

Calf Milk Trial Results

Barrington Organic Partnership Ltd



Animals and Housing



Figure 1: Individual calf pens (0-7 days)

45 calves in total were used on the trial, comprising of female and male Aberdeen Angus (AA) (n= 18), Holstein Friesian (HF) (n=18), and British Blue (BB) (n=4) calves, born between March and June 2021. Calves were housed inside in a well-ventilated, draught-free shed in well-bedded and drained pens. After being removed from their dam, calves were transferred into individual pens for the first 7 days after birth (*figure 1*).



Figure 2: Group calf pen (7-28 days)

At 7 days, calves were assigned to either a control (whole milk) or treatment (CMR) group and moved into group pens (n= 3 per pen), allowing for better social interaction, and providing a more natural environment for calves. Overall, in the trial, there were 7 treatment groups and 8 control groups. Calves were grouped in accordance with their date of birth, meaning every group was made up of 3 calves of a similar age. As groups were subject to calving due dates, calves were not grouped in accordance with sex or breed. To ensure other factors, such as weather or stress, did not affect results all calves aimed to stay housed inside for the full 28 days on trial (*figure 2*).

Feeding and Health Treatments

Calves were removed from their dams within 24 hours and received a minimum of three litres of colostrum within 6 hours of birth, followed by a second feed of an equivalent size before reaching 12 hours old. All colostrum was tested using a kruuse colostrum densimeter to evaluate immunoglobulin G (IgG) content of bovine colostrum by measuring specific gravity (SG). All calves received good quality colostrum.

Between 2 and 7 days of age, calves received 5 L/d, divided into two equal feeds of fresh cow's milk, using individual Wydale teat feeders, at 6:00 and 16:00hrs every day.

After 7 days of age, calves were given 6L/d of whole milk, divided into two equal feeds of 3L.

The control groups received 3L whole milk each, twice daily, for the next 28 days. The treatment groups received 3L whole milk supplemented with Calf milk replacer (balancer) to adjust the dry matter composition of the whole milk twice daily (*see table 1*).

Age (days)	Type of milk	Amount per feed (litres) 2 x daily	DM of whole milk (g/day) (Control group)	Added CMR (g/day) (treatment group)	Total DM (Whole milk+ CMR) (treatment group)
1-2	Colostrum	3	1100	0	1100
2-7	Fresh/ whole milk	2.5	600	0	600
7-14	Whole milk	3	720	90	810
14-35	Whole milk	3	720	180	900

Table 1: Individual Calf Milk Feeding Protocol

The control group received 3L of whole milk each, twice daily, for the whole of the trial period (7-35days). In comparison, when calves on the trial reached 7 days of age, 90g of CMR was added to 3L of whole milk fed twice daily. From day 14 the treatment group had 180g of CMR added to 3L of whole milk fed twice daily. A measuring jug was used to ensure consistency of CMR weight added to whole milk. CMR was added to the whole milk just before feeding and a whisk was used to ensure the powder was mixed in properly. At all stages of the trial, calves were provided with fresh water daily, in addition to ad-lib hay and organic calf cake pellets.

Incidence of Calf Illness

All calves treated for any illness were recorded on the trial. All animals completed the trial, and the results were used in the comparison. There was no difference to incidence of scours or respiratory challenge between treatment or control groups.

Treatment group	Scours	Naval infection	Pneumonia
CMR	4	2	1
Control	5	0	2

Table 2: Instance of Calf Illness

Growth and Performance

Calves were weighed twice over the trial period using electronic scales, to ensure accurate data. At 7 days of age calves were weighed to collect a starting weight value and 28 days later to collect a finishing weight value

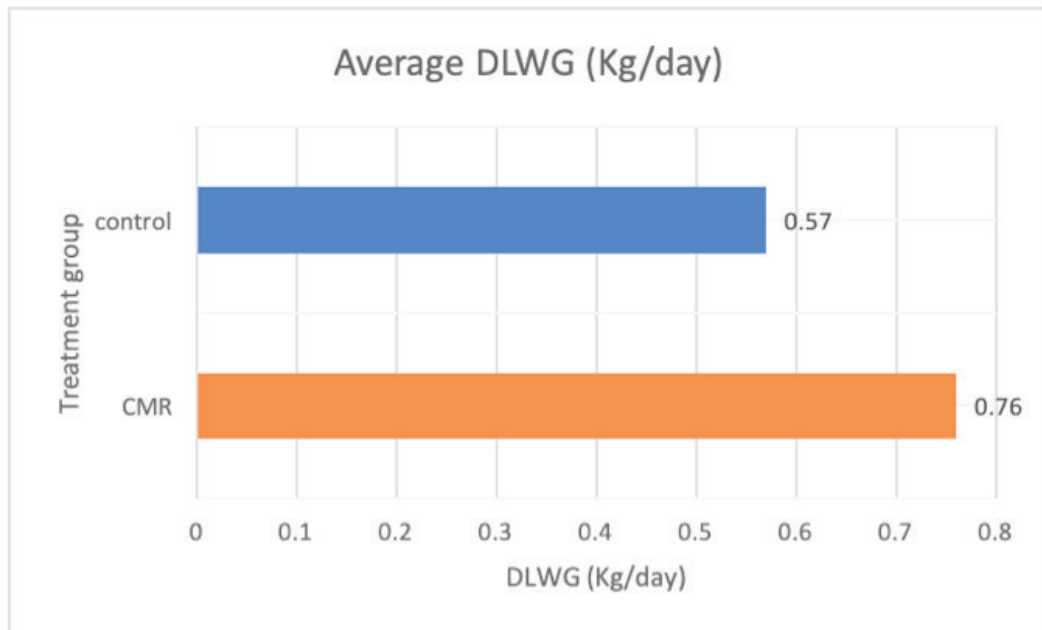


Figure 3. Average DLWG (Kg/day) of calves on control and CMR diet

Figure 3. shows that calves fed CMR grew 33% more over 28 days than calves fed control whole milk.

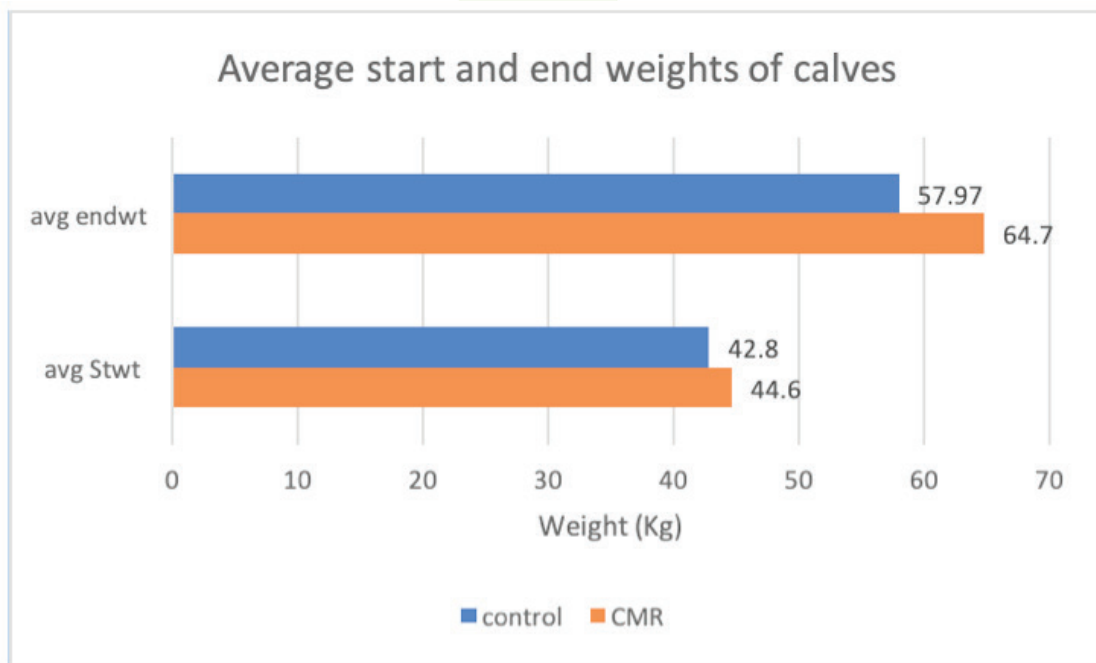


Figure 4. Average start and end weights (Kg) of calves on control and CMR diet

Average calf start weight was similar among both treatments with only a difference of 2kg between treatment (CMR) and control group. However, figure 4 shows that there was a significant difference in live weight gain of 6.7Kg between treatment and control group, with the treatment group averaging an end weight of 64.7Kg compared to 57.97kg in the control group.

Liveweight gains on treatment and control groups were similar irrespective of breed or sex of calf.

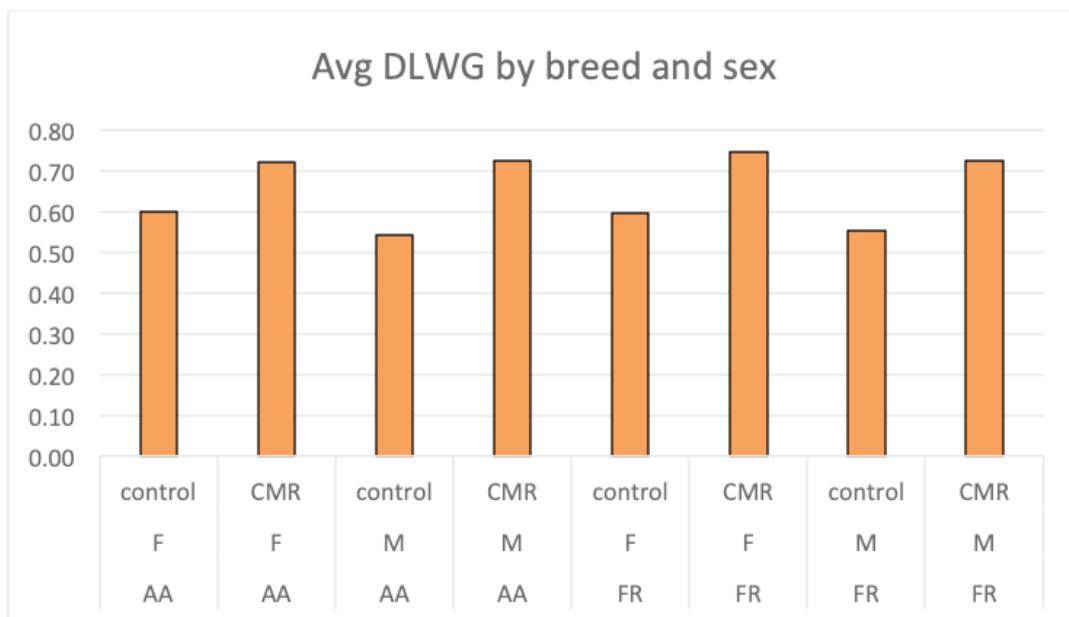


Figure 5. Daily liveweight gain by breed and sex for control and treatment calves.

ORGANIC COMPLEMENTARY

ET245.01.V01

Composition

Skimmed milk powder*, Soybean fiber*, Wheat flour*, Calcium carbonate, Sodium chloride, magnesium oxide, magnesium sulfate, Vanilla flavour.

User Guide

- Feed for calf complementary to forage of good quality.
- Always provide fresh and clean water for the calf.
- This feed can be used in organic agriculture only with a complementation of others raw materials from organic agriculture.
- Do not use for other species.
- * from organic agriculture.
- ** products from farms in conversion to organic agriculture.
- A content in copper over 10 mg/kg in total daily intake can be seriously detrimental for the health of certain sheep breeds.
- Respect the user guide.
- 98.25% of the dry mater of the feed come from agriculture.
- 98.25% of the dry mater who come from agriculture are ingredients from organic agriculture.
- 0.00% of the dry mater of ingredients from organic agriculture are ingredients from farms in conversion to organic agriculture.
- 0.00% of the dry mater of farm ingredients are ingredients who do not come from organic agriculture and do not come from farms in conversion to organic agriculture.

Keep in a dry and cold place

Analytics Constituents

Humidity	5''%	Calcium	1''%
Crude proteins	28''%	Sodium	0.5''%
Fat	3''%	Phosphorus	0.7''%
Cellulose	1''%		
Ash	7''%		

Stabilizer of the intestinal flora

4b1708 Enterococcus faecium NCIMB 11181	1.3*10 ⁹ CFU/kg
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Supplements

Vitamins

3a672a Vitamin A	25 000 UI/kg
3a671 Vitamin D	3 10 000 UI/kg
3a700 Vitamin E (all-rac- alpha-tocopheryl acetate)	60 mg/kg
3a711 Vitamin K3	4 mg/kg
3a820 Vitamin B1	10 mg/kg
3a300 Vitamin C	150 mg/kg

Trace Elements

3b103 Iron (iron sulfate monohydrate)	40 mg/kg
3b405 Copper (copper sulfate)	10 mg/kg
3b605 Zinc (zinc sulfate)	65 mg/kg
3b503 Manganese (manganese sulfate)	60 mg/kg
3b202 Iodine (anhydrous calcium iodate)	0.3 mg/kg
3b801 Selenium (sodium selenite)	0.2 mg/kg

2 meals/day
mix 150 grams of powder/ with 850ml of warm water
Mix 25% complementary with 75% whole milk

Age	
1-3 days	Only COLOSTRUM *
4-7 days	2 liters
week 2	2,5 liters
week 3-7	3 liters
week 8	2,5liters
week 9	2 liters
week 10	WEANING

25 KG

Batch number : P0000
Date of production: 08/08/19

Consume within 12 months after production

Certified by FR-BIO-13
 Agriculture: UE



Daykin Partnership Ltd are experts in Dairy Farming & Animal Feed
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