

# A PROSPECTUS FOR A SCOTTISH COW WITH CALF SYSTEM



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• Opportunities •

• Challenges •

• Economics •

• Cow and calf health •

• Animal welfare •

• Housing •

• Marketing and sales •



# KEEPING COW WITH CALF

## Bringing Innovation to Scottish Dairying

This prospectus presents information for farmers and new entrants interested in establishing a cow-with-calf (CwC) dairying system. Information presented is from a project which investigated various aspects of CwC systems, including:

- How the system performs in terms of human, animal, environmental and financial health.
- An economic analysis of the system at a farm level; investigating calf growth, cow longevity, animal health and more.
- What business models and marketing channels are available for cow-with-calf dairy products.
- An assessment of the barriers to uptake of the CwC system before, during and after implementation.

The majority of farm data were collected from a CwC farm in southern Scotland (Rainton Farm); including cow information (breeds, yields, health records, longevity), calf information (growth rates, health records), economic data (milk sales, veal sales, medicine costs) and carbon foot printing data. Interviews were also held with other UK farmers operating a CwC system and from an online survey aimed at the dairy sector. Published data and experiences from other CwC farms and research groups were also considered.



## Advantages and Challenges of Cow with Calf Dairying

Cow with calf (CwC) dairy systems involve raising dairy cows and their calves together, with calves suckling from their mothers until weaning. This differs from conventional dairying, which generally involves feeding and rearing of calves separately from their dams. CwC dairies vary in terms of size, breeds, grazing management, facilities, calving and milking frequency. The level and type of cow-calf contact can also vary from full to partial contact and cow or calf led.

### Advantages

- **Labour saving:** once a day milking and reduced calf feeding.
- **Ready market:** consumers willing to pay more for CwC products.
- **Positive relationship with consumers.**
- **Potential health and welfare benefits:** reduced disease in adult cows (mastitis), content cows and calves.
- **Holistic whole farm approach = benefits from cows through to environment.**

### Challenges

- **Lack of information:** poor information available on how to operate CwC systems and different types of systems.
- **Facilities:** facilities need adapted for cows and calves to be housed together safely and separated easily.
- **Management challenges:** under-researched so hard to find info.
- **Weaning:** challenges during separation from an animal welfare point of view which can be distressing.
- **Economic challenge:** less milk produced with higher costs.
- **Economic challenge:** finding a market for milk-fattened calves.
- **Reputational challenge:** from conventional dairy sector actors.
- **Lack of route to market for products;** direct selling needed currently.



## Economic consequences of cow-with-calf systems

In conventional systems, separation of the cow and calf soon after birth results in a higher amount of saleable milk, which in turn increases farm profits.

However, there are also other important aspects of farm economics to take into consideration when running a CwC dairying system.



### Benefits of CwC systems

- Higher growth rates observed in calves suckling their dams in comparison to calves in conventional systems.
- Reduced veterinary expenses if herd health improves, for example, reduced somatic cell count and mastitis incidence.

### Challenges of CwC systems

- Lower volume of saleable milk available due to suckling.
- Some modification of farm facilities may be needed (for example construction of a calf creep area).

### Are CwC systems profitable?

- A milk payment of at least 36 ppl (5% higher than the current organic payment) and beef sales at premium prices are needed to correspond to incomes of an organic herd of similar herd size.
- A milk payment of ~40ppl and beef sales at premium prices are needed to correspond to incomes of an organic herd of similar herd size.

## What are the health implications of keeping cows with calves?

There are likely to be positive and negative health implications of keeping cows and calves together. Data from Rainton Farm, from an MSc project using data from Thünen Institute (Germany) and published studies was considered.



### Cow udder health

- Somatic cell counts are lower in cows suckling calves than in a conventional system and overall rates of mastitis are low.
- Use of intra-mammary tubes (for prevention and treatment of mastitis) is well below the RUMA (Responsible Use of Antibiotics in Agriculture UK) 2020 targets. It is thought that calf suckling achieves better udder evacuation, improving udder health.

### Calf health

- Some farmers operating a CwC system found increases in diseases such as pneumonia, cryptosporidium and salmonella in calves.
- Farmers have experienced problems when first establishing the system, but careful management of calves and use of vaccines addressed the problem.

### Overall antibiotic use

- Data from Rainton Farm suggest total use of antibiotics across the herd is well below RUMA 2020 targets, and below an estimated 2018 industry baseline of 17 mg/kgf PCU (based on 40% national herd). The level on the CwC farm studied was approximately 14mg/kg PCU compared to a RUMA target of 21 mg/kg PCU.

## Animal welfare in a cow-with-calf system

The animal welfare aspect of cow with calf systems is an important driver for consumers and farmers.



### Cow-calf bonding and positive welfare

- Allowing cows and calves to bond and cows to rear their calves is an important way of providing positive welfare for dairy cows and calves.

### Human-Cow interactions

- Allowing cows to maintain cow-calf bonds can promote positive attitudes towards animals in staff members. In turn, this can promote positive welfare for cows and calves and improve staff wellbeing.

### Cow and calf behaviour

- Calves suckle cows many times per day. Cows will groom the calves while they suckle reinforcing the bond.
- Male calves suckled and were groomed more frequently than female calves.

### Weaning

- Because a strong cow-calf bond is formed, weaning the calf can be a stressful time for both cow and calf.
- Some farms have found that a gradual, or three-step weaning is the least stressful for cow and calf. The three-stage method involves, firstly, overnight separation to encourage consumption of solid feed, rumen development and build peer bonding for a couple of months. This is followed by a week with restricted suckling, often using nose flaps, to reduce milk dependency and then finally full separation.

## What modifications are needed to a standard dairy shed to house cows with calves?

Cows and calves at foot will need to be housed for at least part of the year in the Scottish climate. The need to modify the cow housing is one of the potential barriers to conversion identified by farmers.



### Calf creeps

- Beyond the first few days of life, calves need an area of their own where they can congregate away from the cows at busy times. Calves will naturally lie together in 'nursery' areas.
- A calf-only creep area is advised. At Rainton Farm, an area of the cubicle beds is used (see image). Segregation gates can also be used to exclude cows from an open bedded area for use by the calves.

### Stocking density

- It is advisable to have lower stocking density in a house where calves and cows are housed together, allowing cows more space to move around the slower moving calves.

### Milking parlour

- In the first few days after their entry to the lactating herd, the calves stay close to their dams which can be a problem at milking.
- A tandem milking parlour may be used as it allows the calf to join the dam in the milking parlour.
- However, other farmers report that the cow and calf get used to the short separation and other types of parlours can be used.



## Marketing and Sales of CwC Products

Direct marketing is the most appropriate route for CwC products. Studies show that consumers are willing to pay a premium for high quality, high welfare, sustainably produced local produce and consider CwC as such.

There are opportunities for producers to add value, create brands and communicate their unique farming stories during marketing of CwC products.



However, a mindset change is needed to boost numbers of CwC farms, moving away from the conventional dairy focus of high volumes and producing more from less. Recent media spotlights on conventional dairy systems have had a negative impact on the UK dairy industry. As public understanding of conventional farming systems develops, we are likely to see increased consumer demand for high-welfare dairy systems which can demonstrate their credentials.

### Branding and values

- Branding is key. Without a brand, a farm's unique story, values and credentials are lost when the produce enters the mainstream food and drink supply chain.
- CwC systems convey a positive image and emotion to consumers which should be built upon and may be best suited to farms which can create their own brand to raise consumer awareness.
- Visual marketing is key and easiest to achieve through direct marketing, not major retail, as the individual farm story can get lost under a larger more corporate banner.

### Marketing and labelling

- Currently, CwC products require niche marketing – demonstrating specific benefits/values to fulfil specific consumer wants.
- CwC products are likely to attract consumers who value high animal health and welfare, environmental sustainability, and ethical farming practices – this audience should be targeted.
- In the future, if demand is high or governmental policy on animal production changes, there may be potential for more mainstream processing and sales of CwC dairy products.

## More Information

For more information on the project and any of the specific objectives, visit [www.keepingcowwithcalf.com](http://www.keepingcowwithcalf.com)

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