Teagasc Advisory Newsletter

BEEF

December 2016

Composition of cattle rations

Edited by
James Keane
Beef Specialist

This year due to bad weather conditions, silage samples are returning with lower feeding value. Also in some areas, due to cattle being housed earlier, fodder will be short. Most farmers will buy some type of a ration to compensate for poorer-quality silage and stretch fodder supplies on their farms. A ration must supply three key components:

- energy – maintenance and weight gain;
- protein – for growth; and,
- fibre – to keep the rumen functioning well.

The percentage of different ingredients in your ration will dictate the level of energy and protein. Some farmers buy a ration based purely on the protein, when in fact they should be buying it based firstly on the level of energy, and then on the percentage of protein. Both are critical for liveweight gain over the winter period.

Feedstuffs in Ireland are assigned two net energy values – UFL (lactating animals) and UFV (maintenance and weight gain in finishing animals). One UFL equals the energy content of 1kg of dried barley and all feed ingredients used in Ireland are expressed relative to barley.

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teagasc
Agriculture and Food Development Authority

Table 1: A guide to the UFL and crude protein values for commonly used ingredients.

	UFL	Crude protein %	
Barley	1.00	10	
Wheat	1.00	10	Energy feeds
Oats	0.90	10	
Maize	1.05	8.5	
Soya	1.01	48	
Distillers	1.02	25	
Peas	1.00	20	Protein feeds
Beans	1.00	25	
Corn gluten	0.91	20	
Rapeseed meal	0.91	34	
Citrus pulp	1.00	6	
Soya hulls	0.92	10	Digestible fibres
Beet pulp	1.00	10	
Palm kernel expeller	0.85	14	
Wheat feed (pollard)	0.75	16	Poorer-quality ingredients
Sunflower oil	0.55	24	
Molasses	0.78	4.5	
Minerals	0	0	

Table 1 shows us that some ingredients have lower levels of energy than others, e.g., palm kernel has only 85% of the energy of barley and wheat feed has only 75%, even though in both cases they have a higher protein value. Every farmer should know what ingredients are in their ration, and if you look at the label on the bag or the delivery docket it will list the ingredients in descending order, i.e., highest inclusion rates to lowest inclusion rates. Most compounders bind rations together with molasses at 2%-5% inclusion rates, so any ingredient listed after molasses is at very low levels. Minerals and vitamins are also a key component of any ration and will be included at rates of 2% in most rations.

Current concentrate prices

In terms of the value of straights, each ingredient is compared to the best two sources of energy and protein, i.e., barley and soya bean meal. **Table 2** shows the current price being paid for these ingredients and whether or not they are better value than purchasing either barley or soya bean meal.

Table 2: Current prices for ingredients and how they compare to barley and soya.

	Current price €/t	Value relative to barley and soya €/t
Barley	180	180
Soya bean meal	390	390
Maize	210	203
Wheat	190	189
Maize distillers	210	225
Rapeseed meal	245	235
Corn gluten	205	202
Soya hulls	170	183
Beet pulp	210	181
Citrus pulp	210	171

Table 2 shows that this year maize distillers and soya hulls are good value and could be purchased with barley to feed a simple three-way mix. In some cases where farmers have to stretch fodder, feeding a three-way mix or a single straight will be a solution to extending the fodder over the winter period.

Ventilation

Many vets will tell you that pneumonia is still a major challenge on Irish farms because ventilation of cattle sheds is inadequate.

Over the years as sheds have been built, different cladding materials have been used on the sides to stop wind and rain getting in. You must remember that this is the inlet space and a simple rule of thumb is that inlet area must be at minimum twice the area of the outlet space and preferably be four times the outlet area. Outlet areas for cattle should be calculated at 0.1m^2 per animal.

Table 3: Materials and their recommended percentage space.

Material	Specification	% Space
Vented sheeting		5%
Space boarding	100mm board, 25mm gap	20%
Yorkshire boarding	152mm board, 50mm gap	25%
	(Dept spec) 75mm board, 25mm gap	
Windbreaker	Standard	25%

Table 3 *shows the percentage space of different cladding materials. Recently some farmers are opting for space boarding and Yorkshire boarding, as they allow more air into the shed.*

Space boarding: should not be used with a gap larger than 25mm, otherwise wind, rain and snow will get into the building. Boards should be 100mm wide, with 25mm spacing from wall to eave height and the full length of the building.

Space boarding.

Yorkshire boarding: Useful where rain is getting in and wetting the bedded or slatted areas. Two rows of vertical boards are placed offset on either side of the purlins, with the inside boards positioned at the centre of the gaps between the outside boards.

Yorkshire boarding.

HEALTH & SAFETY

Update your risk assessment

The festive season is a time for relaxing and reflecting. One area for reflection should be on risk assessment. January is a good time to update your farm risk assessment, as is legally required.

Consider the risks that could jeopardise your life and your livelihood, document them, and most importantly, plan to take preventative action.

January is a high-risk month as workload increases. The main risks are related to working in close proximity to tractors and machinery, falls from heights/collapsing loads, animal related, slurry/drowning, and other.

RESEARCH UPDATE

Prevent silages heating during feedout

Edward O'Riordan of Teagasc, Grange advises on preserving silage during feedout.

The most important requirement for successfully preserving any crop as silage is that it is stored in the absence of air. Thus, silage pits and clamps are covered with plastic sheets, while bales are wrapped in plastic stretch-film in order to store the forage under air-free conditions. However, silages are exposed to air during feedout and thus are prone initially to heating and then to visible growth of mould. Whereas some silages can appear to be stable for several days during feedout (**Figure 1a**), others will show signs of heating and mould growth after only a day or two of exposure to air (**Figures 1b** and **1c**). In general, silages made from drier and stemmier grass are more prone to deterioration during feedout than those made from wetter and leafier grass. Silages that unfortunately fermented poorly during ensilage (i.e., high pH, butyric acid and ammonia-N) are more stable during feedout than silages that fermented properly (i.e., low pH, high lactic acid). In all cases, silages are more prone to heating when feedout occurs during mild rather than cold weather.

Aerobic deterioration during feedout will reduce silage feed value, with the result that livestock will eat less and the digestibility (DMD) of what they consume will have been reduced (typically by 2-4%). Where heating of the silage is advanced, the spores and toxins produced by moulds growing on the silage can be harmful to both man and beast. Steps to prevent heating during feedout are:

- at harvest time fill pits and clamps quickly, compact the forage and cover and seal quickly – ensure the seal remains secure throughout storage; and,
- at feedout, minimise the duration of access of silage to air. The exposed silage face should be removed for feeding every two to three days. This necessitates that the width and height of the silage feed face matches the number and type of livestock to be fed from the silo. If only some animals are to be fed silage for a short period, it is better to use bales during that time. Cut rather than pull blocks of silage from the face. Retain the plastic sheets tightly in place, but don't pull them down over the silage feed face.

Figure 1. Changes in silage temperature (°C) when exposed to air for 192 hours (eight days) – Source: Teagasc Grange.