

Mother-bonded calf rearing in organic milk production: Lessons from pioneer farmers in northern Europe

Jesper Overgård Lehmann & Lisbeth Mogensen¹

Key words: calf rearing, dairy farming, mother-bonded, practice

Abstract

Pioneer farmers in northern Europe have developed a multitude of different ways of keeping cow and calf together for longer after calving. The practice, the timing and period around both separation and weaning are for the nine surveyed farmers the most difficult to manage. Future research should focus on positive and negative consequences of length, type of contact and methods of separating and weaning.

Introduction

Organic dairy farmers in northern Europe commonly separate calves from their dam around 24 hours after birth. Main reasons for the early separation are 1) Ability to harvest and sell more milk and gain a higher profit, 2) Artificial feeding allows closer monitoring, 3) Separation is thought to facilitate milk-let-down in the parlour and 4) Early separation is thought to minimize separation stress response (Meagher et al., 2019). However, consumers increasingly question this practice (e.g. Weary & von Keyserlingk, 2017). Several dairy farmers throughout northern Europe have developed systems for keeping dam and calf together, and the EU CORE Organic project GrazyDaisy aims to develop systems that allow for increased contact between cow and calf. That includes building on practical experiences and lessons of pioneer farmers, who have developed systems for mother-bonded or dam-rearing of calves, terms used to denote the rearing of a calf by its own mother. This short paper briefly presents selected case farms that practice different forms of mother-bonded rearing.

Material and methods

Farms selected as cases had to have a system implemented for mother-bonded calf rearing in the period right after calving. The length of the period with mother-bonded rearing could vary from a few weeks to the full milk-feeding period. This study excludes farms with a hybrid of mother-bonded and foster rearing as well as exclusive foster systems. Two or more researchers from the GrazyDaisy project visited each of the selected case farms to collect data and other information.

Results & Discussion

Nine case farms surveyed so far represent nine different approaches to mother-bonded calf rearing (Table 1) from Scotland, The Netherlands and Germany. Overall, cow and calf are together either the full day or half day, and most surveyed farms practice a combination with fulltime right after calving followed by halftime. Farmers separate cow and calf either abruptly or gradually where calves for the latter have a more restricted access to their dam by either limited time together or limited contact

¹ Department of Agroecology, Aarhus University - Foulum, Denmark, www.agro.au.dk.
Corresponding author (JO Lehmann): JesperO.Lehmann@agro.au.dk.

through a barrier. Typically, the restricted access through a barrier is achieved by moving calves to a separate pen adjacent to the cow area where cows can reach through or over to the calves whilst preventing the calf from suckling. All farms practice either abrupt weaning or gradual weaning through either limited contact or the use of a nose flap. Farm 5 use a milking robot to control access between cow and calf.

Table 1: Characteristics of system for mother-bonded rearing on case farms*

Farm	Age of calf in wk at:		Method of:		Weeks together:	
	Separation	Weaning	Separation	Weaning	Fulltime	Halftime
<i>Scotland</i>						
1	22	22	Abrupt	Abrupt	1	21
2	26	25	Gradual	Gradual	13	13
<i>The Netherlands</i>						
3	4	12	Abrupt	Gradual	3	1
4	10	10	Abrupt	Abrupt	10	0
5	17	19	Gradual	Gradual	Gradual**	
6	16	10	Gradual	Abrupt	8	8
7	10	12	Gradual	Gradual	6	4
<i>Germany</i>						
8	14	13	Abrupt	Gradual	14	0
9	15	15	Abrupt	Abrupt	15	0

*Average for heifer calves given when different from bull calves.

**Gradual decline controlled by a milking robot.

The nine farms surveyed here reflect a complexity of mother-bonded calf rearing systems that the individual farmer has made work in their own setting. This complicates deriving concrete advice for other farmers, and possibly reflect why science is not clear on many of the issues surrounding these systems (Meagher et al., 2019). Furthermore, the practice, the timing and period around both separation and weaning are for the nine farmers the most difficult to manage, and their current practice have evolved over years. Finally, there appears to be a compromise between the desire to allow cow and calf more time together whilst ensuring sufficient saleable milk as well as having calves gain more but not too much weight per day. Calves will e.g. need to consume an average of 7.1 and 13.8 kg ECM per day over three months if milk is to meet the entire energy need of a growth rate of 700 and 1,400 g per day, respectively (Based on NRC, 2001).

Your suggestions for research and support policies to develop further organic animal husbandry

Research should focus on elucidating the positive and negative consequences of short or long periods with mother-bonded rearing, halftime or fulltime contact, abrupt or gradual separation and weaning as well as different stable systems. This is crucial to ensure the development of systems that are beneficial for both farmer, cow and calf.

References

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