Dairy **Bulletin**

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Silage stocks and quality

The wet weather experienced during the summer disrupted first and second cut silage harvests throughout Northern Ireland. Many farmers, particularly in Northern & Western counties were also forced to feed substantial quantities of silage during the grazing season when cows had to be housed. Average silage quality in 2007, as analysed by AFBI, Hillsborough and presented in Table 1, is similar to previous seasons. However, the average results mask the wider range in quality being encountered by CAFRE Dairying Advisers on many dairy farms. Where first cut silage was harvested in early May, quality is excellent with ME over 11.5 MJ/kg DM and high levels of crude protein at good dry matters. In contrast many delayed second cuts have energy levels of 10.0 MJ/kg DM or less and low crude protein with a number less than 10%.

TABLE 1. Silage quality 2005 to 2007 (first 1200 samples 2007)

	1st Cut 2005	1st Cut 2006	1st Cut 2007
FIM Intake factor	89	91	90
DM (%)	24.4	26.1	25.7
pH	4.1	4.1	4
ME MJ/kg DM	10.5	10.6	10.7
CP % DM	12	12.1	12.6
NH3 % N	10	7.3	10
D value	66	66	67

	2nd Cut 2005	2nd Cut 2006	2nd Cut 2007
FIM Intake factor	91	92	86
DM (%)	25.8	26.9	25
pH	4.1	4.1	4
ME MJ/kg DM	10.5	10.5	10.4
CP % DM	12.8	12.9	12.1
NH3 % N	9.5	6.6	9
D value	66	66	65

Source: Hillsborough Feeding Information Service, AFBI

Concentrate feed prices

Predicting the price of feed for the 2007-08 winter is proving to be a challenging and turbulent exercise for a variety of reasons. The changes in the cost of common ingredients in cattle feed from 2006 to the time of writing are outlined in Table 2.

TABLE 2: Ingredient prices Sept 2006 and Oct 2007

	£/t			
Ingredients	**20/09/2006**	**24/10/2007**	**Price change**	**% change**
Soya 50 (hipro meal)	148	227	44	30
Rape Meal extr.	110	164	46	42
Pollards (pellets)	98	173	50	51
Citrus pulp	95	165	52	55
Soya hulls	96	159	62	65
Barley dried rolled	116	190	64	55
Wheat (rolled), dried	122	194	83	68
Maise (ground or rolled)	134	185	76	57
Molaferm	114	116	2	2
Molasses (Blackstrap)	118	120	2	2

Why have these price increases occurred now? A number of reasons have been suggested:

- The feed price market needed some correction to reflect costs of cereal production and the fundamentals of supply and demand.
- World grain stocks are at their lowest for at least 25 years however world human population has increased by 15% since 1982.
- Extremes of weather from floods to droughts in some key grain growing areas of the world have affected forecasted yields further exacerbating the low world stocks.
- Oil prices approaching or exceeding $80/barrel make biofuel appear attractive diverting grain from animal and human food production.
- Uncertainty in the stock market and a reduction in the rate of appreciation of property values have tempted some speculators into cereals.

Animal feed ingredients look likely to be relatively expensive for the foreseeable future so what can milk producers do? Farmers should bear in mind that the price differential between high and low quality ingredients is quite small. Do not be tempted to reduce the quality of rations to reduce feed costs. Aim to use high quality rations as they will be less expensive in the long run, especially where silage quality is poor.

Planning your winter feeding - recommended feeding levels for this winter

While concentrate prices have risen substantially, milk prices have increased significantly reflecting world demand for dairy products and will easily cover the extra feed costs. In deciding on feeding levels, the major considerations should revolve around sustaining the health and productivity of your dairy cows, especially in early lactation.

TABLE 3: Silage quality and milk yield potential

		TYPICAL SILAGE FEED VALUE		
		Poor Silage	Average Silage	Good Silage
Dry matter (%)		17	20	25
ME (MJ/kg DM)		9.0	10.5	11.5
Crude protein (%DM)		9	13	15
COW PERFORMANCE			**CONCENTRATE REQUIREMENT**	
Herd yield (litres)	**Peak yield (litres)**	**Poor Silage**	**Average Silage**	**Good Silage**
4,500	23	8.0	6.0	2.0
5,500	27	9.5	7.0	3.0
6,500	31	11.5	9.5	6.0
7,500	35	12.5	10.5	7.0
8,500	38	14.0	12.5	9.0
9,500	42	16.5	15.0	12.0
10,500	45	18.5	17.0	14.0

Donaghadee farmer Trevor Curragh is pictured (L) with NIE's Claire McCambridge and Steven Lyle from Low Carbon Solutions

Planning a winter feeding programme should start with silage analysis. Ideally this should be done by coring silage pits before they are opened with further analysis at least once from the silage face during the winter to monitor changes in forage quality or dry matter. Cow nutritional and concentrate requirements are dependent on both silage quality and milk yield potential as outlined in Table 3.

Recommendations in the above table are a general guide and these should be fine-tuned to your own herd circumstances taking account of cow condition and silage crude protein content by a ruminant nutritionist or your CAFRE Dairying Development Adviser.

Having decided on the level and type of concentrate to feed to your cows, it is vital that you monitor performance to ensure that the diet is properly balanced and delivering the required cow performance, especially given the cost to feed this winter. Further information on choosing concentrates to suit forage quality and monitoring the cow's dietary performance can be found in the most recent Greenmount Dairy Open Day booklet available on the RuralNI portal at: **http://www.ruralni.gov.uk/index/livestock/livestock_dairy/protein_herd.htm**, and in the "Winter Feeding of Ruminant Livestock" booklet also available online.

NIE Energy Efficiency Scheme

The 'NIE Energy Efficiency Scheme' offers subsidised energy saving lighting packs for farmers and small businesses, as well as plate cooling equipment and condenser replacements for dairy farmers.

The scheme is subsidised from the NIE Energy Efficiency Programme and has been developed by NIE in association with Low Carbon Solutions Ltd. There are three energy saving lighting packs available for the agricultural sector or small businesses and two energy saving options specifically for dairy farmers.

NIE can give a grant of £500 towards the installation of plate heat exchangers, which brings the cost down from £1,400 to £900 and a payback period of around two years. The exchanger transfers heat from the milk to well water or mains water which is then used to wash down the milking parlour and also for cow drinking water. The NIE subsidised plate heat exchanger reduces milk cooling costs by some 50% as it pre-cools before the bulk tank.

The second energy saving option for dairy farmers is a NIE grant towards the replacement of condenser units, which uses the R12 refrigerator gas with new scroll compressor (R404) units. R12 gas is now no longer allowed and has a significant risk to ozone depletion and global warming. New units use modern refrigerator gases and are more efficient. NIE is offering a grant of £400 towards these units reducing the overall cost from £1400 to £1000 with again a payback of some two years.

The five NIE energy saving options will be available on a first come, first served basis. To apply, call Low Carbon Solutions Ltd and quote 'NIE Offer' on Tel: 028 2827 6706 or email **steven.lyle@lowcarbonsolutions.com**

Heifer growth and development - AFBI Hillsborough research points the way forward

Managing dairy herd replacements to calve down at 23-24 months of age at 560-580 kg live weight can result in cost savings of over 1 pence/litre for Northern Ireland milk producers. Research at AFBI, Hillsborough funded by DARD and AgriSearch, has demonstrated that rearing heifers to these targets results in heifers with optimum lifetime performance. Rearing to heavier weights at first calving (600 kg +) leads to higher first lactation milk yields, but at the expense of poorer fertility leading to reduced long-term performance.

Survey of heifer rearing practices

A large-scale survey of heifer rearing practices in Northern Ireland has been designed by AFBI, Hillsborough and CAFRE staff with the survey undertaken by CAFRE Dairying Development Advisers. Analysis of results from the first 150 farms involved in the survey indicates an average age at first calving of 27.5 months, well above the optimum. This delay in age at first calving is primarily due to delaying breeding in maiden heifers past the optimum. The survey has also found that most producers underestimate the live weight of heifers at the crucial service period by as much as 60 to 70 kg.

Monitoring heifer growth is key to making informed decisions on breeding management. To calve down at 23-24 months of age, breeding needs to commence with heifers at 13.5-14 months of age. AFBI research indicates that at this stage Holstein Friesian heifers should weigh 350 kg plus. It is recognised that not all dairy producers have weighbridges to easily monitor live weights of heifers at regular intervals during the rearing period. Consequently, AFBI, Hillsborough has developed other simple and easy to measure assessments of target body size i.e. withers height and heart girth diameter. At breeding, Holstein Friesian heifers should have a minimum height at the withers of 125 cm and girth diameter of 165 cm.

The survey of heifer rearing systems across Northern Ireland is pointing the way forward on how to best transfer this information to producers, so the industry can get the maximum benefit. The survey will continue over the next few months. Farmers contacted by CAFRE Dairying Development Advisers are encouraged to participate to ensure that research, development and technology transfer being undertaken by AFBI & CAFRE in partnership is fully integrated.

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