AHDB BEEF & LAMB

Event report

January 2016

Better Returns Programme

BRP+ and AHDB Dairy Grass Silage Workshop

Marshall Waller, Blaze Farm, Cheshire

Dave Davies visited Blaze Farm in early January for a workshop focusing assessing silage stocks from 2015 and identifying improvements for 2016. The group went through the basics of silage making and ways to reduce losses and in turn bought-in feed bills. Dave highlighted to delegates that a lot of money is being wasted through poor silage management, one farm he worked with calculated that they were losing over £18,000 per year through visible silage losses.

Silage overview

Marshall Waller, owner of Blaze Farm, makes clamp silage for the dairy cows and big bales are fed to sheep. All the silage fields are shut up following early sheep grazing, with the first cut taken on 24 June after six weeks of growth. Seven weeks of growth is allowed before the second cut, which is laid on top of the first in the clamp, and big bales are made at a similar time to the second cut.

Testing clamp silage

Marshall tested the silage twice this year, once with a spear before it was opened and again from the feed face as the silage began to be fed out. During the workshop, Dave used a hand-held NIRS probe to sample from the top of the clamp, which consisted mainly of second cut. The results are displayed below.

Analysis Method	Metabolisable Energy (ME) (ME/kg DM)	Crude Protein (CP) (%)
Spear sample	9.9	15.5
Feed face sample	11.5	15.4
NIRS probe sample	10.0	15.2

Table 1: Clamp silage analysis using different methods

There was quite a difference in energy results. Dave said that he prefers to use feed face samples as it is representative of what the animals are eating and the spear sample may be inaccurate as it could have contained a greater proportion of the second cut, which lowered the quality of the sample.

The analysis that Dave took during the workshop were similar to Marshall's and showed consistency between the different analysis methods.

Dave emphasised the value of visually assessing the sample and sending it off for independent analysis (see page 12 of BRP manual Making Grass Silage for Better Returns).

Silage clamp density

Dave measured the density across the clamp, taking samples from the bottom and top (see page 14 of the grass silage manual for guidance) and the results are displayed in Table 2.

Area of clamp sampled	Density kg Fresh Weight (FW) per m^3
Bottom	890
Top	760

Table 2: Density analysis of clamp silage

The target density for clamp silage is 750 kg FW/m^3 so these results are very good. Dave commented that research has shown that clamp silages with a density of 500 kg FW/m^3 had around 20% visible losses, compared to 10% for clamp silages at 750 kg FW/m^3.

If producers are experiencing problems with heating on the face, he said it would be worth measuring silage density, as it is likely to be the problem. To ensure good consolidation, when forming the clamp, it is important that layers of grass are no greater than 20 cm in depth (see page 11 of the grass silage manual)

Clamp temperature

Dave measured the temperature of the clamp at three depths, readings are shown in Table 3. The outside temperature on the day was recorded as 7.5 °C.

Sample taken	Temperature (°C)
Feed face	8.7
10cm deep	14.0
50cm deep	17.0

Table 3: Temperature measurements of silage clamp

Temperature gradient within a silage clamp is important. If a gradient such as that seen in Marshall's silage is not present then it would indicate poor aerobic stability within the clamp. Dave said that the best way to measure silage temperature is to use probes rather than thermal imaging cameras, as the temperature gradient needs to be identified rather than just the temperature of the face.

Clamp management

Marshall explained that he aims to manage the feed face of the clamp silage in a straight and tidy manner. This ensures the amount of aerobic spoilage is kept to a minimum. He has experienced minor problems with secondary fermentation (areas of mould), but generally has suffered minimal losses. Dave said that the early sheep grazing was advantageous because it reduced the amount of dead material in the cut, which does reduce the risk of secondary fermentation.

Additive use

The group discussed the pros and cons of using additives (see p.9 of the BRP grass silage manual or the AHDB Dairy booklet on silage additives). Dave suggested that if they are going to be used, then products that have undergone significant trial work and indicate improved benefits should be selected. Marshall hadn't used additives on either cuts or the bales. Dave recommended that Marshall use a homofermentative bacterial inoculant on his second cut in 2016 to achieve over one million bacteria per gram of fresh material, as the analysis of his silage suggested that the fermentation could have been improved. As there were no issues with aerobic stability, he would not recommend the use heterofermentative inoculants as they can reduce feed quality and intake.

Big bale silage

The group moved on to look at one of the big bales, which had four layers of wrap. Some mould was identified and this could have been due to the grass being mature and drier. The more mature the crop, the greater the risk of infection with moulds while in the field, which in turn is brought into the bale. More oxygen is trapped when 'stemmy' material is baled, which increases the risk of poor fermentation. It was highlighted that, for sheep, the material needed to be of higher quality to reduce the concentrate requirements.

More information can be found in the BRP manual Making Grass Silage for Better Returns