Understanding Feed for Beef Cattle & Sheep

Farm Advisory Service

With good nutrition, animals are healthier and more of their genetic potential can be achieved. Nutrition is the biggest driver of flock or herd performance.

Key points for successful feeding

- Consider protein and energy when selecting feed products and planning stock feeding—they need to be matched to get full benefit
- Feeds high in starch; such as bruised barley, maize and concentrate feeds; lower rumen pH. This shift of pH results in reduced fibre digestion and can lead to acidosis, therefore:
  - ◊ Alterations to the diet should be made gradually
  - ◊ Inclusion of high starch feeds should be limited
  - ◊ The stock should have sufficient trough space to minimise risk in the pushier animals
  - ◊ Daily concentrate provision over 0.45kg in sheep and over 0.5kg per 100kg of liveweight in cattle should be split into two or more feeds
- Fibre increases the time that the feed resides in the rumen—good for rumen health but too much will reduce feed intake
- Rations based on appropriate forage and topped up with additional feeds if required are the most rumen friendly and cost-effective

Our Practical Guide covers these useful topics:

For more Practical Guides, Case Studies, information on our Focus Farms and ideas to benefit your farm, visit www.fas.scot

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Important terms

Dry Matter - The water content of different feeds ranges greatly, therefore the composition of feed is often as expressed on a dry matter basis. This allows for a more valid comparison of nutrient content between feeds.

Metabolisable energy - This is measured in megajoules of metabolisable energy per kilogram of Dry Matter (MJ ME/kg DM) – a low energy feed is less than 9 MJ ME/kg DM, high is more then 12 MJ ME/kg DM. This is not often quoted on feed labels, but is available upon request from reputable merchants.

Crude protein - denoted as a % of feed, normally given on a fresh weight basis. Most crude protein is degraded in the rumen which is dependent on microbes that are fueled by energy. Some protein bypasses the rumen (digestible undegradable protein or DUP).

Fibre - on a forage analysis this is given as the total fibre content (NDF) and the non-digestible fibre (ADF) . The more mature the grass at cutting the higher the NDF figure will be. The target 500-550g/kg DM for silage and less than 600 g/kg DM for hay.

The European Agricultural Fund for Rural Development: Europe investing in rural areas

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Feeding Beef Cattle and Sheep

Animal signs on diet suitability

Body Condition – See FAS Technical Note TN658 on Body Condition Scoring and the QMS-MooTube channel. Achieving Body Condition Score targets at key times of the year is highly influential to reproduction success. In addition, monitoring condition helps understand ration suitability.

Behaviour –Bellowing is common behavior for animals on a restricted diet, such as dry spring calving suckler cows, but not for growing stock or ewes in late pregnancy. Other unusual behaviours such as depression and lack of appetite may indicate acidosis or underlying health issues.

Dung – If they are stiff in the dung this can be a sign that protein in the diet is low. If dung appears excessively sloppy, protein may be in excess and they may need more fibre. Undigested grains in the dung, can be a sign that grain needs additional processing.

Livestock weight gains – if weigh crates are on farm, these are invaluable to understand the implications of management on performance. Target weight gain for finishing lambs is 300g/day from birth to sale. For finishing steers and heifers, the target is 0.7 to 1.2kg/day.

Analysing labels

Example label:

Beef Nuts

A complementary compound feeding stuff for beef cattle
Directions for use:- To be fed with silage or grass or other roughage. All raw materials used in this feed are from a non-genetically modified source (max 1%)
Oil (B) 3.7% Protein 15% Fibre 7.9% Ash 6.6%
Vit A 8000iu/kg Vit D3 2000iu/kg Vit E 40iu/kg (expressed as ALPHA TOCOPHEROL ACETATE)
Copper 35mg/kg (From Copper Sulphate) Selenium 0.25mg/kg
Ingredients used in descending order by weight are:- Barley, Distillers Dark Grains (barley), Wheatfeed, Sugar Beet Pulp, Malt Residuals, Distillers Dark Grains (maize), molasses, Calcium Carbonate, Trace Elements + Vitamin Supplements, Sodium Chloride
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This feedstuff contains added Copper DO NOT FEED TO SHEEP
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Oil should be under 7%

High fibre can mean low energy, target 6-8%

Ash indicates the mineral level, target 5-7%

Look at quality of ingredients, these are listed in order of inclusion rate:

- Good for energy: Barley, Maize, Wheat
- Good for protein: distillers grains, soya, rapemeal
- Not good for much: Oat feed, standard sun flower or screenings.

As a guide, molasses is usually included at 3-5% so ingredients below that will only only have a trace value, e.g. minerals.

Tests and Tools

Forage analysis—Knowing the nutritive value of the forage enables accurate supplementation if required. Without an analysis, rationing is guesswork. Fresh grass and silage can also be analysed for mineral content to understand mineral deficiency risk.

Soil testing—although the uptake by the plant may not reflect the mineral status of the soil, soil testing can flag up potential issues alongside other information

Blood sampling—Vets can test the blood to get indication of energy and protein status—this is particularly useful when under nutritional pressure, e.g. in late pregnancy. Vets can also sample blood mineral levels to understand deficiency or toxicity issues.

Liver biopsies can be done to understand copper and cobalt levels, however, this service is not yet widely available.

Post-mortems may flag up nutrition issues, particularly acidosis.