

## Feeding ewes in late pregnancy

One of the most important components in any sheep production system is nutrition. Other important components, such as, good genetic potential, fertility and other aspects of management, will be of reduced benefit if the feeding of the ewe is incorrect.

Feeding during late pregnancy influences ewe mortality, lambing difficulty, mothering ability, lamb viability and subsequent lamb growth rates. As a result feeding regimes merit attention in detail.

### Feed requirements in late pregnancy

During the last two months of pregnancy feeding levels must be stepped up to meet the needs of the rapidly developing foetuses. At lambing, ewes carrying twins should be at least 15% heavier than their mating weight. This gain in weight is due to the development of the foetus and its membranes, while at the same time the ewe herself will have lost maternal tissue during pregnancy to sustain the growth of the foetuses.

Chop length will also have a major effect on the quantity of silage eaten. Ewes, unlike beef cattle, will eat approximately 30% more precision chopped silage compared with flail chopped silage. With precision chop silage the performance of ewes will be substantially improved and concentrate supplementation reduced accordingly. Unchopped big bale silage will also have lower intake characteristics and thus require extra supplementation.

### Forage quality

The correct level of concentrate supplementation depends upon forage quality. Hence an accurate assessment of forage quality plays an important role in planning the feeding regime.

The nutritive value of silage is largely dependent on the stage of maturity of the grass harvested. For example, ewes fed high quality leafy silage will require less concentrate in late pregnancy (Table 1).

Sheep are very sensitive to the fermentation quality of silage. They will not eat sufficient quantities of badly fermented silage to meet their needs in late pregnancy.

An accurate assessment of the intake potential of your silage and a prediction of the level of concentrate feeding required to meet energy requirements of the ewe in late pregnancy is essential.

**Table 1. Total concentrate requirements during the last two months of pregnancy for a twin bearing Greyface ewe (ARINI, Hillsborough).**

	Silage quality		
	High (Intake potential above 80)	Medium <sup>(1)</sup> (Intake potential 65-75)	Low (Intake potential below 65)
	<b>Concentrate required/ewe (kg) <sup>(2)</sup></b>		
Precision-chop silage	5	10	18
Flail-chop silage	10	18	28

(1) Typical silage analysis: DM % 20: CP %DM 14: ME (MJ/kgDM) 10.8

(2) Concentrate costing £140 per tonne. Potential cost saving of £3.20 per ewe by feeding high quality precision chopped silage rather than flail chop silage of low intake potential.

## Type and form of concentrate fed

Concentrates are made up of energy (generally cereals and beet pulps) and protein sources together with minerals and vitamins.

Optimum protein in the ewe's diet ensures ample colostrum and well-developed lambs with adequate brown fat reserves to keep out the cold. While it is well established that protein sources of low degradability are required in the diet (for example, soyabean and fishmeal), there is a lack of information on the optimum levels of supplementation in ewe diets on which to base reliable feeding regimes for our industry. Further work in this area has been initiated at the Agricultural Research Institute Hillsborough.

Barley and wheat may be fed processed (rolled or ground) or fed as whole grain. On hay based diets feeding whole grain is the preferred option due to the savings in processing costs, the beneficial effects on digestion and the minimal amount of whole grain loss. On the other hand it has been clearly demonstrated with lower dry matter silage based diets that an excessive proportion of the whole grain is lost, passing through the animal undigested. On silage based diets it is therefore recommended that grain fed to sheep be either rolled or ground.

## Feed blocks

High energy feed blocks can be a convenient, palatable source of energy and minerals particularly in upland areas where grass is scarce and/or of low quality. These are labour saving and can provide a beneficial source of energy and protein in the run up to lambing. Feed blocks tend to be expensive per unit energy or protein compared with meal and there may be a large variation in the amount each ewe consumes.

## Frequency of concentrate feeding

Recent studies at Hillsborough have shown that where 0.4kg of concentrate or more is fed per ewe per day it is beneficial to split the concentrate into two equal feeds. This improves the energy status of the ewe reducing the risk of twin lamb disease. Moving from once to twice a day feeding increased silage intake by approximately 20%. There was no advantage in increasing from twice to three times feeding per day.

Mixing concentrates with the silage increased silage intake by a further 15%.

## Pattern of meal feeding

Most feeding practices follow a step rate basis in line with the pattern of foetal growth in late pregnancy. However, work has shown that flat rate feeding can be just as satisfactory as one in which the quantity of concentrates is given in an ascending pattern. Indeed arguments can be advanced for using a flat rate system of feeding concentrate. Such a system avoids the very high level of concentrate intake in the final week of pregnancy, which can easily lead to acidosis, resulting in poor appetite and the risk of twin lamb disease. As pregnancy progresses flat rate feeding causes a gradual transition from positive to negative nutrient balance in the ewe, and in doing so enables her to adapt to deficits in specific nutrients, which may occur during early lactation.

## Clipping ewes

Clipping of housed ewes in late pregnancy increases appetite and relieves heat stress resulting in the production of heavier lambs. It is generally found that heavier lambs survive better at birth and grow faster. Clipping also increases the stock holding capacity of a building by about 20%. Ewes at Hillsborough are normally housed and clipped 6 to 12 weeks before lambing. Ewes housed for shorter periods should not be clipped due to the risk of exposure resulting from insufficient wool growth by turnout. Clipping allows ewe condition to be easily monitored and avoids the problem of wool blocking slats. Handling clipped ewes in late pregnancy has not given rise to problems and no ill effects on ewes after turnout have been found.

## Summary

Management of the ewe in the last six to eight weeks before lambing is critical as 75% of foetal growth occurs during this time, substantially increasing the ewe's nutrient requirement. The level of concentrates fed will depend on the type and quality of the roughage, and on the expected litter size. Silage fed to ewes should be well fermented and have a high ME leading to a significant reduction in the amount of concentrates

**required.** Body condition scoring before tupping ensures that all ewes can be managed to achieve a body score of 3 at tupping improving conception rate and reducing the risk of lambing difficulty. **Body scoring 6 to 8 weeks before lambing identifies thin ewes (Body score less than 2), which can then be fed extra concentrates.**

Body scoring is therefore a useful management tool helping, in particular, to minimise the risk of twin lamb disease.

**Adequate protein levels are also important in late pregnancy to ensure ample colostrum.**

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