Description of different feeding strategies of transitional milk on five Danish dairy cattle farms

K.Krogh¹, L.Agerholm¹, H.Skovsgaard², K.Fynbo², K.Mikkelsen³, P.Rodriguez⁴, G.Vertenten³

INTRODUCTION

Transitional milk feeding refers to the practice of feeding the milk obtained from 2 to 6 milkings after calving. It can be beneficial for the gut health and local immunity of young calves and optimizes the use of dam vaccination against calf enteric diseases. However, systematic transitional milk feeding is not commonly practiced on modern dairy farms.

OBJECTIVE

The objective of this study was to assess transitional milk feeding practices of five dairy farms in Denmark. Additionally, herdspecific checkpoints for assessing the effectiveness of

MATERIALS AND METHODS

- Five Danish dairy farms (in total 2200 milking cows) with motivated calf caretakers were chosen for this study. The implementation of transitional milk feeding at the farms, involved three main aspects: Collection of milk (between 2 to 6 milkings post calving), Storage (either through cooling, freezing, or immediate feeding without storage), and Feeding strategy (one or twice a day, from 100mL to 4L and for 3 to 60 days).
- Transitional milk samples were collected and tested for bacterial count by culturing or PCR techniques. Additionally, the farms recorded data on colostrum parameters (serum IgG levels and Brix refractometer measurements from day 1-7). Moreover, a diarrhea score ranging from 1 to 3 (1: normal, 2: loose, 3: watery) was assigned to each calf based on the presence and severity of diarrhea.

transitional milk feeding are proposed.

Tailoring the handling and feeding of transitional milk to individual farm conditions can positively impact diarrhea scores, but it is crucial to monitor bacterial levels when implementing new feeding approaches for young calves.



To download this paper, scan the QR code!

RESULTS

Transitional milk equipment, collection, storage and feeding procedures

All five farms pooled their transitional milk, but each farm had different approaches to storage, feeding procedure, and feeding strategy (figure 1).

Diarrhea Scores monitoring

- Diarrhea scores were available from three farms. After implementation of the transitional milk feeding, there was a 46%, 55% and 100% reduction in diarrhea scores for Farm 2, 3 and 4 respectively. (Fig 2).
- There was no influence on IgG levels.
- Bacterial count analysis of the transitional milk revealed bacterial growth during cooling in all farms.
- Bacterial count analysis of the transitional milk revealed bacterial growth during cooling in all farms.
- Cooling transitional milk after collection was preferred to freezing.
- Safe storage and proper cooling is essential and can be

FIGURE 1. Overview of the collection, storage and feeding procedure sfor the five farms. *MR: Milk replacer **waste milk: milk with high cell count and/or milk cows treated with antibiotic.

	Farm 1	Farm 2	Farm 3	Farm 4	Farm 5
Collection of milk	2-3 milkings	2-3 milkings	2-3 milkings	2-4 milkings	2-6 milkings + waste milk**
Handling	Pooling	Pooling	Pooling	Pooling	Pooling
Storage procedure	Freezing Cooling	Cooling	Cooling	No storage (fed fresh)	No storage (fed fresh)
Storage equipment	Cooling tank Freezer Fridge	Fridge Milk taxi	Cooling tank Colostrum bag system	Milk waggon with separation	Milk taxi
Feeding procedure	Fed separately	Mixed in MR*	Mixed in Whole milk => MR*	Fed separately	Mixed in MR*
Feeding volume and frequency per calf	1L	200-500ml	200-500ml	4L	100-300ml
	morning	morning + evening	morning + evening	morning + evening	morning + evening
Total feeding period	3 days	14 days	14 days	5 days	60 days

FIGURE 2. Number of calves with mild-severe diarrhea (score 2-3) before and after implementation of transitional milk feeding.



FIGURE 3. Two of the farms invested in a small tank installed next to the milking parlor.



eased by installing a small cooling tank next to the milking parlor **(Fig 3).**

AUTHORS' AFFILIATION

1. LVK

2. Calvex

3. MSD Animal Health

4. Merck Animal Health, Kirkland, QC, Canada

MSD Animal Health Copyright © 2024 Merck & Co., Inc., Rahway, NJ, USA and its affiliates. All rights reserved. GL-SOT-220700002



Abstract number: 1164.