

This is a preliminary report on the AHDB Beef & Lamb-funded silage clamp survey conducted by Dave Davies of Silage Solutions Ltd.

In January, 20 farms were visited and a detailed assessment made of their open silage clamp face. A number of attributes were assessed during each visit, including a detailed assessment of nine sampling points across the clamp face. These points were located at three depths (top, middle and bottom) across three points along the clamp face. At each point, a number of analyses were conducted including temperature at the three depths, silage density and silage chemical and nutritional analysis. The aims of the study were to gain a better understanding of parameters affecting silage quality on English farms, to estimate silage dry matter (DM) losses and to understand the variability both within a clamp and also between farms.



Full analysis is still to be carried out, however some interesting facts can be drawn so far:

- The average volume of the clamps was 935m³
- Seven of the 20 clamps were finished with a dome shape while the remaining 13 were more or less flat on top.
- Four of the 20 contained a single cut of grass, 14 had two different cuts of grass and two had a cereal silage sandwiched between two different cuts of grass
- Eight were indoor and 12 outdoor
- One was self-feed, 14 used a shear grab or similar and five used a bucket feed-out system.

Results

The preliminary results showed big variations in physical and chemical factors, both within each farm clamp and between farms. For example, from the first ten farms visited, the mean DM content of all 90 samples analysed was 32.2%, with a minimum of 18.5% and a maximum of 56.3%.

At farm level, most had a greater than a 10% difference in DM between the nine samples taken. The farm with least variation ranged from 22.1 to 25.3% DM and the farm with most variation ranged 25.6 to 56.3% DM, both of these farms had two cuts of grass in the same clamp. However, even a farm with a single cut of grass had a DM variation from 29.2 to 44.6%, indicating that it is not just different cuts that are responsible for this variability.

Taking the average dimensions, 26.2% of the volume of silage in the average clamp is within 0.5m of the wall or top sheet. This is the region of the clamp where the poorest management and greatest vulnerability to losses are generally observed.

Temperature

Temperature is a very important factor when it comes to silage quality, but the correct temperature is not easy to define because it is affected by a number of variables. The differences between temperatures at different depths in the silage clamp is much more informative. Over the three depths measured, the highest temperature was 49.1°C with the average of all samples being 15.5°C and the minimum 4.6°C. This data needs further analysis, but suffice to say a temperature of 49°C is not good.

Silage density

There was a high degree of variability in silage density, both within a single farm clamp and between clamps on different farms. The average density of all samples was 613kg fresh weight (FW) per m³, which appears good. However, the lowest density was 53.8kg FW/m³, which is poor. 20% of samples were less than 400kg FW/m³ with 33% were less than 500kg FW/m³. These values are all below the target silage density of around 600kg FW/m³ (depending on the crop).

Further analysis of the whole dataset will enable both scientific conclusions and practical management factors to be drawn that will help gain a better understanding of how to manage silage clamps to enable more cost and feed-efficient silage to be made.



We would like to thank all the farms that participated and for the help and openness when completing the survey. Results from this work will hopefully not only benefit their business, but all silage producers in England.

More information can be found in the BRP manual [Making Grass Silage for Better Returns](#) and [Growing and Feeding Maize Silage for Better Returns](#)