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Forage Management for Low Cost Sheep Production

More efficient use of our cheapest resource, grazed grass - research work done at SAC and other centres was reviewed to identify where the cost of production could be cut.

Reducing the cost of lamb finishing

Technically, lamb can be produced using less resources if they remain on-farm for as short a period as possible, reducing the maintenance costs.

In the past rising prices in the November to April period encouraged farmers to be relaxed about the disposal of lambs, with many lambs being held back until the price was right. This strategy now appears too risky, with competition coming from New Zealand chilled lamb at home and younger, tagged, French lamb in our market. In order to move lambs off the farm cheaply and quickly, the following tactics are recommended:

- maintenance of short, leafy swards (4-6cm) with high intake characteristics and high nutritional value, encouraging maximum leaf growth,
- reliance on clover which gives better lamb performance in mid to late summer,
- avoidance of worm challenge, rather than relying on dosing,
- use of high genetic merit rams
- where appropriate supplementation with cheap cereals,
- avoiding weaning stress which lowers immunity to worm challenge resulting in infection and delayed finishing

Clearly if more farmers move to rapid finishing of lambs the market oversupply will be worse at the peak grass finishing period. However, the grass grazing season varies considerably throughout the UK and a range of lambing dates from December to May is possible. Early lambing dates are associated with smaller flocks of 100-200 ewes on more intensive farms and in early grass-growing areas. Spring lambing suits a medium sized flock of 200-800 ewes which is typically housed. May lambing (outdoors) provides economies of labour and reduced fixed costs and is suitable for large flocks of 600 ewes or over. Reduced concentrate input is specifically recommended for organic farms where concentrates are expensive and spring grass growth is later because no N is used.

Reliance on clover for both traditional and organic sheep farming

Clover can increase lamb gain and replace fertiliser nitrogen, but the latter is very much dependent on the amount of clover present in the sward. Sheep select for clover in their diet so that at 5% of clover in the sward dry matter (10% ground cover), which is typical of the content on many farms using moderate levels of nitrogen, there will be a rise in daily gain of 50g/day over grass only swards. The amount of clover in the sward determines the amount of N fixation which, in a wet year, sets the overall level of dry matter production per hectare and hence the stocking rate. As a rough guide, an average over the season of 20% clover in the sward dry matter (50-70% ground cover in mid-summer) is a good target to aim for. Here the overall yield will be aground 10 tonnes of dry matter per hectare in total, with a clover component of 2 t DM/ha/ year, enough to ensure up to 200 kg/N hectare. This results in enough grass to produce high quality feed to finish around 25 lambs per hectare (10 lambs/acre). This level of production, which is not far from that achieved by many conventional farmers using nitrogen, is a good target for lowland/upland organic farms, but will only be achieved where the

right varieties of grass and clover are present in the sward management is directed at clover production and rapid lamb finishing.

Depending on clover for nitrogen results in a delay in spring grass growth. Typically, it is 2-3 weeks later, which can be critical. Lambing should be delayed on organic farms until late April/early May until grass is available and on conventional farm, only part of the farm should be devoted to clover dependant pastures.

Work done over eight years at SAC attempted to identify compatible grass/clover varieties, the effects of clover in the sward on animal performance, and the management needed to sustain it. To maximise the potential clover content of the sward, a late heading tetraploid was sown as this has a lower tiller density than conventional diploids and leads to a high clover content. Highly palatable high yielding varieties should be used with enhanced water soluble carbohydrate content which grazing animals prefer. A small leaved variety of clover e.g. S184 was used as, under the hard grazing systems farmers prefer, small-leaved clovers which are more persistent than medium leaved varieties under sheep grazing.

As a result of this work, commercial seed mixtures have been developed. Typically, they contain two or more late/intermediate heading tetraploid varieties totaling 30-34kg/hectare and 2kg of small leaved clover. These mixtures are specialised grazing mixtures designed to finish lambs or for cattle grazing mixtures designed to finish lambs as well as cattle grazing. If mixtures are also to be used for cutting for hay or silage, at least half of the clover should be of a medium-leaved variety.

Pasture establishment and maintenance

Most farmers wishing to rely on clover can achieve a clover content of pastures of 5-10% through management changes (e.g. reduction of nitrogen usage, correction of P and K deficiency, oversowing with clover and hard grazing). However to obtain the long-term sustainable benefits of clover dependent systems which accommodate stocking rates of 10-15 ewes per hectare (5-6 ewes per acre) a specialist mixture should be sown on pastures requiring reseeding. The following management points are relevant to reseeding for sustainable pastures.

- choose south-facing fields
- direct sow in spring for best results (e.g. during the set-aside period). An excellent clover content can be achieved by July after an April reseed, although of course the grazing season is limited and a full stocking rate will only be possible the following year,
- correct pH to 6.0-6.3 and ensure adequate P and K levels. 90kg/hectare of each will be needed on soils of moderate P and K status.
- omit N for direct sowing unless after cereals, when 40kg/hectare is needed.
- expensive clover-safe weed control herbicides may be needed to control chickweed.

During establishment it is important to graze the crop periodically with a high stocking density to suppress weeds (short defoliation period to achieve 4-6 cm of sward height within 3 days). once established, swards should be grazed down to 4 cm in spring/summer and will benefit from a rest from August, when most lambs will be finished, through to October when pastures can be used to flush ewes. Sward heights of 3cm in December should be achieved to prevent winter kill and to bury clover stolons. Any winter proud growth should be grazed down in late January. Preferably no fertiliser N should be used but a spring application of up to 40kg N/hectare can be used on the swards with a well-established clover content on conventional farms in a late year.

Swards for cattle can support 2500kg/liveweight/hectare in May/June and half this level in mid to late summer. Bloat is a risk in cattle, but the risk can be predicted and minimised by feeding a dry feed such as barley straw from about 2-3 days prior to turning cattle into high clover swards. Bloat is not a risk for sheep. Every three years pH, P and K status should be checked, 30 kg/hectare of P and K is required annually for maintenance.

In conclusion, clover-based swards can be a vital component of production systems aimed at reducing lamb production costs and minimising their time spent in the farm. The reseeding of pastures with special mixtures to provide a specific lamb finishing pastures on part of the farm (particularly non-cuttable areas) is long term sustainable pastures are to be produced.

This is not a cheap option due to the high initial costs of establishment and seed costs. For organic farmers this could be a wise investment.

Based on an article by John Vipond of the SAC (Scottish Agricultural Colleges) in Forage Matters

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