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Concentrate supplementation of cattle at grass

As summer progresses the quantity and nutritional quality of grass declines. In spring and early summer there is sufficient good quality grass for optimum animal production and for conservation as silage or hay. In late summer/autumn animal growth rate can decline on grass alone, especially in set stocked systems. At some stage it may be necessary to supplement the grazing in order to maintain growth rates. However too much supplement may not add to the grass but may depress its intake, eventually resulting in very little improvement in production for a large level of supplement. So the trick is to use the right amount of supplement that will compliment the grass and not replace it.

### Cost effectiveness

Grazed grass is generally around 20% of the cost of most concentrates. Therefore the cheapest weight gains will be achieved from grass as long as it is well managed and is high quality with plentiful availability. There can be an over reliance on concentrates due to the difficulty of managing grass in varying seasonal conditions (both within a season and across different seasons). Feeding concentrates should only be considered when it will maintain or improve performance.

### Target sward heights for cattle

| Type of stock             | Period             | Rotational Pre grazing height cm | Rotational Post grazing height cm | Set Stocked cm |
|---------------------------|--------------------|----------------------------------|-----------------------------------|----------------|
| Lactating suckler cows    | Turnout - May      | 10-14                            | 5-6                               | 5-6            |
|                           | June - July        | 12-15                            | 7-8                               | 7-8            |
|                           | August - November  | 12-15                            | 8-9                               | 7-9            |
| Dry cows                  |                    |                                  |                                   | 4              |
| Growing /finishing cattle | Turnout - May      | 10-12                            | 5-6                               | 5-6            |
|                           | June - July        | 10-14                            | 6-7                               | 6-7            |
|                           | August - September | 10-15                            | 7-8                               | 7-8            |

### Assessing grass quality

Grass often has a protein content which is above that required by beef cattle so it is important that it has enough energy to utilise the protein. Metabolisable energy content is directly related to the digestibility of the grass (D value). Ensuring that there is a high percentage of perennial ryegrass and white clover (at least 75%) and that the grass is grazed at the parameters suggested in the above table will ensure that the D value is in the mid 70's and ME will be over 11.5 MJ/kgDM. Grass of this quality will not require supplementing until late summer and even then it may be more to do with the reduced availability rather than its quality.

### Practical recommendations

Where grass is plentiful and high quality, concentrates should not be required. However, where the grass supply is moderate or poor, as is likely in the autumn or in drought conditions, feeding concentrates should commence at a low rate and be built up to 2-3kg or more depending on the fate of the animal. This would include animals that were being finished or in transition to a more intensive diet. The concentrate should be high in energy and moderate for protein. Feeding amounts of over 2kg would need to be split into two feeds. Feeding concentrates at grass also allows contact with the cattle which can be a useful benefit especially pre-housing.

### Finishing cattle

Finishing cattle that are to gain +1kgLW/day may need to be supplemented at grass from mid summer onwards. Barley is a good feed for doing this as it is currently reasonably priced and compliments good summer grass well as it is high in energy and starch. Some native bred cattle may finish on grass alone (especially heifers) but may still benefit from some cereals in late summer. If grass quality is poor then you can consider putting out an *ad-lib* hopper with concentrates (introduce slowly in troughs and make sure the feed never runs out once *ad lib*). If feeding *ad-lib* it is advisable to have a ring feeder of straw available as well to provide long roughage. If grass is really poor or if the weather is inclement the cattle will tend to congregate round a feeder rather than graze so at some point there may be a decision that housing them will be easier and more cost effective than feeding at grass. This will also release grass for other cattle still outside.

For supplementing finishing cattle, where grass is plentiful concentrates can be fed at 0.5kg per 100kg liveweight. However, where the grass supply is moderate or poor, as is likely in the autumn, feeding concentrates at up to 1kg per 100kg live weight may be justified. If higher amounts are required then the stock should be housed.

### Store cattle

If grass is plentiful and of good quality then they should grow at least 0.8kg/day on grass or even more with a well-managed system. Monitoring sward heights regularly will ensure there is adequate grass for them and if there is not enough then supplementing with concentrates may be worthwhile. As with creep fed calves, the benefits will be higher in late summer when (as well as declining grass quality) they are nearing housing or sale and feeding concentrates will also help to acclimatise them to a different diet. Feeding excessive amounts though will prove expensive and time consuming so 1-2kg daily of a high ME cereal based concentrate should be sufficient and will only replace a small amount of grass dry matter that is in short supply anyway.

Autumn born calves present an opportunity for high weight gains at grass, whether suckling or not. Creep feeding suckling calves will give the usual benefits but after weaning they should ideally be grazed on good grass in a rotational system. Feeding concentrates could be continued post weaning to maintain growth rates.

### Summary

There is no single rule that will suit everybody as there will be a range of grassland types, cattle breeds and systems to consider. The main point to emphasise again though is that high quality, well managed grass will give the most cost effective weight gain so introducing concentrates at grass need only be considered if it will enhance production and performance.