Transform
Dairy
Net

D5.3. Practice Abstracts

batch 1

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Practice Abstract Information

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[11] **Type** _[1] **R**=Document, report; **DEM**=Demonstrator, pilot, prototype; **DEC**=website, patent fillings, videos, etc.; **OTHER**=other_ **Dissemination level** [1] **PU**=Public, **CO**=Confidential, only for members of the consortium (including the Commission Services), **CI**=Classified

Project identifier	2024H2020_101133326_TDN
Title of the project	TransformDairyNet: Working together to upscale Cow-Calf-Contact dairy production and beyond
Geographical location	Country: IE Main geographical location: IE021 – Dublin
Editor	FVE
Project Coordinator	Name: UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN (UCD) Address: University College Dublin, Belfield, Dublin 4, Ireland E-mail: siobhan.mullan@ucd.ie
Project period	2024-2027
Project Status	Ongoing
Main funding source	Horizon Europe
Total Budget	2 763 318,36€
Objective	TransformDairyNet aims to increase the resilience and sustainability of the European Dairy sector by facilitating a network to compile, co-create and share ready for practice knowledge and innovation in CCC systems at national and European levels. TransformDairyNet will mobilise all relevant actors to work together to transform the dairy sector and create pathways for transforming other agricultural practices.
Description of project activities	TransformDairyNet will mobilise National and European MA CCC knowledge and innovation networks (WP1) to facilitate an acceleration of sustainable pathways to CCC (WP2). It focuses on five main interconnected themes for both cow and buffalo dairy systems: 1) Harvesting and compiling existing knowledge ready for practice and identifying end-user needs (WP3), 2) Co-creating new CCC knowledge – addressing end users' needs through innovation (WP4), 3) Co-creating and digitalising CCC knowledge ready for practice (WP5), 4) Communicating, dissemination and implementing CCC knowledge ready for practice (WP6) and 5) Establishing CCC legacy for transforming farming systems to net zero (WP7).
Description of the context of the project	Dairy is the most important food sector in EU agriculture, present in all Member States. Removing the dairy calf from the dam shortly after birth is dairy's keynote ethical issue . As shown in the EU's Farm to Fork Strategy and the heart of the Green Deal, society demands sustainable animal-friendly production systems producing high quality food with low environmental impact. A fundamental knowledge gap for farmers, markets and policy actors is credibly measuring and communicating the sustainability credentials of livestock systems. Providing cow-calf contact (CCC), i.e. allowing calves to stay with their dams or a foster cow for

	months rather than hours/days, promotes normal, pleasurable cow and calf social behaviour, social skills, social competence.

Keywords list

- TransformDairyNet
- Dairy Sector
- CCC
- Cow-Calf-Contact
- Animal Welfare
- Dairy Industry
- Sustainable Production
- Agricultural production system
- Farming practice
- Animal husbandry and welfare

Disclaimer

Table of Contents

1. Introduction

This document presents the first batch of Practice Abstracts produced by the TransformDairyNet project. Six Practice Abstracts have been completed by month 18 and are published on the EU CAP Network and will be on TDN website.

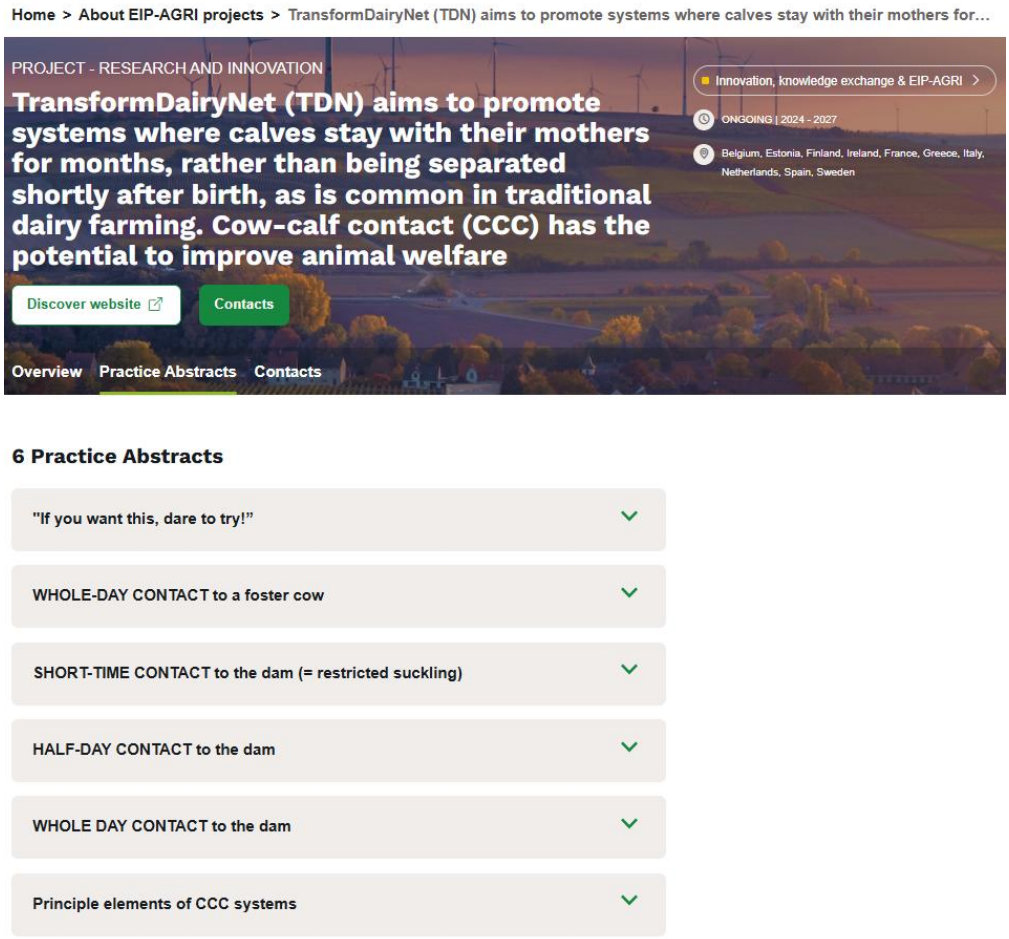

Figure 1. EU CAP Network TDN Page

The Practice Abstracts provide concise and practical summaries of innovative approaches, experiences, and lessons learned from dairy farms and stakeholders across Europe. They are prepared following the EIP-AGRI standard format to ensure clarity, relevance, and applicability for farmers and advisors. Each abstract summarises key findings, innovative solutions, and actionable recommendations arising from the TDN project.

In line with the project plan, a minimum of 40 PAs will be delivered by Month 36. Subsequent abstracts will be produced and disseminated in additional batches to expand the repository of practical knowledge. The Practice

Abstracts will be actively disseminated through the project website, social media channels, and partner networks to maximise visibility, uptake, and impact across the community.

The current batch of abstracts covers a range of topics relevant to cow–calf contact systems: farmer story, definition, type of systems. This first collection establishes the foundation for ongoing knowledge sharing within the TDN project and supports the adoption of innovative practices across European dairy systems.

2. Practice Abstract 1

Principle elements of CCC systems

Since each farm is different, there is no standardised method for practicing a cow-calf contact (CCC) system. Instead, there are some principal elements that CCC farms have in common, but are implemented in different ways and that can be combined flexibly. This way, CCC systems can be adapted to almost every type of farm and to different preferences of the farmers.

The most important element to consider is if the calf shall have contact to its own dam (=dam rearing system) or to one or more foster cows (= foster cow rearing system). It is also possible that a calf starts to be reared by its dam, but is then switched to a foster cow (= mixed or hybrid rearing system). Furthermore, the desired total and daily contact duration between cow and calf must balance the needs of the animals and the farm. The daily contact duration can vary from short time contact of, e.g., 2x 15mins per day around milking times, over half-day contact to whole day contact. This can also change across time as calves grow older. The total contact period between cow and calf until separation and the type of calves reared with CCC are also important considerations regarding farm economics. Some farms can allow all calves, including the bulls, to grow up with contact to a cow, while on other farms only a certain part of the calves is reared with CCC, which are often the replacements heifers.

3. Practice Abstract 2

WHOLE DAY CONTACT to the dam

In a WHOLE DAY CONTACT system, cow and calf are able to have physical contact for almost 24 h daily (with a possible exception of temporary separation during milking and feeding). For example, cow and calf can be kept as part of the main milking herd in the cow barn and only during milking, calves are separated into a calf creep, where they have their own lying area, special feed and water. The equipment of the cow barn must be adapted for calf safety.

The advantages of this system are a natural frequency and timing of suckling; a high milk supply resulting in high weight gains of calves; cow–calf pairs can live out the whole repertoire of highly motivated affiliative, maternal, and social behaviours; calves can learn from other adult cows in addition to their dams; and finally, a high acceptance by consumers.

However, additional space requirements and calf-safety adjustments in the cow barn are necessary and there is a risk of higher calf disease incidence (e.g., due to unsuitable barn microclimate for calves). Also, the amount of saleable milk is reduced and partially or completely emptied quarters can require adaptation of milking routines. The high milk supply often results in low solid-feed intake of calves, which can make weaning at an early age more difficult; and the lack of fixed contact times implies that human–calf contact must be actively established and requires more elaborate animal health checks.

4. Practice Abstract 3

HALF-DAY CONTACT to the dam

In a HALF-DAY CONTACT system, cow and calf are managed with contact only during daytime or only during nighttime. If the cows and their suckling calves are part of the main dairy herd, the cow-calf pairs could for example go out to pasture together during the day and be separated overnight into different parts of the barn.

This system allows for one true milking interval during which the udder is not emptied, which can ease milking. Also, cows and calves are used to separation from each other, which can facilitate nutritional and social independence of the calf and may ease weaning. Other advantages are that calves show high weight gains, they are used to daily human handling which can ease health checks; cow–calf pairs can live out the whole repertoire of highly motivated affiliative, maternal, and social behaviours; calves learn from other adult cows next to their dams; and finally, there is a slight increase in machine milk yield compared to whole-day contact.

But these systems need additional space and calf-safety adjustments in the cow barn and there is a risk of higher calf disease incidence (e.g., due to unsuitable barn microclimate for calves). The daily separation and reunion of cow and calf can be labour-intensive and if there is nighttime contact, monitoring of suckling behaviour can be difficult. Finally, hungry calves after long separation can harass the cows if cows are released individually to the calf group.

5. Practice Abstract 4

SHORT-TIME CONTACT to the dam (= restricted suckling)

In a SHORT-TIME CONTACT system, cow–calf contact is allowed during two (or more) short periods daily (e.g., 2 × 15 min, 2 × 30 min, 2 × 60 min; usually around milking times). This contact happens, for example, in an outdoor run, the waiting area in front of the milking parlour, or the calf area.

These systems permit bonding of cow and calf despite short contact, with more control over timing and duration of suckling and only little barn adjustments necessary. Cow and calf are used to separation from another, which can facilitate nutritional and social independence and may ease weaning. Calves are used to daily human handling, which can ease health checks. In case of contact after milking, there are true milking intervals during which the udder is not emptied, which can ease milking. If milk supply is high enough, calves have high weight gains.

However, the contact is limited to nursing and affiliative behaviours shown in nursing context, so that possibilities for the calf to learn from the dam and other adult cows are limited. Also, suckling frequencies are unnatural; daily separation can be labour-intensive and calf weight gains are variable (depending on time together, timing of nursing relative to milking, and the cow's milk yield). Contact before milking can cause partially or completely emptied quarters, while contact after milking leaves an uncertain milk supply for the calf.

6. Practice Abstract 5

WHOLE-DAY CONTACT to a foster cow

In a WHOLE-DAY foster cow system, a foster cow and one or more foster calves have physical contact for 24 hours daily. The cow's own calf may or may not be one of the calves and usually, the cow is not milked.

For example, in a block-calving system, the cow with the best mothering abilities is selected and becomes the foster cow for two further calves next to her own calf. The foster cow–calf pairs are then kept with 24-hour contact in groups in a separate building from the main herd.

This system has the advantage that it works independently from the main herd; the amounts of suckled milk can be regulated by the cow-calf ratio; calves can learn from adult cows and suckle wit natural timing and frequency; and finally, if the foster cow is not milked, there is no effect on machine milking routines and pairs can completely follow their own rhythm.

However, (part of) the dams are denied the need to take care of their calf and cannot live out highly motivated maternal behaviour, leading to lower consumer acceptance. Also, the bonding phase can be labour-intensive; calves often receive fewer affiliative behaviours from foster cows than from their dams, and weight gains of calves are highly variable (depending on foster cows' preference for specific calves, the age difference between calves, and the cow's milk yield). There is a risk of udder injuries and teat damage when the cow–calf ratio is inappropriate, and separation stress is also evident in fostered pairs.

7. Practice Abstract 6

"If you want this, dare to try!"

Tockarp Organic farm was rebuilt for CCC in 2021 and houses 75 cows in a robotic milking system. When deciding to rebuild for CCC, Lola and Anton designed an innovative system well-suited to their needs.

At the farm, cows calve in straw-bedded pens and are kept full-time with their calves for the first 2-3 days. After these days, cows are moved together with their calves to a larger group pen bedded with straw. This pen is the home for the calves during the coming weeks, while cows are allowed to visit. Cows are moved into the loose housing system with the other cows, where all necessary resources are available (water, feed, rotating brushes, cubicles). After visiting the milking unit, cows that have access to their calves are sorted into the group pen, while cows who do not have access to the calves are sorted back into the loose housing unit. Cows are allowed to spend as much time as they like with the calves in the group pen, but need to go back into the loose housing unit to access feed. During pasture seasons, cows can choose to go out to pasture after visiting their calves.

At 4-5 weeks of age, calves are abruptly separated from their dams, by being moved into the youngstock unit where they are housed in groups of 7. As they are still milk feeding, they are fed whole milk from buckets 2 times daily and quickly learn to drink. Cows are restricted to the loose housing unit and quickly accept their new reality. The choice to separate cows and calves at this age limits competition between older and younger calves, and also the loss of saleable milk.

“The best thing with the system is to see the interactions between cow and calf”, Lola says. “If you want this, you should dare to try”.