to resolve is how to fulfill broiler requirements with local feedstuffs during the fattening phase.

## Solution

Camelina cake, rapeseed expeller and sunflower expeller can be locally produced so their potential as soya cake replacers were evaluated for the broiler finishing phase. This phase is less nutritionally demanding offering a good time to test alternative feedstuffs. The test diet was formulated to contain the same nutrients as the routine finishing feed to fulfil all broiler requirements.

## Benefits

Camelina cake, sunflower expeller and rapeseed expeller are produced by a regional mill, increasing the value of local raw materials, and reducing the need to import soya bean cake. For broiler farmers, feed self-sufficiency is difficult to achieve so local protein sources are advantageous from this point of view. Feed costs did not increase when using alternative protein sources.

## Applicability box

### Theme

Broilers

### Context

West of France, Atlantic climate

### Application time

Year round

### Required time

Feeding manufacture and distribution (can be automatic)

### Period of impact

During last 60 days of broiler fattening period (after 60 days of rearing).

### Equipment

Feeding equipment required will depend on whether the feed is mixed on farm, as part of a cooperative with shared machinery, or at a local mill

### Best in

Regions with similar climatic conditions where suitable alternatives to soya beans are grown

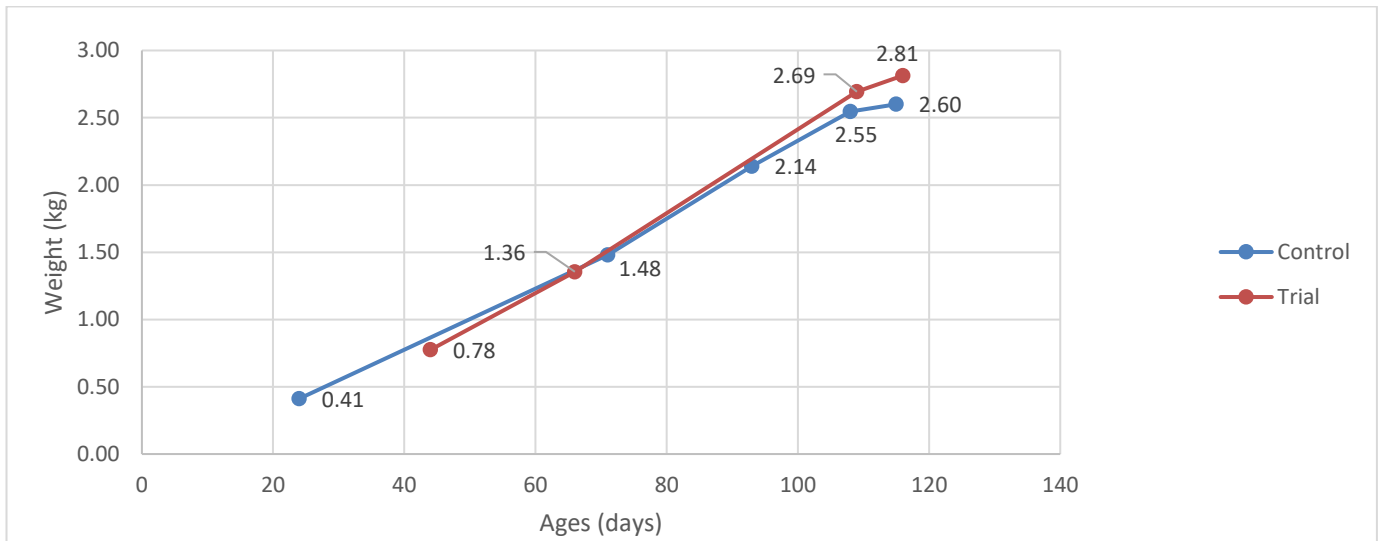
## Practical recommendation

- Analysis (table 1) showed that the alternative feedstuffs, camelina cake, sunflower expeller and rapeseed expeller, all met the expected protein and fat content, so the finishing feed is well formulated. Crude protein content for each sample is at recommended levels, fulfilling broiler requirement during the finishing phase.

Feedstuffs	Moisture content (%)	Tables (ITAB)	Crude protein (%)	Tables (ITAB)	Fat (%)	Tables (ITAB)
Rapeseed expeller	12,78	9,8	27,25	30,2	12,37	13,5
Camelina cake	10,61	9,9	33,1	33,2	11,34	14,5
Sunflower expeller	9,36	11,3	26,92	27,7	15,59	14,7

**Table 1: Nutritional analysis of feedstuffs compared to tables from ITAB.**

- Control and trial groups had similar growth rates (figure 1), with no significant difference between them. The trial group birds did have a slightly higher finishing weight compared to the control group.



**Figure 1 : weight increase of broilers fed soya cake (control) or soya alternatives (trial)**

- The trial bird weight is compatible with direct-selling demand. The diet did not affect bird aggression levels with low levels of injury and no difference between groups.
- The farmer noticed that birds from the trial group looked better, with skin more yellow, than birds in the control group. He was very satisfied with the outcomes of this trial and he wants to continue with finishing feed without soya bean cake.
- In conclusion, it is possible to finish broilers without the use of soya bean cake and have good performances and bird quality. The use of local raw materials has allowed soya bean cake to be replaced at no extra cost.



**Broilers feeding during the trial. Photo: ITAB.**

## Further information

### Video

- Check the video "[Alternative of soya bean for fattening broilers](#)"

### Further reading

Crawley, K., Van Krimpe, M. (2015): ICOPP Technical note 1: Fulfilling 100% organic poultry diets: Concentrates (Organic Research Centre, UK and Wageningen University, NL). Available [here](#).

Roinsard, A., Bordeaux, C., Lubac, S., Juin, H., Bourin, M. (2015): Cahier d'alimentation des volailles biologiques (ITAB, IBB, INRAE, ITAVI, CA). Available [here](#).

### Weblinks

- Check the [Organic Farm Knowledge platform](#) for more practical recommendations.
- [AVIALIM Bio](#) : tools to guide 100% organic feeding transition.
- [SECALIBIO](#) : secure organic monogastric feeding systems.

## About this practice abstract and OK-Net EcoFeed

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**OK-Net EcoFeed:** This practice abstract was elaborated in the Organic Knowledge Network on Monogastric Animal Feed project. The project is running from January 2018 to December 2020. The overall aim of OK-Net EcoFeed is to help farmers, breeders and the organic feed processing industry in achieving the goal of 100% use of organic and regional feed for monogastrics.

**Project website:** [ok-net-ecofeed.eu](http://ok-net-ecofeed.eu)

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