

No 155: Milk Yield from Grazing & Forage Update

Milk Yield from Grazing

The predicted milk yield from grazing reported by the FWTNI laboratory for May 2011 was the highest since our records began in 2005, averaging M+16.1 litres. This is some 2 litres above our established typical May average (see figure 1). These averages, however, hide the enormous variation in milk yield from grazing achieved across the country associated with differing weather conditions and hence grass growth.

The wettest May on record since 1910 was witnessed in Scotland (an average of 538.6mm of rain in parts of Scotland such as Argyll, compared to a long term average of 422mm), yet one of the driest over much of East Anglia and South-East England, with spring 2011 seeing an average of just 17mm, compared to a long term average of 134.9mm (Met Office data).

Grass growth in many regions is lower than this time last year as a result of the early, dry spring. For example, recent figures from Yorkshire suggested a reduction in daily grass growth of up to 56% on permanent pasture (to 21kg/ha DM), 24% on the new re-seed (to 64kg/ha DM) and 38% on the silage ley (to 43kg/ha DM), compared to an overall average of

78kg/ha DM/day for around the same time in 2010. In Cornwall, figures published in Farmers Weekly (May 2011) suggest that although grass growth has increased from around 17kg/ha DM to 29kg/ha DM, it is still 40% lower than comparative 2010 figures. Of course, spring 2010 was itself unusually dry.

Regional Variation

Due to these vast differences in climate and grass growth, it is relevant to consider the milk yield from grazing data by region.

Figure 2 on page 4 illustrates the regional rainfall during March to May 2011 as a % of its long term average (Met Office figure) related to the grass dry matter content and predicted milk from grazing by region during May (FWTNI laboratory). Scotland had the highest relative rainfall associated with the lowest grass dry matter (18.4%) and milk from grazing (M+9.7 litres) in the UK.

In contrast, Eastern England reflects the reported drought conditions in many parts of the area having the lowest relative rainfall, the highest grass DM (22.05%) and the lowest milk from grazing (M+11.7 litres) in England. North West England had the highest milk from grazing in the UK, averaging M+23.6 litres.

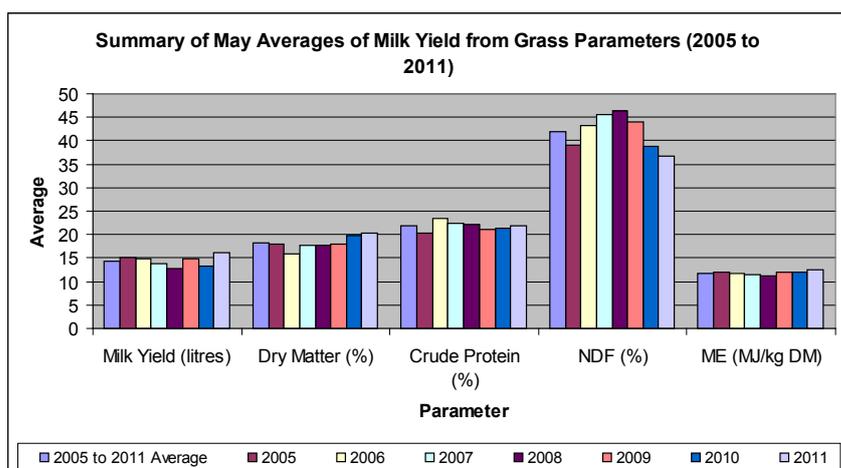


Figure 1: Average fresh grass results for May in the years 2005 to 2011 (FWTNI laboratory data)

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Even within regions, however, there is considerable variation in grass availability, analyses and hence potential milk from grazing. For example, May grazing samples from the Wales and Midlands region ranged in dry matter from 10.1% to 28.7% and predicted milk yield from grazing from below maintenance up to M+27 litres. Similar ranges were evident in the South West. A breakdown of data for your region is available on request.

These ranging figures clearly demonstrate the importance of predicting milk yield from grazing on each individual farm on an ongoing basis rather than relying on average figures. The FWTNI Dial-A-Yield tool (Urgent News 153) and Grazing Reality Check (Urgent News 138) are useful tools in monitoring and maximizing performance on an individual farm basis.

Forage Availability

Despite recent rainfall, many areas remain desperately short of water, grazing and winter forage stocks. Already 'forage replacer' concentrate feeds are being produced to help alleviate the situation. Whilst it is possible to formulate such concentrates to a similar nutritional value to grazing, and particularly the fibre content (table 1), it is essential to remain vigilant regarding the intake of structural or physically effective

fibre (peNDF) in the total ration. peNDF is critical to maintain rumen function and health, milk production and butterfat. In many cases where forage replacers have to be fed, whilst the total diet NDF requirement can be met, peNDF may not be. The Rumenac rationing programme in conjunction with the FWTNI Particle Size System can be useful tools in helping achieve target performance on affected farms. A typical example is given in Table 2 whereby dietary NDF may be adequate at 34%, but peNDF is clearly deficient when compared to the ideal target of 16% or indeed the absolute minimum requirement of 14%.

Table 1: Nutrient profile of 1kg fresh grass

| | | Fresh Grass | Forage Replacer Concentrate |
|---------------|----------|-------------|-----------------------------|
| Dry Matter | % | 21 | 89 |
| ME | MJ/kg DM | 12.5 | 12.25 |
| Crude Protein | % | 19.2 | 19.2 |
| NDF | % DM | 36 | 40.5 |

(Average analysis: 23rd to 27th May 2011) Vs 1kg theoretical forage replacer concentrate (consisting of 40% wheat feed, 10% dried molassed sugar beet pulp, 20% sunflower exp, 10% wheat, 10% soya hulls, 10% palm kernel)

Table 2: Theoretical diet and nutritional analysis of a diet containing forage replacer concentrate (analysis in table 1)

| Diet | | Nutritional Analysis | | |
|-----------------------------|-------------------|----------------------|----------|----------|
| Raw Material | Inclusion (kg FM) | Nutrient | Unit | Quantity |
| Grazing | 28 | Dry Matter | % | 44 |
| Dairy 16% Compound | 8 | ME | MJ/kg DM | 12 |
| Forage Replacer Concentrate | 7 | Crude Protein | % | 18.88 |
| | | NDF | % DM | 34 |
| | | peNDF | % | 11.2 |

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In this basic example, adding 2.5kg of straw to the above ration would give an NDF content of 38.8% and a peNDF of 15.1% (table 3), thus helping to maintain healthy rumen function.

Table 3: Theoretical diet and nutritional analysis of a diet containing forage replacer concentrate (analysis in table 1) with additional straw

| Diet | | Nutritional Analysis | | |
|-----------------------------|-------------------|----------------------|----------|----------|
| Raw Material | Inclusion (kg FM) | Nutrient | Unit | Quantity |
| Grazing | 28 | Dry Matter | % | 47 |
| Dairy 16% Compound | 8 | ME | MJ/kg DM | 12 |
| Forage Replacer Concentrate | 7 | Crude Protein | % | 17.37 |
| Straw | 2.5 | NDF | % DM | 39 |
| | | peNDF | % | 15.1 |

Of course, achieving the target peNDF, typically through buffer feeding, will depend on many factors, not least forage source and availability. Any compromise in nutrition and diet structure should be balanced against lost performance on both a short and long term basis.

Early Grass Silage Results

Looking forward to winter, grass silage stocks vary greatly on farms at present. Very early consideration of the FWTNI grass silage results up to 6th June 2011 indicate on average a well preserved crop of higher DM compared to last years early results (34.0% in 2011 compared to 32.4% in 2010) with a marginal increase in ME (11.33 MJ/kg DM in 2011 compared to 11.2 MJ/kg DM in 2010). More data on early grass silage averages will be available when sufficient samples have been analysed.

In Summary

Whilst the milk yield from grazing in May was on average the highest it has been since records began, there are considerable differences across the UK, reflecting the range in climatic conditions, notably rainfall, and hence grass growth. There is a need for continued monitoring of potential milk from grazing on individual farms using the FWTNI Dial-A-Yield.

Where forage supply and stocks are low, it may become essential to feed forage replacer concentrates. However, vigilance is needed in balancing the diet for both nutrients and physical structure if optimum rumen and cow health are to be maintained and milk production and quality targets achieved.

Further technical and product information can be obtained from the Frank Wright Trow technical department on 01335 341102.

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Figure 2: Analysis of dry matter (DM) and milk yield (MY) by region in relation to rainfall from March to May 2011 as a % of the 1971 to 2000 average

