

Suckling as rearing method on dairy farms

The effect on farm system aspects of two dairy farms in the Netherlands



Barbara Reid 1984

Author: Jos Langhout

Supervisors: Jan-Paul Wagenaar and Ton Baars (Louis Bolk Instituut)
Egbert Lantinga and Simon Oosting (Wageningen UR)

June 2003

Summary

Maternal behaviour, interactions and contact between cow and calf is limited or absent in modern dairy production due to the widely use of artificial calf rearing. Introduction of suckling on a dairy farm has effects on many aspects such as calf growth, animal health, milk production, rearing costs, behaviour, welfare and naturalness etc. Depending on the purpose and duration of the suckling period, three methods can be distinguished.

- Single suckling without additional milking, calves suckle with their own mother during the colostrum period. The suckling period varies from 24 hours to 3 days.
- Single suckling with additional milking, the cow is suckled by a calf and is also milked by the farmer. Calves suckle during the period of nutritional need for milk, the first 6 to 12 weeks.
- Multiple suckling without additional milking. Two or more calves suckle with a nurse cow, the period varies from 6 to 12 weeks.

In a pilot study on two farms the effect of suckling systems on calf growth and milk production of dairy cows was assessed. Furthermore, the development of naturalness on the case study farms was described, as well as the motivation, for the use of suckling as rearing method, of seven farmers.

There was a big difference between the two case farms used for this study. Farm I is a biodynamic dairy farm with double purpose cows in a deep litter stable. Low replacement and low calf mortality characterised this farm with a moderate production per cow. Farm II is an organic dairy farm with a specialized milk breed (HF) in a cubicle stable, with high replacement, high calf mortality and high production per cow. Both farmers aimed at the improvement of durability of their cows. The first farmer aimed to improve udder health and social behaviour. The second farmer had expectations on lower calf mortality as result of suckling.

Live weights of calves at the two farms were measured weekly for a period of five months. At the first farm 12 suckling calves were weighed pre- and post-weaning. At the second farm 10 bucket-fed calves and seven suckling calves were weighed pre- and post-weaning. Suckling had a positive effect on calf growth. At Farm II the suckling calves had a higher weight gain as the bucket-fed calves. Suckling calves reached earlier a life weight of 100 kg and could be weaned sooner than bucket-fed calves. Weaning at a younger age saves milk consumption costs. High weight gain is indicated to result in higher milk production for heifers that had been allowed to suckle as calves.

Data on milk production were collected monthly and covered a period of five months for farm I and four months for Farm II. The milk production of non suckled cows was higher than of suckled cows at Farm I. At farm II only a small difference was found between suckler and non suckler cows. The reason for this small difference was the incidence of suckling calves 'borrowing' milk from non-suckled cows in the herd.

The milk consumption at both farms was estimated at 10 kg per day, in the first 14 days after birth in with a single suckling method with additional milking. After 14 days the milk consumption per day was 15 kg using a single suckling method with additional milking. With the use of a multiple suckling method, was the milk consumption 10 kg per day.

Total milk consumption by suckling, in a pre weaning period of 84 days, was estimated at 840 kg per calf at Farm I. At farm II, the total milk consumption by suckling, in a pre weaning period of 65 days, was estimated at 880 kg per calf.

Total milk consumption, by suckling, increased with 300 kg per calf, with a value of 120 euro at Farm I. Total milk consumption by suckling, increased with 160 kg per calf at Farm II,

representing a value of 64 euro per calf. The milk production of one cow on yearly basis was sufficient to compensate extra milk consumption by 15 calves at Farm I and 25 calves at Farm II. The combination of suckling methods used and duration of the suckling period decreased consumption cost to acceptable levels for the farmers. Farm I used a single suckling period with additional milking for only 14 days, after that, multiple suckling without additional milking until 84 days. Farm II used a single suckling period with additional milking for 60 days and after that, multiple suckling without additional milking for five to seven days. Both farms used multiple suckling systems in order to limit the milk intake and to stimulate the intake of roughage. Milk consumption costs on short term could be compensated by increased milk production benefits on long term.

An important argument to use a suckling system, mentioned at both pilot farms, was increased naturalness of the farming system. Naturalness refers to the avoidance of inorganic, chemical inputs, to the application of organic, agro-ecological principles and to the respect for the 'integrity of life'. During the weekly meetings were opinions, experiences and vision on calf rearing exchanged with the two pilot farmers. The farmers' opinion on naturalness changed with the introduction of the suckling system. The farmers used suckling methods according to their own perception of naturalness.

The motivation of farmers to use suckling as calf-rearing method was analysed. In semi-structured interviews with open questions experiences and expectations of seven farmers and four experts on suckling systems were collected and analysed with an objective tree. Problems resulting from the bucket feeding system were indicated as reasons to experiment with suckling system. Compulsory feeding of cow milk to calves, diarrhoea problems, high somatic cell count and mastitis, public opinion and development of social behaviour were reasons to use suckling systems as well. These expectations of positive effects on the long term were high. Expectations on improved udder health, development of social behaviour and improved health of calves and cows are supported by several studies. The strong points of the system, according to farmers, were less labour, pleasure and enjoyment, and increased activity of cows. Weak points were fear for inter-suckling and decreased milk ejection. Next to economical benefits, were social and welfare benefits arguments mentioned for the use of suckling.

The suckling systems at the farms under study were not static. Many positive effects of suckling are found in literature and in practice farmers experienced and expected many positive effects too. Farmers with suckling systems utilized these positive effects. Farmers attempted to reduce or prevent the side effects of suckling, by the use of different methods, duration and number of calves. With this combination of methods farmers developed their own 'tailor made' suckling system. .