South West Dairy Focus Group - Forage Quality Notes

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The South West Dairy Focus Group is a group of dairy producers based in South West Scotland with a common desire to improve business profitability through improved animal health and productivity.

Group 1st Cut Silage Analysis

	1	3	5	6	7	9	10	13	14	SAC Lab Dairy Pit Silages
Dry Matter	34.4	29.5	29.6	25.9	25.1	27.48	28.3	41.2	38.3	31
D Value	75.8	75.8	75.9	70.8	75.8	70.18	72	75.9	68.5	69
ME	12.1	12.1	12.1	11.3	12.1	11.23	11.5	12.1	11	11
Crude Protein	14.3	12.9	15	16.9	14.2	14.63	14.2	15.1	16.4	13.2
Ash	7.8	6.7	7.8	8.2	8.4	7.68	8.8	9.1	9.9	81
PAL	0	792	539	586	884			614		822
NDF	42.8	44.6	38.3	40.3	44.2	38.4	43.4	34.6	51.1	45.7
Sugars	2.5	3.3	2.7	13.2	1.1	3.9	12.5	5.7	4.9	7.2
SIP	112.2	100	119	113	113	113				105
pH	4.3	4.3	4.5	3.7	3.9	4.15	4.1	4.1	4.2	4.4

Comments on silage quality and ration considerations from Dr Lorna MacPherson, SAC Dairy Consultant

High protein silages especially those over 15% - care will need to be taken to ensure there is not too much rumen degradable protein in the ration. The risk of over feeding RDP will be reduced if wholecrop cereal is included in the ration. Bypass protein sources should be chosen to balance these rations – soya as opposed to rapeseed meal or wheat dark grains, or even better use protected rapemeal sources which have higher bypass protein than soya (and can also help to reduce/eliminate soya to help carbon footprint).

In high sugar silages be aware of overdoing starchy cereals with these rations as high starch+sugars can increase rumen acidosis risk, especially if pH is also low. (PAL figures are only a concern if over 900.) Low in sugar silages, may require supplementation with beet pulp or molasses to increase to the normal target 6% sugars in the overall ration on a dry matter basis.

Higher dry matter silages (if not feeding wet distillery byproducts such as draff) may need water added to the mix to help reduce sorting behaviour and encourage intakes (aim for TMR dry matter to be around 40%).

High ME (12ME), low NDF silages, if not fed with wholecrop (and if precision chopped) may have a very fast passage rate through the rumen (maybe even more so with the high protein levels) and so some straw in the diet (try 0.5kg at first) might be necessary to slow down passage rates, reduce risk of loose muck and help cudding (rumen buffering).

For diets with these highly digestible forages, if particularly wet/acidic and depending on starch levels and amount of cake fed, a rumen buffer might be a benefit.

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The Value of Good Silage

Aside from grazed grass, silage is the cheapest feed for dairy cow rations and the quality can make a huge difference to the cost of your ration. Overall the group have made excellent quality silage, with ME's above the average seen in the SRUC analytical labs. The table below demonstrates the impact to ration costs of making 12ME silage compared with 11ME silage for a M+25 litre ration (650kg cows, 4%BF, 3.3% Protein) Silage is included in both rations to achieve a Dry Matter Intake of 17.5kg.

11ME Silage	12ME Silage
5.5kg concentrate required	4kg concentrate required
Ration cost = £1.49/hd/day	Ration Cost = £1.08/hd/day
Based on Concentrate at £270/t	**SAVING 41p/hd/day**

Silage Pit Slippages

Slippage of silage pits has been a problem for several members of the group along with many farmers across south west Scotland. As slippage allows air into the pit, the risk of spoilage and presence of mycotoxins increases. There doesn't appear to be any single common factor affecting all the pits, apart from the high quality of silage made. Research carried out by Dr David Davies for AHDB concluded that the most common risk factors associated with silage pit slippages are;

1. Inconsistent silage density within the clamp
2. Higher and wider pits may be at higher risk of slippage
3. Over consolidation of wet silages i.e. those with less than 25% dry matter
4. Poor silage preservation
5. Short chop length may exacerbate the problem
6. Higher risk of slippage if the fill angle is more than 20°
7. High quality silage may increase the risk of slippage as there are lower levels of structural fibre.

Slipped silage should be used as quickly as possible to reduce the risk of spoilage and consideration should be given to adding a mycotoxin binder to the ration to reduce the risk to cow health.

Fertiliser for High Quality Forage

High fertiliser prices have made everyone stop and think about their current usage patterns and question if there are areas where savings can be made. Below are some of the key considerations that should be borne in mind when purchasing for 2022.

- Due to large volumes of slurry available on dairy farms, soil status for P&K are usually good, but without regular soil sampling you don't know for sure.
- Nitrogen works most efficiently on grassland at pH6—in some fields lime may be a more appropriate product that bagged fertiliser
- Most of the requirement for P & K in silage crops will be met from slurry alone, nitrogen is the limiting factor.
- Eliminating N applications seriously impacts yield potential of silage crops.
- Sulphur plays and important role in the protein content of grass. It should continue to be included in fertiliser programmes along with Nitrogen to ensure silage with a good protein content as a basis for rations to avoid having to purchase costly protein feeds.