Information Notes
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SAC

Silage Composition 2007 and Feeding Beef Cattle

A summary of the composition of the silages that are intended for feeding to beef cattle and that have been analysed by the SAC laboratory so far this year is shown in the table below.

Table 1. Composition of silages for beef cattle.

a) Pit silages

	Average	Range
Dry matter (g/kg)	248	168-510
D value (%)	65.4	51.8-74.5
ME (MJ/kgDM)	10.5	8.3-11.9
CP (g/kgDM)	116	83-208

b) Big bale silages

Dry matter (g/kg)	292	176-537
D value (%)	62.7	38.3-76.6
ME (MJ/kgDM)	10.1	6.1-12.3
CP (g/kgDM)	115	65-166

Both the pit and big bale silages have a normal metabolisable energy content but are slightly low in crude protein. However, just considering the average hides the vast variation in composition, which is shown in the column with the ranges. Acknowledging this variation is of utmost importance when it comes to formulating rations for stock to perform to the desired targets.

If we look more closely at the key nutrients, ME and CP, then an appreciation of the variability can be seen in the following figures.

Fig 1. Pit and big bale silage ME (MJ/kgDM): % in each category

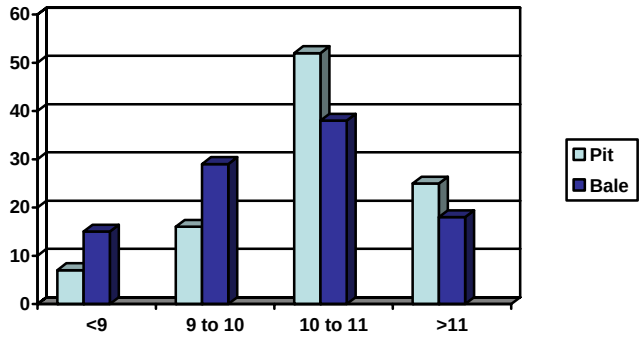
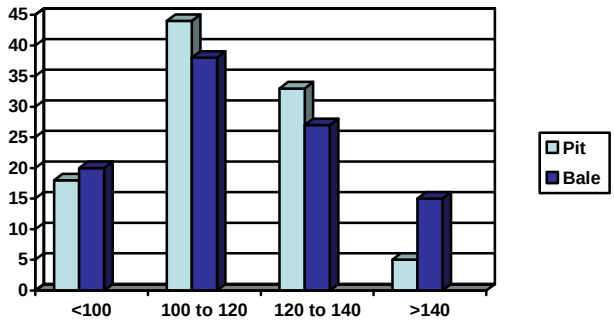


Fig 2. Pit and big bale silage CP (g/kgDM): % in each category



In the case of the pit silages 25% had ME values below 10MJ/kgDM and over 60% had CP contents below 120g/kgDM and with the big bales silages 44% had ME values below 10MJ/kgDM and 58% had CP contents below 120g/kgDM.

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The effect of this variability in silage composition on the amount of concentrates required in rations for different classes of stock can be seen using the following examples.

Table 2. Assumed silage composition for beef cattle rations

	Poor	Normal	Good
DM (g/kg)*	240	240	240
ME (MJ/kgDM)	9.6	10.6	11.2
CP (g/kgDM)	100	130	140
Intake Factor	85	95	100

(*The silages have been assumed to have the same DM content to show differences in intake.)

Example rations

a) Store steer; 350kg gaining 0.7kg/d

	Poor	Normal	Good
Silage kg	16.5	20.5	23.0
Barley kg	2.6	1.8	1.0
Soya bean meal kg	0.2	-	-

The low protein levels this winter mean that around half of all silages will require some protein supplement to be added to cereal mix fed. Failing to do so will gradually reduce dry matter intake, exaggerating the protein deficiency and significantly reducing winter gains.

b) Finishing steer; 450kg gaining 1.0kg/d

Silage kg	19.0	24.5	28.5
Barley kg	4.7	3.3	2.2

Feeding only the normal level of barley, 3.3 kg per day, with poor quality silage would give a gain of only 0.8kg/d and the steer would require an extra 25 days to grow 100kg. The longer feeding period would result in the "apparent" saving in cereals used being reduced by only 60 kg per head compared with feeding the full 4.7 kg required to maintain growth rates at 1 kg per day. Also the extra 25 days would incur increased non-feed costs. The general rule of thumb, when feeding the high levels of cereals required for this winter is to feed a maximum of 2 kg per feed. This will mean either three times a day feeding for the poor silages or mixing the cereals into the silage.

c) Spring calving suckler cow: 650kg, 8 weeks from calving

Silage alone kg	32	28.5	26.5
or			
Silage kg	28	20	19
Straw kg	2	4.5	5

Suckler cows on a unit which suffered from a wet summer and ended up with poor quality silage are also likely to be leaner than normal this autumn. The combined effect significantly increases the risk of cows being in very lean condition at calving next spring and even the risk of downer cows. The way to minimise this risk is to feed cows to gain condition in early winter and if necessary cut back rations pre calving if cows are getting too fit.

d) Autumn calving suckler cow; 650kg in period calving to end of mating

Silage kg	36	44	44.5
Barley kg	3.0	0.75	-
Soya bean meal kg	0.3	-	-

The main risk of the autumn calving cow is reduced fertility. Although feeding 3 kg of concentrates or more plus a protein supplement may appear excessive it is a sound investment, even at today's prices compared with the cost of a barren cow next autumn.

These example rations demonstrate the effects of variation in silage composition on the amount of concentrates required. It is clear that, in order to ration animals effectively, the composition of the silage must be known. It is important, therefore, that producers get their silage analysed and advice on the correct composition and level of minerals and vitamins which need to be fed.

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