

# The Use of Rapeseed Meals in Animal Diets

## Some Recent Research in the U.K.

R. Hill

The Royal Veterinary College, Boltons Park,  
Potters Bar, Herts. EN6 1NB

Work is in progress in the U.K. on a number of aspects of the use of rape seed and its products in animal diets. Brief comment is made here on results obtained recently at The Royal Veterinary College, and other studies are listed.

Factors influencing the palatability of extracted rapeseed meal (RSM) for growing pigs and calves have been studied. A concentrate mix of low glucosinolate content was more palatable than one of high glucosinolate content: this was true whether the low level of glucosinolate was obtained by using a small amount of a high-glucosinolate meal, or a meal prepared from seed of a low-glucosinolate variety, or a water extracted high-glucosinolate meal. The results suggest that a major factor influencing the palatability of RSM was its glucosinolate content.

It is evident from the above observations and many others, that meals from seed of low-glucosinolate varieties of rape are superior to those from seed of high-glucosinolate varieties. However, it is proving extremely difficult to produce a low-glucosinolate winter-sown variety that is economically acceptable for most of Europe, and therefore further work is justified on the use of high-glucosinolate rapeseed meals.

In rearing cattle, the maximum rate of gain is often neither required nor desirable, and it has been shown that for a daily gain of 0.50 to 0.66 kg in newly weaned calves and 1.0 kg in yearlings, the protein supplement in the concentrate mix can be solely high-glucosinolate RSM. For dairy cows, the recommended maximum level in concentrate feed of high glucosinolate RSM is 10%, but it is not clear exactly why 15%, or even 20% should not be used. Is it because it is not eaten sufficiently rapidly in the parlour by high-yielding cows, or it depresses milk yield, or adversely affects the composition of milk, or because the iodine content of the milk is unacceptably depressed or the thiocyanate content is unacceptably too high? Further information on the possible effects when 15 or 20% high-glucosinolate

RSM is included in dairy concentrate feed is needed. Reproductive efficiency may also be affected by RSM: no experiments have so far been continued over a sufficiently long period to answer this question. Preliminary results of an experiment in progress in Sweden using low-glucosinolate meal suggests there may be an adverse effect on reproduction, but observations here with heifers and ewes given high-glucosinolate meal, do not show any ill-effect. In these experiments heifers were given a concentrate mix with RSM as the sole protein supplement for three months before service, and ewes were given a concentrate mix containing 20% RSM from three weeks before tugging, through pregnancy and lactation. It is clearly desirable to continue these experiments over longer periods.

Other studies being carried out in the U.K. are given for reference:

- i — The use of steam treated-high glucosinolate meal for growing pigs.  
Dr. V. Fowler, Rowett Research Institute, Aberdeen.
- ii — Factors influencing the incidence of liver haemorrhage in poultry given RSM.  
Dr. D. Shannon, Poultry Research Centre, Edinburgh.
- iii — The hydrogenation and digestion of rape oil, given as a whole seed, to ruminants.  
Dr. S. Pallister, The University, Newcastle-upon-Tyne.
- iv — The digestion of protein of RSM and the absorption of amino acids in growing pigs.  
Dr. I. Partridge, Animal and Grasslands Research Institute, Reading.

Extracted rapeseed meal is by far the commonest product available for animal feed from rape seed and has been used in almost all animal studies. However, Expeller rapeseed meal, containing about 50% of the oil originally present in the seed is sometimes available: this is potentially a valuable feed for certain purposes and warrants investigation.