

# Sprouted wheat and vetch seeds as a green feed for poultry

## Problem

It is a requirement of organic regulations for organic birds to have access to a range. Under some circumstances such as drought, snow or veterinary lockdown green forage is not available. A mixture of sprouted seeds can be used as a green feed with nutritional benefits. Vetches are a pulse crop commonly grown as a forage. They have a similar protein quality to beans but also contain antinutritional factors and toxins which limit inclusion in rations when untreated.

## Solution

An on-farm sprouter was developed to produce a consistent crop using equipment available on farm. Wheat and vetch seeds were then sprouted, and samples tested for feed value including amino acid profiles. Trypsin inhibitor activity (TIA) was also assessed in the vetches to assess change in antinutritional factors. Sprouted seeds were then fed to layers to assess interest.

## Benefits

There is little data available for feed value of sprouts as animal feed. The addition of sprouted seeds to the ration could improve utilisation of available feedstuffs. Sprouting triggers the breakdown of antinutritional factors in pulses increasing protein in the diet and provides the benefits of a green feed.

## Practical recommendation

- Initial phases of the sprouter produced uneven germination and a mouldy product. Following adaptations, the final sprouter incorporated spray nozzles, UV lights and a fan to control humidity (Figure 1) which resulted in consistent germination and product.
- Samples of wheat and vetch from days 1, 3 and 5 were sent to an independent laboratory where they were tested for nutritional value, amino acid contents and TIA (vetch only).

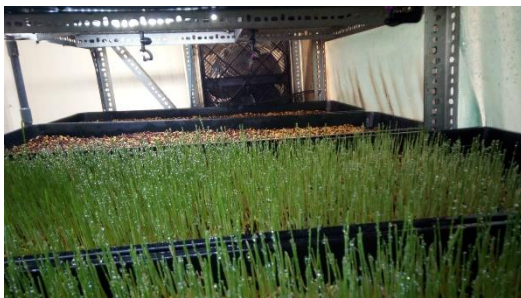


Figure 1 Sprouter equipment photo M Mallett

## Applicability box

### Theme

Pigs, Broilers, Layers, Feeding and ration planning, Processing and handling of harvested feed

### Context

No limits

### Application time

Possible all year round

### Required time

Treatment takes 3 days

### Period of impact

Feed becomes available immediately after treatment, will need repeat production.

### Equipment

Simple sprouter systems can be developed for on farm use.

### Best in

Pigs, layers

The results for wheat (Figure 2) and for vetches (Figure 3) demonstrate that there is no loss of nutritional value due to sprouting although starch is converted into sugars during the process. Feed value starts to drop at day 5.

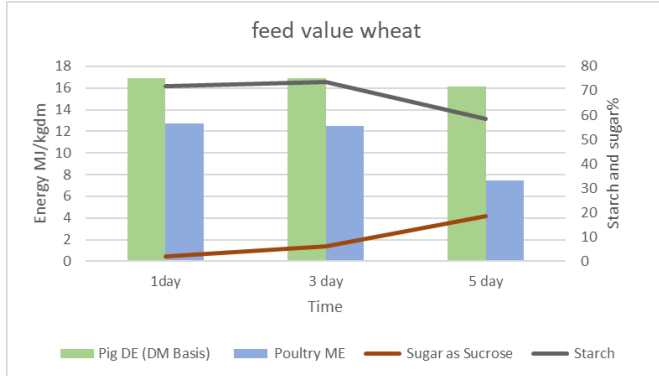


Figure 2: Feed value of wheat following sprouting

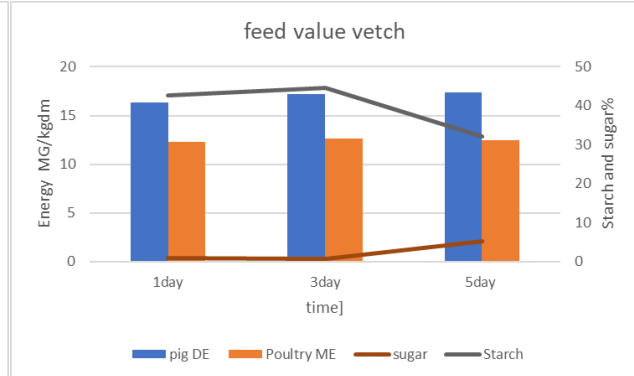


Figure 3: Feed value of vetch following sprouting

Crude protein and amino acid profiles do not change with sprouting (Figures 4 and 5).

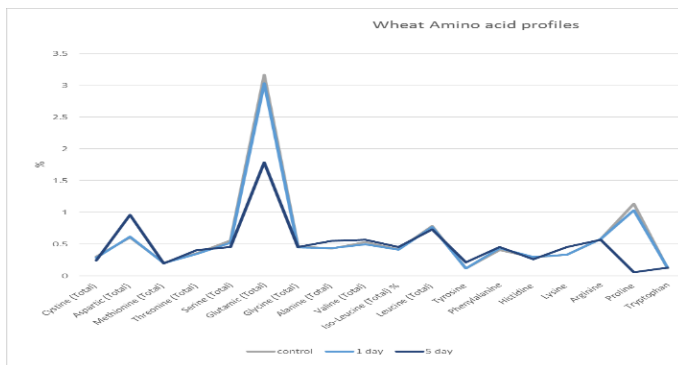


Figure 4: Amino acid profile of wheat

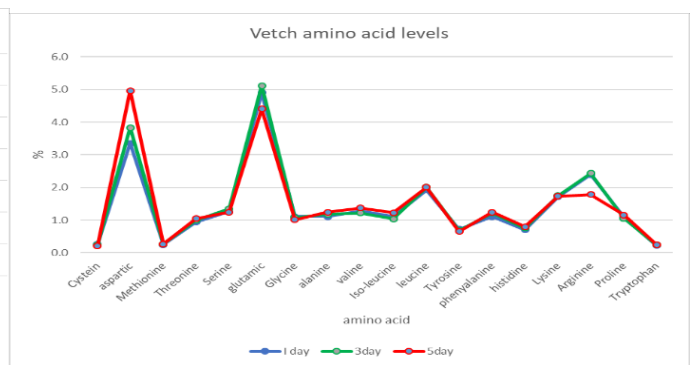


Figure 5: Amino acid profile of vetch

There was a small reduction in TIA activity from 1.4 to 1.3 mg/gram on day 5 which is consistent with the slow germination of the vetch seeds compared to wheat.

- Intake of sprouts was good even while the flock had access to their silvopasture range. There was a preference for vetch sprouts.
- A sequential sowing system could be used to manage the germination times of different species to create a mixed feed of sprouted seeds.

### Further information

#### Video

- Check the video "[The potential for sprouted seeds to supply feed for laying hens](#)"

#### Further reading

- Trial report on the [Innovative Farmers website](#)
- Tate, M., Enneking D., (2006) Common vetch (*Vicia sativa* ssp. *sativa*): feed or future food? In Grain Legumes No. 47 p11-21. AEP, Paris.

#### Weblinks

- Check the [Organic Farm Knowledge](#) platform for more practical recommendations.



## 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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