

## 00-Rapeseed in Pig Nutrition

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Until recently, the use of either 0-rapeseed oil meal or 0-rapeseed presscake was very limited in pigs' diets, basically due to the relatively high glucosinolate content (80 - 150  $\mu\text{mol/g}$ ) of 0-rapeseed varieties. With the introduction of low glucosinolate 00-varieties (< 35  $\mu\text{mol/g}$ ) the feeding recommendations presently valid for piglets and fattening pigs have to be revised.

Within the scope of the rapeseed project in which the Research Station for Animal Production has been involved in for some time, 00-rapeseed oil meal and 00-rapeseed presscake of domestic origin became available for the first time in sufficient quantities in 1990/91 for feeding trials with pigs. The following questions were of prime importance:

- what is the feeding limit of 00-rapeseed in the diet of piglets and fattening pigs?
- is there a difference between 00-rapeseed oil meal and 00-rapeseed presscake with respect to animal performance?
- does a heat-and-steam treatment of 00-rapeseed presscake (approx. 103 °C, 1 hour, with addition of steam and water) reduce glucosinolate content as well as the negative side effects on organs such as thyroid gland, liver and kidneys?
- does soup-feeding of 00-rapeseed products impair the fattening performance?

## Results

### Heat-and-steam treatment of 00-rapeseed presscake:

The heat-and-steam treatment of 00-rapeseed presscake reduced glucosinolate content from 29 to 16  $\mu\text{mol/g}$ .

### Feeding trials with rearing piglets:

Up to a level of 15 % of 00-rapeseed meal, no negative effects were observed on the ad libitum feed intake of piglets. Performance of piglets fed 10 % of 00-rapeseed products was comparable to control animals. Heat-and-steam treatment of 00-rapeseed presscake improved palatability of the feed and, as a consequence, feed intake (+ 11 %) and growth rate (+ 16.6 %) were raised compared to animals fed untreated 00-rapeseed presscake.

### Feeding trials with fattening pigs:

The side effects of the examined organs (thyroid gland, liver, kidney) are consistent between trials. A reduction of total glucosinolate content also lessens the risk of organ enlargements through the action of toxic metabolites. The feeding level of 15 % of 00-rapeseed products (fed as pellets or soup) did not impair growth performance of fattening pigs in these trials. However, in earlier trials with the cultivar Liradonna, the inclusion rate of 15 % of 00-rapeseed presscake retarded growth by 4 % (growth rate for the weight range 25 - 100 kg LW), although the glucosinolate content of 19.2  $\mu\text{mol/g}$  was absolutely comparable to above contents (29 and 16  $\mu\text{mol/g}$ ). Therefore, further plant compounds must be taken into consideration for the assessment of feeding limits of rapeseed products in pigs' diets.

## Conclusions

For practical purposes and taking into account a certain safety span to avoid any negative effects, a feeding limit of 10 % of 00-rapeseed products - dry or wet - is recommended for fattening pigs. For piglets, we recommend a feeding limit of 5 %. Following a heat-and-steam treatment, the inclusion rate of 00-rapeseed products may be raised to 15 % (fattening pigs) and 10 % (piglets), respectively.