



National Diploma Animal Production

Livestock Production Part 5

Handout 8

Table of Concentrates

Following Concentrates Are Available	
Barley	On its own or together with another small grain barley it can replace up to 70% maize, provided it is of a good quality.
Blood meal	This is a good source of protein. Palatability can be a problem, especially when it is given together with meat meal (tankage).
Bone meal	This comprises bones that have been cooked, dried and ground and it is primarily given as a source of calcium and phosphorus. It is also a good source of trace elements.
Brewer's grains (barley)	This is the residue after the brewing of Lager beer and is a mixture of barley, maize and brewer's yeast. The product is very tasty, and it is also safe to use it.
Chicken manure	Two types are available - manure obtained from laying hens and from broilers. As a rule, the manure obtained from laying hens does not contain bedding and it has a higher protein content than manure obtained from broilers, which contains bedding, like sawdust and paper. Chicken manure is most suitable when used in rations of growing animals older than 6 - 9 months of age. Vaccinate all animals against botulism before using manure.
Grain sorghum	It is recommended that grain sorghum should be crushed in a roller mill because it is crushed too fine in a hammermill. The dustiness will make it less palatable. In theory it can replace maize.
Fish meal	This is a good source of protein. Palatability could be a problem when animals are not used to it.
Groundnuts	In cases where the levels of inclusion are too high, diarrhoea and a decrease in the butter fat percentage and protein are found.

Groundnut oil cake meal	It is high in protein and palatable, but there is a large risk of aflatoxin.
Lupine seed	It is relatively rich in protein and high in energy.
Maize	Yellow as well as white maize is suitable as fodder, with the best results when it is coarsely ground or rolled. The high starch content limits the daily portioning.
Meat meal (tankage)	Meat meal has a high percentage of protein, but palatability could be a problem, especially when it is used together with blood meal.
Oats	It has high fibre content but is very palatable and can replace maize in young animals.
Soybeans	It is high in protein and energy as a result of a high fat content. It is not recommended for inclusion in rations for calves and dairy cows and which also contain urea.
Sunflower seed	As a result of the high oil content the seed has a high energy potential, but protein is relatively low. It could lower the butterfat and protein in milk and could also cause diarrhoea in cases of high inclusion levels.
Triticale	The energy and the protein levels are about the same as in wheat.
Urea	Urea is not actually a source of protein, as it is in fact a concentrated form of nitrogen. Microbes in the rumen can use it to build up microbe-protein. Urea is very quickly catabolised into ammonia in the rumen and too much urea could cause so much ammonia to come into the bloodstream that the animal could die from it. The use of urea in rationing for animals on tame pasture is not usually recommended.
Wheat	The energy value of wheat is slightly less than that of maize. In cases of high intake acidosis occurs sooner than is the case with maize.

Wheat bran	It is relatively low in energy with about 14 per cent protein and it is also high in phosphate.
-------------------	---