



Rearing calves with nurse cows: experiences of French organic dairy farmers

Improving animal welfare on farms is currently a major issue, in response to expectations of citizens and consumers. In organic farming, reflections are continuing on how to change livestock production practices to allow animals to express their natural behaviour most fully. Calf rearing in dairy systems is a focus of attention. At the moment, separating calves from their mothers remains the most common practice, but new techniques that favour the maternal bond are appearing. Understanding these practices better to identify conditions under which they can be adopted by more farmers was the goal of a survey conducted in spring 2018 of organic dairy farmers who rear calves with adult cows. This work has been made under the GrazyDaiSy project, funded by the European Union program Core organic.



Calf and their mother grazing in eastern France (source: Mathilde Belluz)

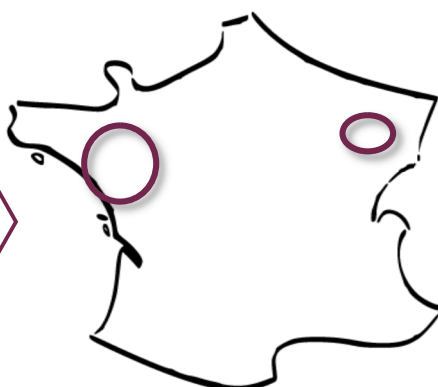
A socio-technical survey

The first step consisted of identifying farmers following this practice, using information from advisors and technicians of organic agriculture organisations, as well as veterinarians. The surveys were socio-technical, that is, focused on the farmers' calf-rearing practices, their view of this form of livestock production, and its advantages and disadvantages.

Ultimately, 20 dairy farmers were surveyed: 5 in the Lorraine region and 15 in western France. Farmers were **younger** and **more highly educated** than the average French organic farmer and most of them participated in **exchange networks** with other colleagues. In their regional contexts, their farms are representative of organic dairy farms. Fine-scale analysis distinguished **three types** of dairy farmers: organic pioneers (converted long ago, with low-yielding herds: 4500 L/cow), those with small extensive farms (small, low-yielding herds: 44 cows at 5400 L/cow), and those with new intensive organic farms (recently converted, with large, high-yielding herds: 75 cows at 6000 L/cow).

15 farmers in western France:

- ◆ UAA = 119 ha
- ◆ No. of dairy cows = 62
- ◆ Milk prod./cow/yr = 5463 L
- ◆ % grassland = 88%
- ◆ MWU = 2.7

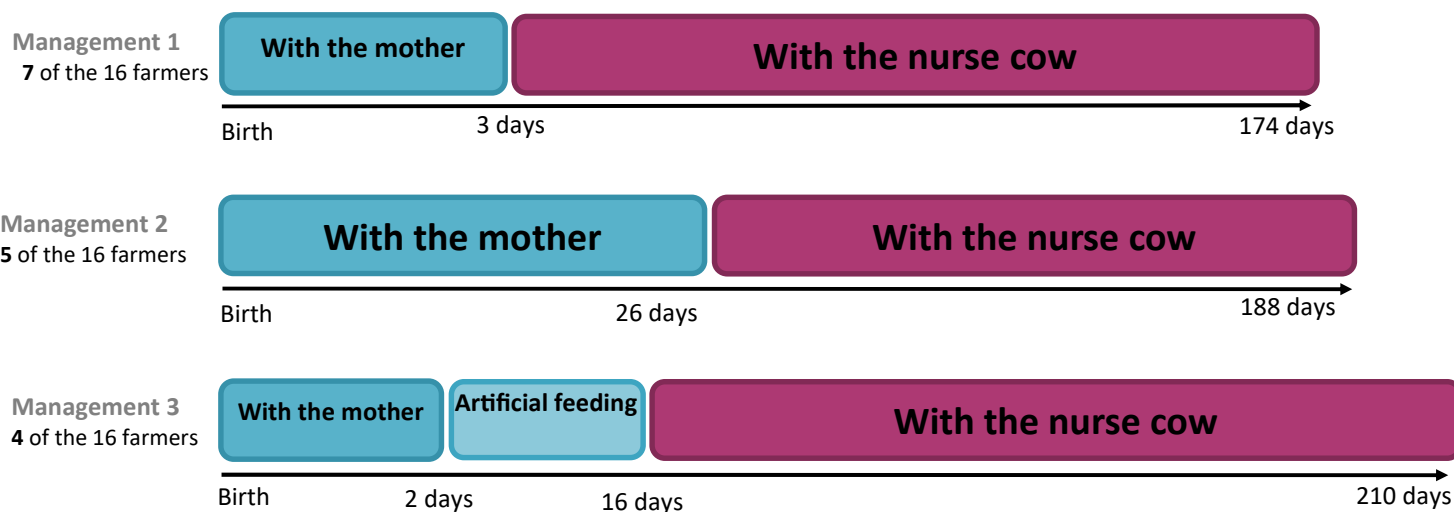


5 farmers in Lorraine :

- ◆ UAA = 126 ha
- ◆ No. of dairy cows = 70
- ◆ Milk prod./cow/yr = 5873 L
- ◆ % grassland = 84%
- ◆ MWU = 2.5

Calves nursed by nurse cows

Sixteen dairy farmers used “nurse cows” to feed their calves. The practice consists of leaving 2-3 calves with a cow, separated from the dairy herd, until weaning (an average of 6 months). Usually female calves identified as future replacement heifers are reared in this way, but sometimes male calves are, too. The early life of calves can be managed in three ways, as illustrated below.



Which cows are selected as nurse cows?

Each farmer carefully decides which cows will become nurse cows, a choice that provides flexibility in management of the dairy herd. Farmers tend to choose “problem” cows: older cows with lower-quality milk (high somatic cell counts) or those difficult to milk. After the nursing period, nurse cows can return to the dairy herd, be culled (for incurable problems), or continue serving as nurse cows.

How is the group of nurse cows managed?

Of the 16 farmers surveyed, 14 put the group of nurse cows and their calves to pasture after 15 days. There is no need for a specific type of fence, but one needs to accept that the calves will walk under the wires at first. Since their “milk pail” is inside the field, though, they will return as soon as they are hungry. The “organic pioneers”, who have more experience with the practice, indicate that the calves are wilder at first; they must be visited regularly to keep them from becoming “wild deer”. After weaning, they become used to humans and more docile. The farmers did not notice any problems with these animals once they became dairy cows in the milking parlour.

What are the adoption techniques?

This key period determines the success or failure of this type of nursing. Adoption requires surveillance and particular attention for 1-2 weeks, when the calves and nurse cow are placed in a stall away from the dairy herd. If the cow resists, certain farmers use restraining techniques. Only farmers who perform “group adoptions”, in which a calf has access to several nurse cows, mention failure. Adoption thus seems easier when a nurse cow/calf pair is created.

When and how to separate the calf?

All of the farmers surveyed perform late weaning at 4-9 months of age. They have different reasons for doing so, such as calf health, acquisition of a stronger immune system, and learning of social rules, but also for practical reasons, usually separating calves and nurse cows when they go to the rearing house for wintering. Only one farmer performs progressive separation, gradually decreasing the contact time between calves and nurse cows. Two farmers use homeopathy to calm both calves and nurse cows. Weaning causes animals to moo for several days, but otherwise it is not generally considered a difficult phase.



How do farmers feel about the experience?



Increased growth allows for earlier calving

All of the farmers highlight increased growth, and 11 of them want to increase productivity by decreasing the age at first calving from 36 to 24 months. They thus decrease the number of non-productive animals on the farm and consequently forage requirements, while producing more milk during a cow's productive life with the same replacement rate.

Healthier herds

External factors that favour infectious diseases and digestive problems (nipple, milk temperature and milk amount) are better controlled. Early grazing of calves with the cows increases calf immunity, which is why the farmers state that their calves are generally in good health. No treatment is given to prevent cases of diarrhoea or the development of parasites. There are thus fewer sick calves and thus lower veterinary bills.



Group of nurse cows and their calves grazing in the experimental farm of INRA-Mirecourt, eastern France source: Mathilde Belluz

Work that restores meaning to the profession of a dairy farmer

Feeding milk to calves (in pails, feeders, etc.) is considered difficult, demanding, and often called a "chore". The group of calves and nurse cows needs only daily surveillance. Farmers consider it more pleasant and interesting. Some decided to place (or place once again) observation at the heart of their profession. In this way, they detect the signs that indicate the health and welfare of their animals more rapidly.

The search for economic performance

Descriptions of the practice's advantages for economic performance vary among the types of farmer. Whether to decrease production costs of the milk-feeding phase, maximise production capacity, decrease demanding work, or maximise the use of herbage, rearing calves with nurse cows provides answers for improving each of these aspects.

Calves nursed by their mother

Among interviewed farmers, 4 leave calves with their biological mother for a short period (15-45 days) before switching them to artificial feeding (no nurse cows). They follow this practice to ensure the health and welfare of the animals or decrease work demands. To avoid decreasing milk production, the calf is separated from its mother before weaning. It may then refuse to feed for at most one day before accepting another feeding system. These farmers consider the use of nurse cows too constraining and think that they do not have the area, buildings, or animals necessary to set up this practice.



Group of cows and their calves in western France (source: Mathilde Belluz)

Combine several innovative practices

Alternative feeding practices are only one action among others that dairy farmers use to increase the autonomy of their livestock systems. Consequently, these practices are often combined with other innovations such as cross-breeding, once-a-day milking, reflection about calving periods, dynamic rotational grazing, etc. Farmers can combine these structural components of farms to create consistent and logical configurations that to help them attain their objectives.

Word cloud: wild, reproduction, economic, observation, network, health, growth, farmer, docility, easy, exchange, herbage, animal welfare, system, autonomy, calf, production, work, grazing, nurse cow, once-a-day milking, cross-breeding



Toward wider diffusion of the practice

The accounts of the dairy farmers are in line with results obtained by the organic experimental station of INRA at Mirecourt, France. A group of 9 calves fed by 3 nurse cows gained 238 g more per day per calf than a group fed by artificial feeding. This encouraging growth rate allowed the calves, once they became heifers, to be inseminated at 15 months rather than 27 months, thus gaining one year of production. In GrazyDaiSy project, subsequent to this first field-study, parasite monitoring (blood sampling, scatology, weighing) will be performed on about 15 farms that combine feeding of dairy calves with nurse cows and grazing.

Other studies will begin soon in France, especially at the INRA site at Marcenat, which works to produce technical and economic reference data for cow-calf rearing. Given the positive effects on calf rearing and the general satisfaction of dairy farmers in following this practice, nurse cows surely have more to reveal...

For more information: Belluz M., 2018, L'élevage des veaux laitiers par des vaches adultes, une technique innovante en élevage biologique, 40 pp., Master's thesis, VetAgro-Sup, Campus Agronomique de Clermont-Ferrand.

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