

Animal Science Research Centre - Beef Unit Trial Results – 2008 (c)

Effect of feeding either coarse mix or pelleted early weaning concentrates to bucket reared calves

Stock:

40 Jan-Feb 2008 born Holstein and Continental x Holstein bull calves.

Treatments:

The calves were fed colostrum within 6 hours of birth and for a further 4 days and were placed on to the following treatments in individual pens:

Pellets Bucket fed warm Wynngold Bloom Milk Replacer (23% crude protein, 20% oil) mixed at 125g per litre of water twice per day at 4 litres per day. At 7 days of age the milk was increased to 5 litres per day and 18% CP 3mm size pelleted early weaning concentrates (Wynnstay Start 'n' Wean) were offered *ad libitum*. The ingredients within the concentrates, in descending order, were as follows: wheat, wheatfeed, barley, rapeseed meal, sunflower, molasses, distillers, soya bean meal, citrus pulp, full fat soya & minerals. At 3 days prior to weaning the milk was fed at 2.5 litres per day. The calves were weaned at 6 weeks of age.

Coarse Mix Calves fed an identical quantity of milk replacer to the above but offered 18% CP Coarse mix (Wynnstay 'Super Krunch') to weaning at 6 weeks old. The ingredients within the coarse mix, in descending order, were as follows: flaked barley, wheatfeed, sunflower, flaked soya, flaked maize, molasses blend, rapeseed meal, flaked peas, hi pro soya, palm kernal, linseed meal, oatfeed & minerals.

Fresh water and straw were offered *ad lib* from 4 days old to both treatment groups. The calves were moved into group pens at weaning.

Results:

Liveweight (kg)	Pellets	Coarse mix	s.e.d	Sig
Start	44.7	45.0	2.26	NS
3 weeks	54.1	51.0	2.93	NS
Weaning	64.1	61.5	3.83	NS
12 weeks	114.8	107.3	6.58	NS

DLWG (kg)	Pellets	Coarse mix	s.e.d	Sig
Start - 21 days	0.45	0.28	0.075	*
Start - Weaning	0.46	0.39	0.061	NS
Weaning - 12 weeks	1.20	1.09	0.072	*
Start - 12 weeks	0.83	0.74	0.067	NS

NS = not significant, * = $P < 0.05$.

There were no significant differences in wither height or last rib measurements between the treatments.

Bloom score was measured on the following scale: 1= dull, 3 = normal, 5 = shiny

Coat Bloom Score	Pellets	Coarse mix	s.e.d	Sig
Start	3.47	3.21	0.163	NS
3 weeks	3.62	3.38	0.177	NS
Weaning	3.35	3.35	0.101	NS
12 weeks	3.85	3.50	0.115	**

NS = not significant, ** = $P < 0.01$

Feed Intakes (kg) & FCR	Pellets	Coarse mix	s.e.d	Sig
Milk Replacer	21.6	21.6		
Concs Start - Wean	18.3	16.1	3.37	NS
Concs Wean - 12 weeks	109.7	105.6		
Concs Start - 12 weeks	128.0	121.7		
Total Intake	149.6	143.3		
FCR (kg feed: kg gain)	2.14	2.30		

Feed Costs (£/calf) – Jan 2008	Pellets	Coarse mix
21.6kg CMR @ £1,300/t	28.08	28.08
128.0kg Pellets @ £261/t	33.43	
121.7kg Coarse mix @ £346/t		42.11
Total Feed Costs	61.51	70.19
Feed Cost/kg gain	0.88	1.13

Results & Conclusions:

- Growth rates for both treatments achieved the recognised growth targets for rearing bull calves to 12 weeks old of 102-105kg.
- The pellet fed calves recorded significantly higher ($P < 0.05$) DLWG's from start to 3 weeks and from weaning to 12 weeks old.
- Concentrate intakes were higher for the pellets (+6.3kg) however the calves recorded an improved FCR.
- The pellet fed calves gained an extra 7.8kg to 12 weeks of age and had an improved coat bloom score at 12 weeks old ($P < 0.01$).
- Feeding pellets compared to coarse mix reduced feed costs to 12 weeks old by £8.68 per calf and feed costs per kg gain by 25p.
- The recommended specification for early weaning calf pellets is as follows: 18% CP, ~4% Oil, ~9% Fibre, ~8% Ash, ~30% Starch & Sugars & ~12.5ME MJ/kg DM. Pellets should be formulated from ingredients such as: wheat, barley, wheatfeed, soyabean meal, rapeseed meal, distillers, sunflower, citrus pulp, full fat soya, molasses & minerals.

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