

Lamb Trial Summary: Spring 2023

Objective: To generate lamb performance data for lambs reared on Lamlac milk replacer (24% crude protein, 24% fat) fed either warm or cold ad libitum.

Trial Site:	Reaseheath College (Nantwich, England)
Breed	Highlander & Primera
Number of Lambs	39 lambs
Feeder Type	1 x Eco Feeder (Training Pen, d2-8) & 2 x Ewe2 Plus (Treatment Pen, d9-35)
Body Weight Measurements	Weekly
Milk Temperature	Training Pen: 25°C for 7 days. Lambs then split into either: 1. Warm Pen - 20°C for a minimum of 4 days, reduced to 15°C through to weaning 2. Cold Pen - 10°C through to weaning

Management & Feed :

Colostrum:

- Lambs left on the ewe to suckle colostrum for 6 to 10 hours (provided lambs were suckling).
- At 6 to 10 hours after birth, the largest lamb from each litter was removed from the ewe & fed a second feed of ewe colostrum (50ml/kg body weight) via a bottle & teat.

Milk Replacer:

- Lamlac mixed at 200g powder + 800ml water = 1 litre of mixed milk
- After the second colostrum feed, lambs were fed Lamlac via a bottle & teat every 6 hours for the first 24 hours
- At 24 hours, lambs were introduced to the **Training Pen** & fed warm milk ad libitum (Lamlac at 25°C) for 7 days via an Eco Feeder with white teats.
- On day 9, lambs were allocated to either the **Warm Pen** or **Cold Pen**:
 - 1. Warm Pen:** Lamlac ad libitum at 20°C for a minimum of 4 days (dependent on lambing date, range 4 to 19 days), reduced to 15°C through to weaning (day 35) via Ewe2 Plus with red teats.
 - 2. Cold Pen:** Lamlac ad libitum at 10°C from day 9 to weaning (day 35) via Ewe2 Plus with red teats.

Water & Dry Feed:

- Fresh water, creep & forage (straw) feed was available ad-libitum (once in group pens on feeder).

Weaning:

- Lambs weaned abruptly at 35 days of age
- At weaning, target weight was a minimum of 10kg, & eating at least 250g creep per day

Results:

Growth Rate

- The birthweight of all lambs ranged from 2.0 to 5.0kg, & weaning weights (day 35) ranged from 9.4 to 18.7kg (Table 1).
- Lambs fed warm milk weighed on average 12.4kg at weaning, with an average daily live weight gain (DLWG) up to weaning of 251g/d.
- Lambs fed cold milk weighed on average 13.1kg at weaning, with an average DLWG up to weaning of 272g/d.

Creep Intake:

- Creep feed per lamb per day was estimated based on weigh in & weigh out of creep per pen, & the average number of lambs in the pen.
- Lambs fed cold milk tended to have greater creep feed intakes through to weaning compared to lambs fed warm milk.

Table 1. Body weight (kg) from birth to weaning at 35 days of age

	Warm Milk (n=19)			Cold Milk (n=20)		
	Mean	Min	Max	Mean	Min	Max
Birth,kg	3.4	2.5	4.0	3.5	2.0	5.0
Week 1, kg	5.2	3.6	7.8	5.5	3.2	7.8
Week 2, kg	6.7	4.7	9.5	7.3	4.4	10.2
Week 3, kg	8.4	5.3	11.4	9.0	5.5	12.0
Week 4, kg	10.9	7.1	14.9	11.5	7.4	16.2
Week 5, kg	12.4	9.5	16.8	13.1	9.4	18.7

Table 2. Body weight at weaning, & daily live weight gain (DLWG) from birth to weaning

	Warm Milk		Cold Milk	
	Mean	Range	Mean	Range
Birth weight, kg	3.4	2.5 – 4.0	3.5	2.0 – 5.0
Body weight at weaning, kg	12.4	9.5 – 16.8	13.1	9.4 – 18.7
Age, days	35.9	35 - 39	35.5	35 - 36
DLWG birth - weaning, kg/d	0.25 ± 0.01	0.17 – 0.36	0.27 ± 0.01	0.16 – 0.42

Conclusion:

- Feeding lambs cold milk at 10°C from week 1 through to weaning had no negative impact on lamb performance.
- Lambs fed cold milk achieved slightly higher body weights at weaning, thought to be due to greater creep feed intake.
- With good attention to detail & farm practices, & environmental temperature permitting, lambs can be successfully reared on Lamlac mixed & fed cold from week 1. Feeding cold milk offers a simple practical method to rear lambs on farm when warm water is not available or when rearing lambs of different ages requires milk to be fed at a constant temperature.