

## Technical Note 21/07/08

### Grass Silage – Early Season Averages 2008-09

Over 600 first cut clamp grass silage samples now have been analysed by Frank Wright Trow Nutrition. The season's results are summarised in the table and compared to the equivalent period of last year. Despite the very different weather conditions in spring and early summer 2008 compared to 2007, the average results are remarkably similar between years. Interestingly, the main cutting date was one week later this year than last during which time many 'good-looking' crops will have matured with a negative impact on digestibility and hence energy. In summary, the first cut silages are generally of reasonable quality and preservation characteristics but show a large range around the average. The key issues are:

- Dry Matter, D value, ME and Intake Potential are almost exactly the same as last season, both on average and range of result. A winter ration for 35 litres based on *ad libitum* grass silage will require 11 kg per day of concentrates.
- Whilst the average crude protein content between years is the same at around 13%, the minimum to maximum range is lower in 2008 (7.0%-17.7% in 2008 vs 8.8%-18.2% in 2007), possibly reflecting reduced fertiliser application.
- The metabolisable protein (MPB, MPN and MPE) supply for the average 2008 first cut silage is less than 2007, largely associated with the 15% lower by-pass protein content this year (MPB 23.7% vs 27.8%). Conversely, the average rumen degradable protein and energy supply from this year's first cuts are respectively 3.5% and 1.5% greater than 2007 (ERDP=MPN-MPB, 69.4 vs 62.2g/kg; Rumen Energy=MPE-MPB, 49.5 vs 48.8g/kg), suggesting a slightly more rumen fermentable first cut in 2008. With energy and protein costs at a premium, it will be critical to carefully formulate the overall ration to balance rumen degradable and undegradable protein as well as energy for optimum performance.
- Although the average NDF (cellulose, lignin, and hemi-cellulose) at 50.8% is some 3.5% higher (numerically) than in 2007, rumen condition and acidosis potential requires particularly careful attention. The ADF (cellulose and lignin) is the same between years and as such the additional NDF in 2008 can be associated with more rapidly fermentable carbohydrate (hemi-cellulose). This can have a negative effect on rumen function especially if coupled with a high lactic acid. Although the average lactic acid is only 76.5g/kg, a level of over 100g/kg is known to be a risk to rumen acidosis and hence dry matter intake.
- Further warnings of acidosis risk can be seen in the higher Potential Acid Load (PAL) in the 2008 crop to date although overall Rumen Stability Value of silage is improved this year associated with the higher NDF and lower lactic acid. Care is clearly needed in rationing to support rumen health and control acidosis.
- Vitamin E is critical for its actions as an anti-oxidant, in immunity, fighting mastitis and somatic cell counts, fertility (not least through retained cleansings and metritis) and muscle integrity. Following the development of the vitamin E prediction last year, we can see that this year's average is slightly lower at 35.2mg/kg. This would mean that in a simple ration of 10kg DM grass silage, 4kg of blend and 8kg compound feed containing 100 mg vitamin E/kg, the vitamin E content of the farm mineral fed at 100g per head per day would need to be 5000mg/kg in order to meet the requirement of 1690mg/head/day for a 650kg cow.

In summary, when rationing based on this season's early grass silage results, Wynnstay's Specialists will be paying particular attention to total energy supply, rumen energy supply, by-pass protein and overall protein balance to optimise performance, rumen health and prevent acidosis. With the averages being remarkably similar and the struggle to get cows to milk to potential associated with 2007, careful rationing this year is going to be vital to maintain yields and profitability.

### Early Season First Cut Grass Silage Results

		Jul-07	Jul-08	Min	Max
Dry Matter	%	30.4	30.8	17.0	59.6
Crude Protein	%	13.2	13.1	7.0	17.7
'D' Value	%	67.3	67.2	58.2	75.6
ME	MJ	10.8	10.8	9.3	12.1
pH		4.1	4.2	3.8	5.3
NH3N	%	4.7	5.0	3.8	7.6
Sugar	%	2.9	2.8	1.0	5.8
Ash	%	8	7.7	5.4	15.0
NDF	%	47.2	50.8	40.3	66.5
ADF	%	32.9	33.0	27.5	43.8
Oil B	%	3.7	3.9	1.5	5.1
VFA	g/kg	22.5	21.0	0.1	79.3
Lactic Acid	g/kg	79.1	76.5	19.2	169.2
Vitamin E	mg/kg	40.5	35.2	0.8	75.7
<b>Feed into Milk Terms</b>					
Intake Potential	g/kg	95.1	96.0	71.1	117.9
PAL	meq/kg	834.6	849.1	709.0	1,066.2
RSV		279.9	299.9	221.2	387.4
MPB	g/kg	27.8	23.7	14.8	35.6
MPN	g/kg	90.0	88.1	46.7	116.7
MPE	g/kg	76.6	73.2	53.0	85.6

Further information can be obtained from any of the Wynnstay Ruminant Technical team or Steve Brown, Technical Manager on 07774 855026 or [steve@wynnstay.co.uk](mailto:steve@wynnstay.co.uk)

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