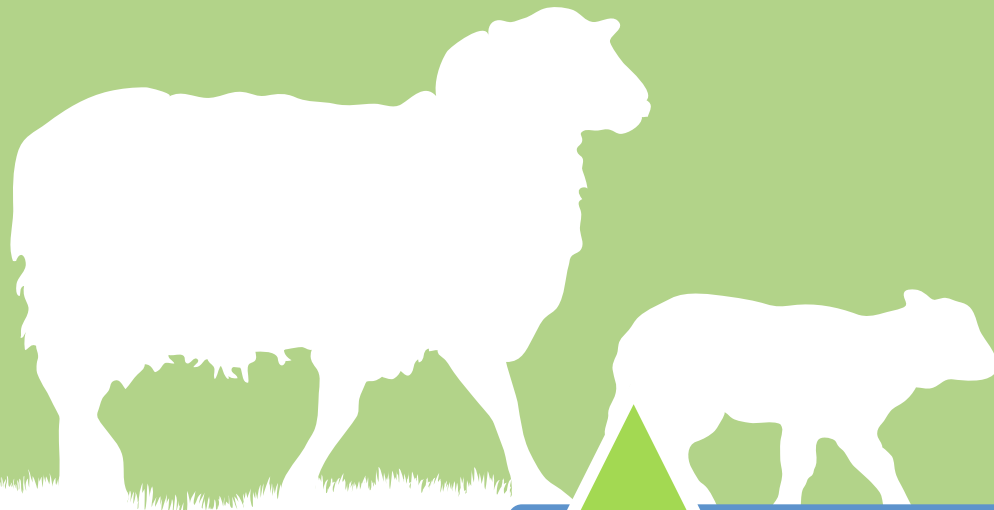


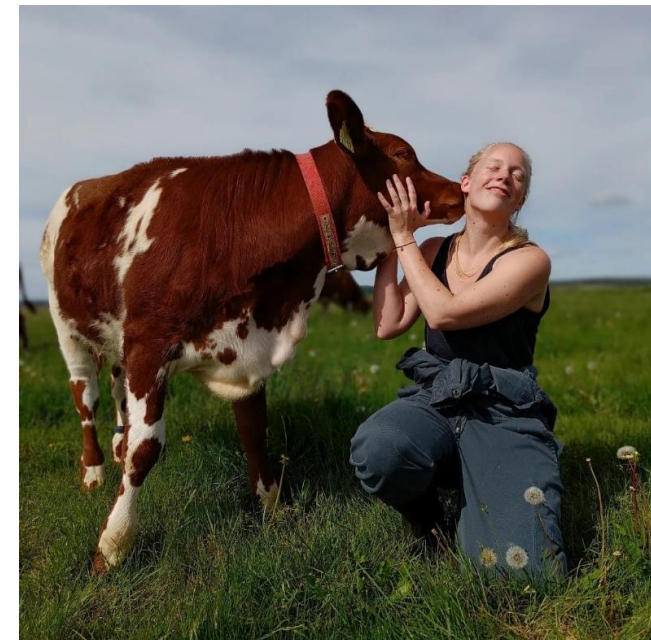


Betesförsök med mjölkcor och kalvar tillsammans

05.11.2025 – Juni Rosann E. Johanssen

Juni Rosann Engelién Johanssen

- Etolog og sivilagronom, master i husdyrvitenskap, NMBU 2016
- Forsker innen dyrevelferd, NORSØK 2017-
- PhD ku-kalv-samvær, aug. 2020 – feb. 2024



Dyra i forsøket

- Bergtun gård i Rennebu – 80 kyr, AMS
- Seter i Nerskogen
- 20 kalver født 7.mai til 14.juni
- **Cow-calf contact (CC)** og **early separation (ES)**
- Delt i fire grupper etter kalvingsdato
- Aldersvariasjon 6-8 dager/gruppe
- CC-kyr: 4 førstegangs- og 6 flergangskalvere
- ES-kyr: 1 førstegangs- og 9 flergangskalvere
- CC-kalver: 2 okser, 8 kviger
- ES-kalver: 6 okser, 4 kviger



Om behandlingene



Behandling	CC (n=10 par delt i to grupper)		ES (n=10 par delt i to grupper)	
Uker etter kalving	Ku-kontakt	Dietilgang	Ku-kontakt	Melketilgang
0-3	Heldags	Fri, utenom under melking	1-3 t på kalvingsdagen, så ingen	12 L/kalv/dag (fire måltider)
4-6	Heldags	Fri, utenom under melking	Ingen	14 L/kalv/dag (fire måltider)
7	Deltid	Fence-line, utenom etter melking: 2 t morgen, 2 t kveld	Ingen	8 L/kalv/dag (to måltider)
8	Deltid	Fence-line, utenom etter melking: 1 t morgen, 1 t kveld	Ingen	4 L/kalv/dag (to måltider)
9	Full separasjon (hørbar og visuell kontakt)	Ingen (kyr flytta 120 m unna)	Ingen	Ingen

CC-ku og kalv alene i kalvingsbinge 3-4 dager etter kalving, så løsdriфт/beite



ES-kalver: Kalveboks 3 dager, så fellesbinge/beite



CC-kalver i løsdrift



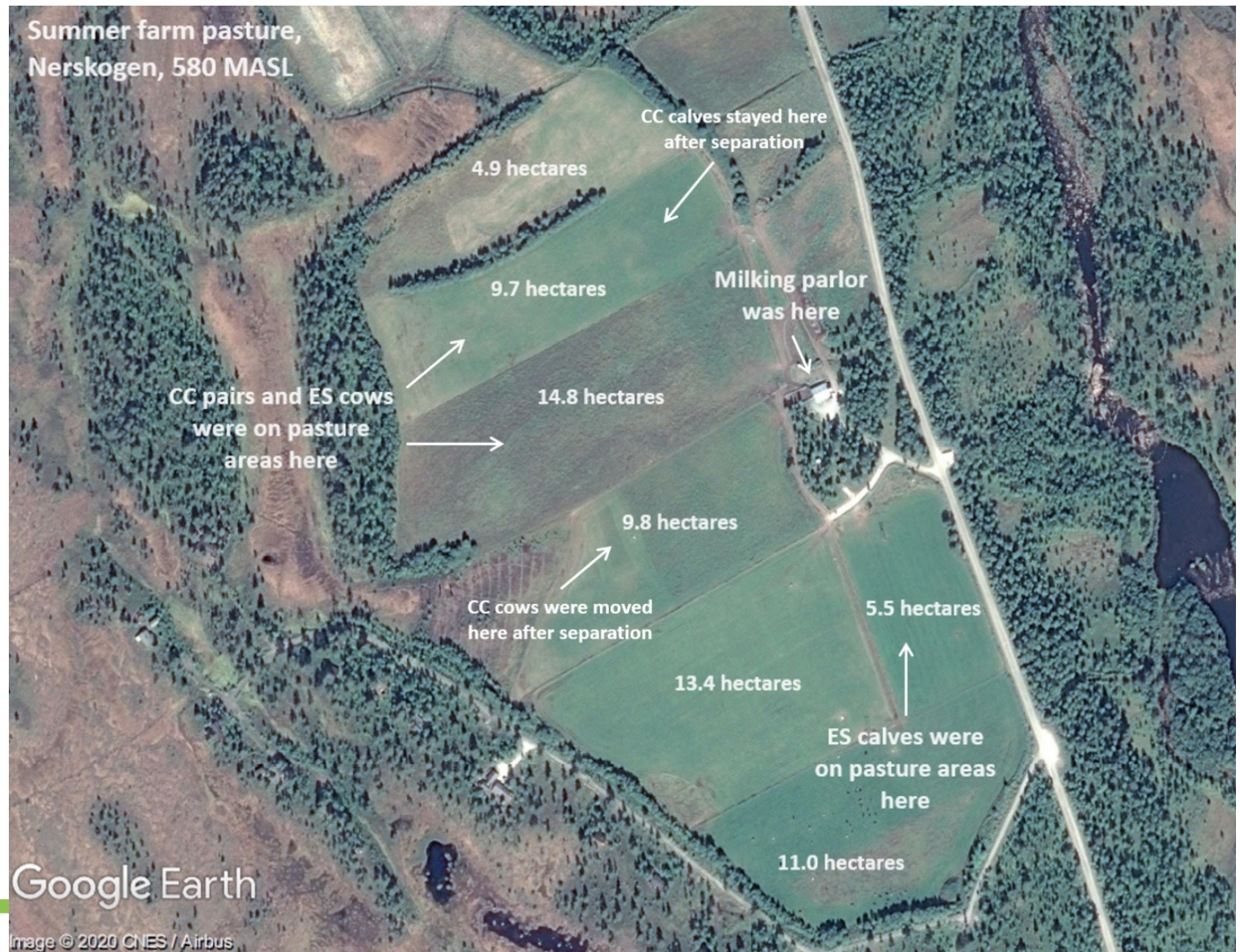
CC-kalver i løsdrift, hvor ligger de?

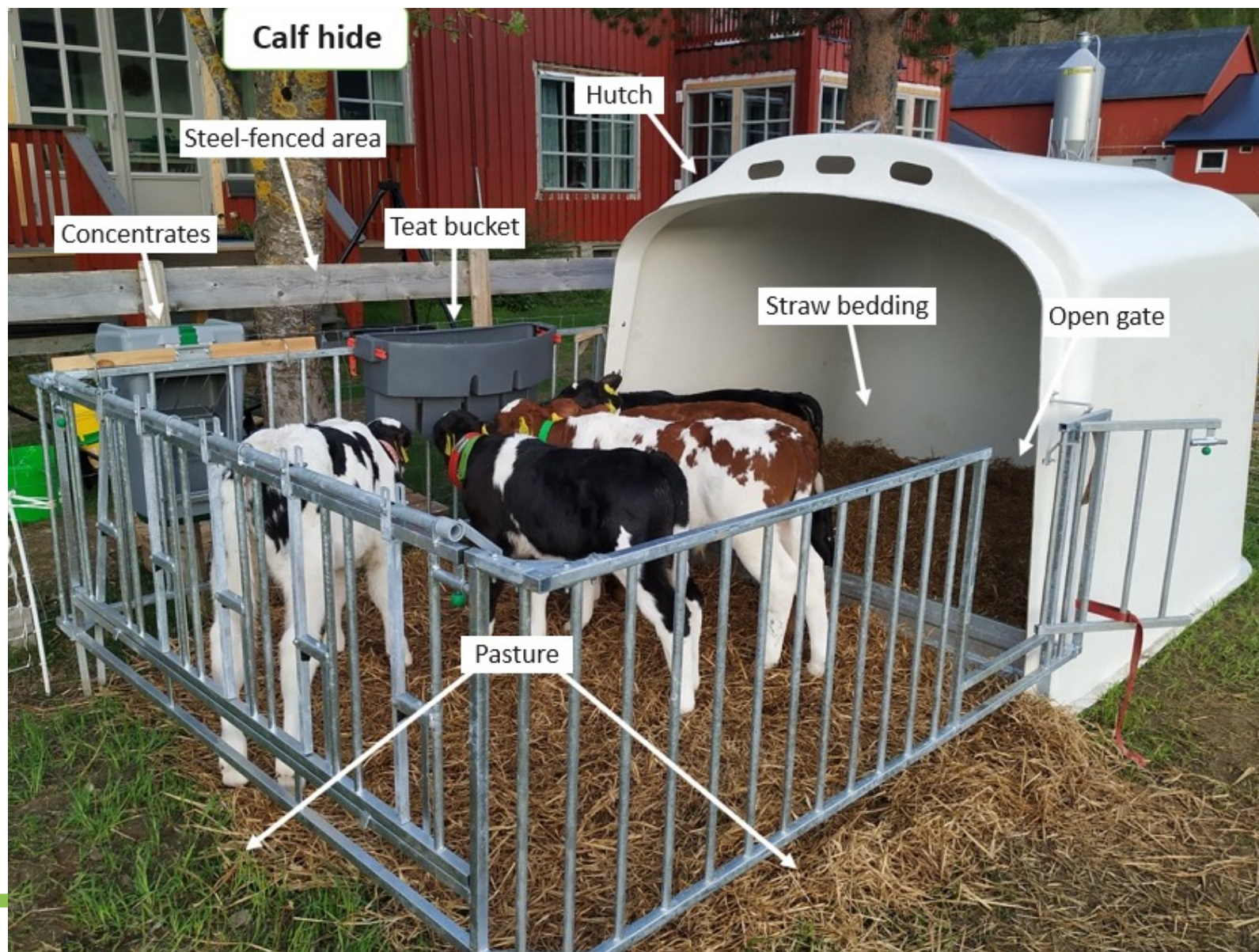


På setra 7.mai



Setra i Nerskogen





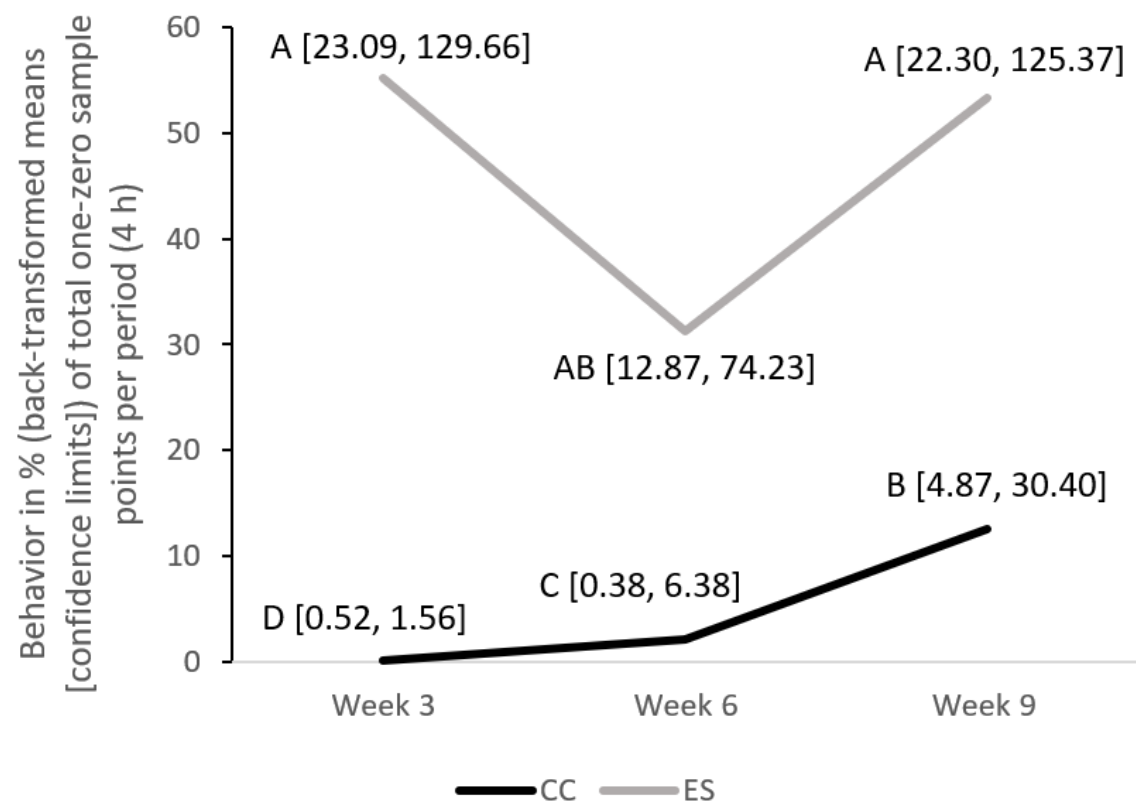






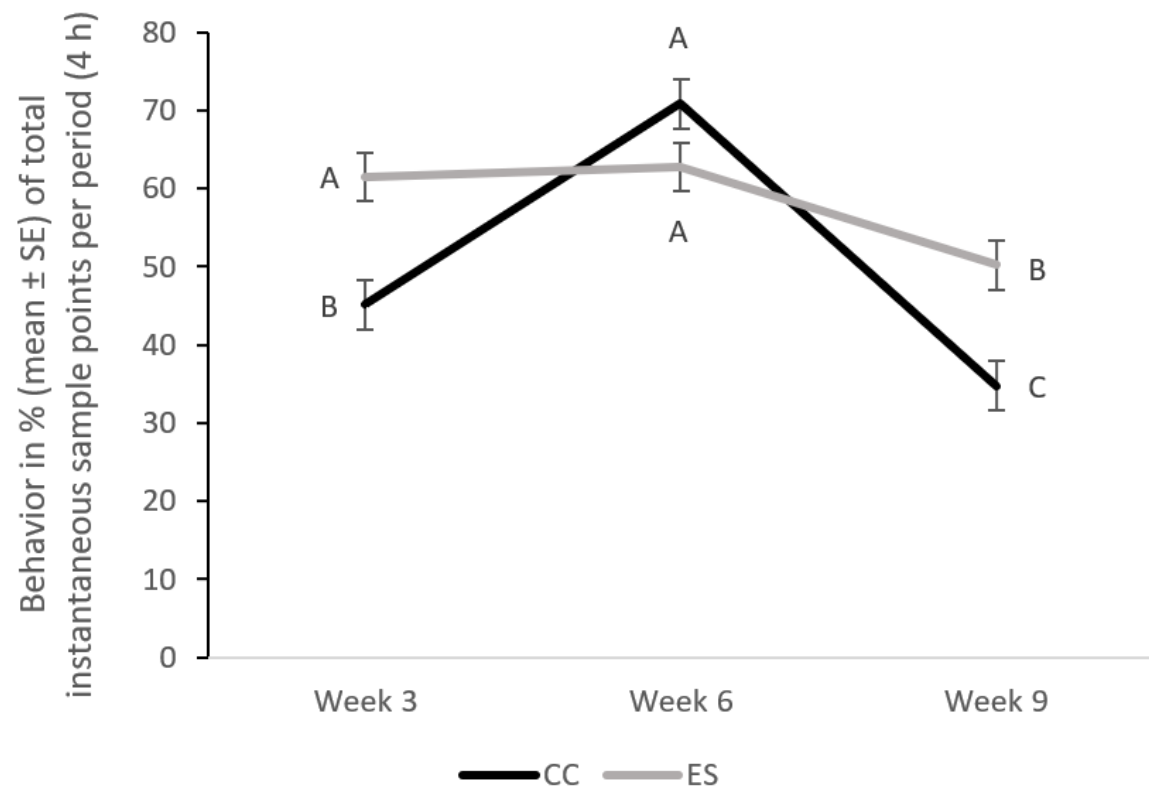
a)

Calves' use of calf hide



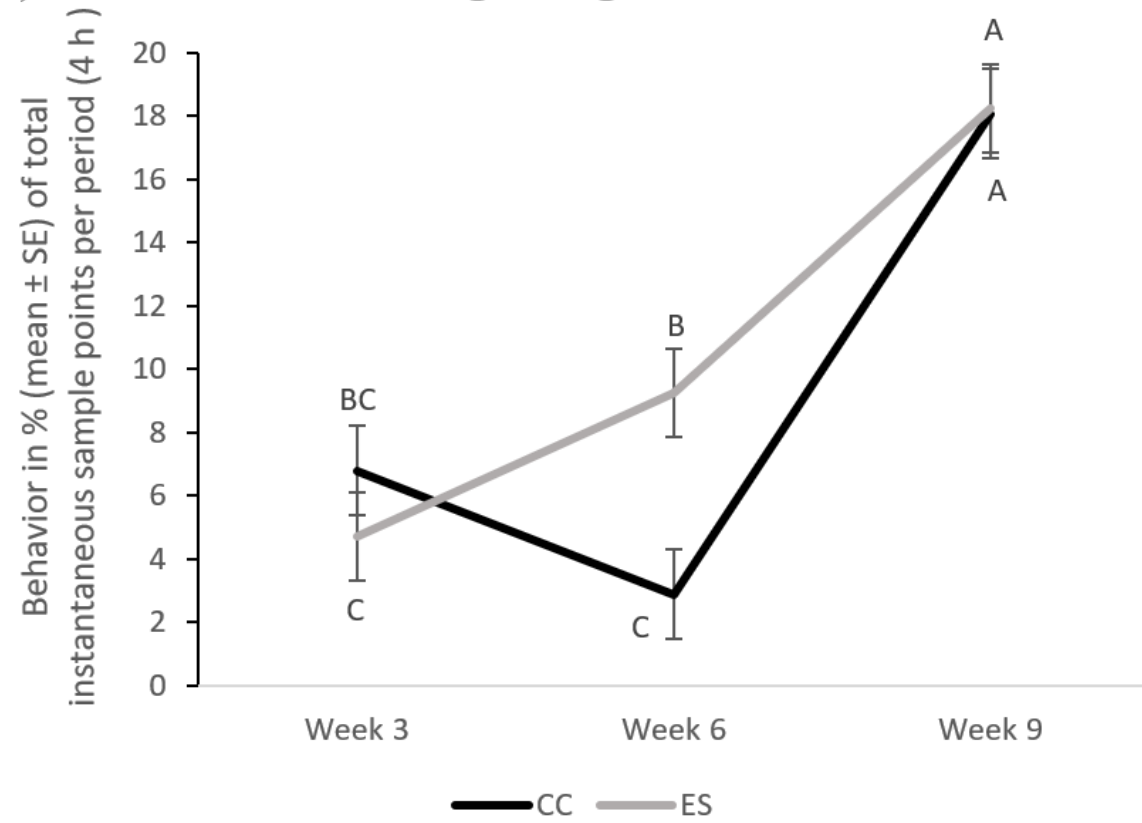
b)

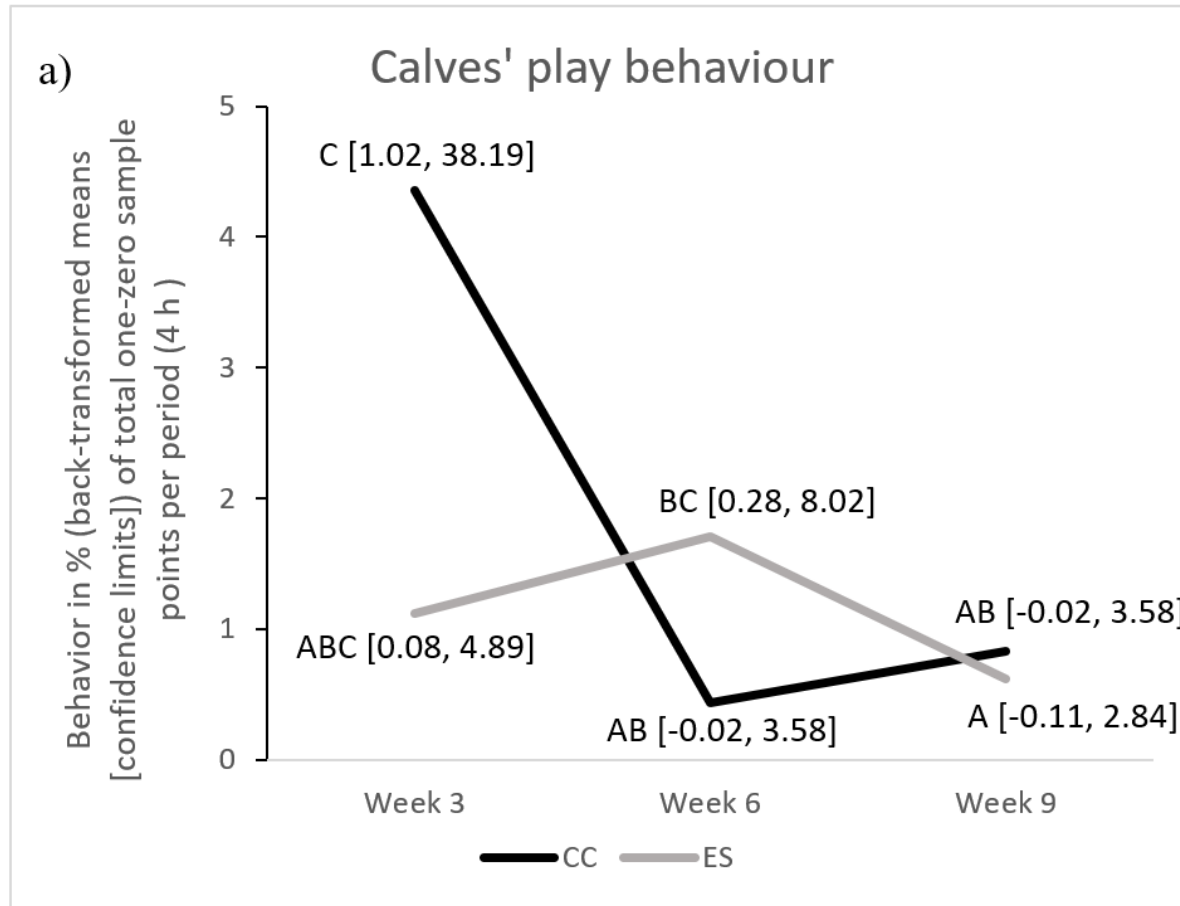
Calves' lying behaviour

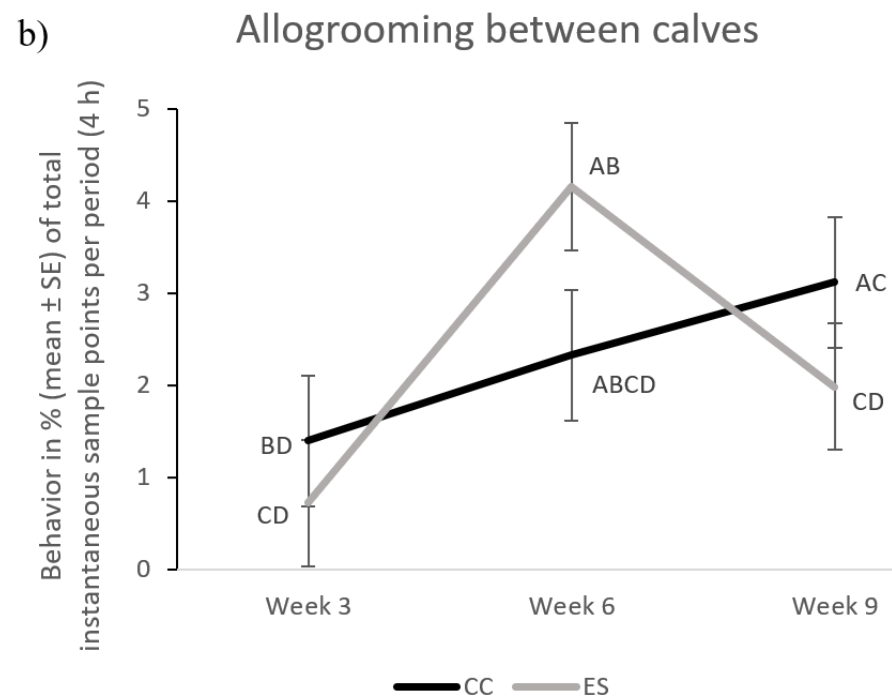


c)

Calves' grazing behaviour







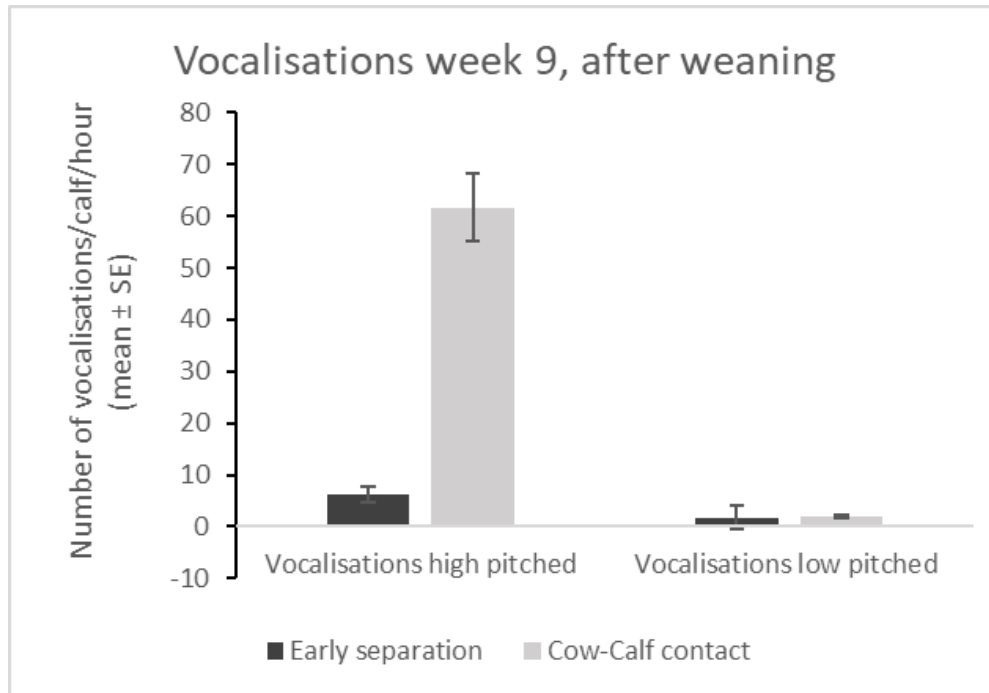
Sosialt stell mellom ku og kalv

- Likt i uke 3 og 6:
2.8 vs 2.7 %

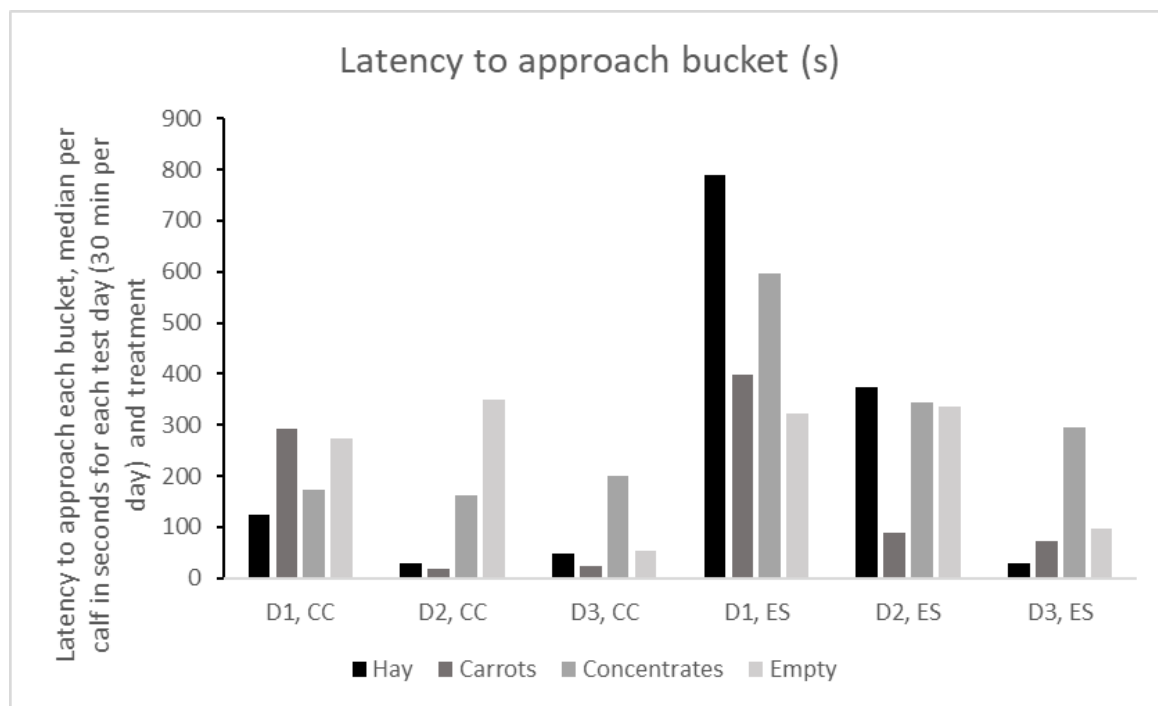


Diing/drikking av melk fra melkebar

- CC og ES calves brukte opptil 13 min/periode
- CC-kalvenes dieperioder i uke 3 3 vs 6: 3.1 vs 1.7 (8 t)
- CC-kalvenes tid/periode uke 4 vs 6: 4.2 vs 6.7 min

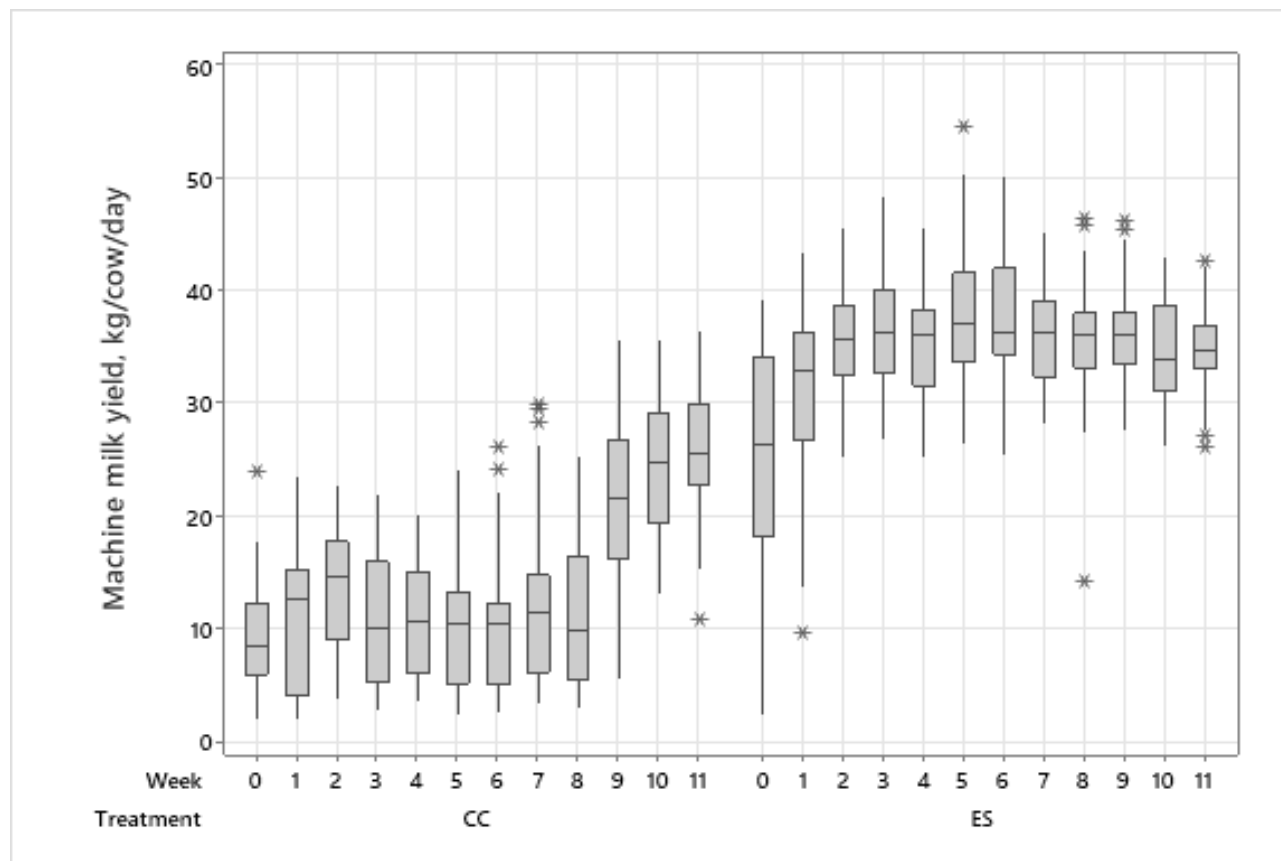


Test med ukjent fôr



Maskinmelket ytelse hos kyrne

- Uke 0-6: 11 vs 35 kg/dag



Sammensetning av kyrnes maskinmelkede melk

Uke 5:

- Ingen sign. forskjell for fett (men lavt)
- Forskjeller for laktose og EKM

Etter forsøket (uke 14-18):

- Ingen forskjeller

a. Item	Treatment		Treatment
	CC (n=10)	ES (n=9)	P-value
Fat, %	<u>2.6 ± 0.2</u>	<u>3.3 ± 0.3</u>	<u>0.146</u>
Protein, %	3.2 ± 0.1	3.2 ± 0.1	0.647
Lactose, %	<u>4.5 ± 0.1</u>	<u>4.9 ± 0.1</u>	<u>0.005</u>
Total solids, %	10.3 ± 0.3	11.5 ± 0.3	0.111
ECM/day, kg	7.8 ± 2.2	33.8 ± 2.4	0.010
FFA, mEq/L	0.14 ± 0.06	0.12 ± 0.07	0.810
Urea, mmol/L	2.2	2.4	0.693
SCC, 10 ³ /mL	24.4	47.8	0.360
b. Item	CC (n=8)	ES (n=8)	
Fat, %	3.9 ± 0.4	4.0 ± 0.4	0.944
Protein, %	3.6 ± 0.1	3.6 ± 0.3	0.536
Lactose, %	4.9 ± 0.2	4.8 ± 0.2	0.675
Total solids, %	12.3 ± 0.5	12.4 ± 0.7	0.977
ECM/day, kg	23.4 ± 4.4	28.4 ± 4.4	0.447
FFA, mEq/L	0.5 ± 0.1	0.7 ± 0.4	0.222
Urea, mmol/L	5.3 ± 0.4	5.9 ± 0.8	0.535
SCC, 10 ³ /mL	47.5 ± 56.3	191.3 ± 315.8	0.313

Kyrnes kroppsvekt og hold

- Nedgang i kroppsvekt
- Numerisk større nedgang hos ES kyr

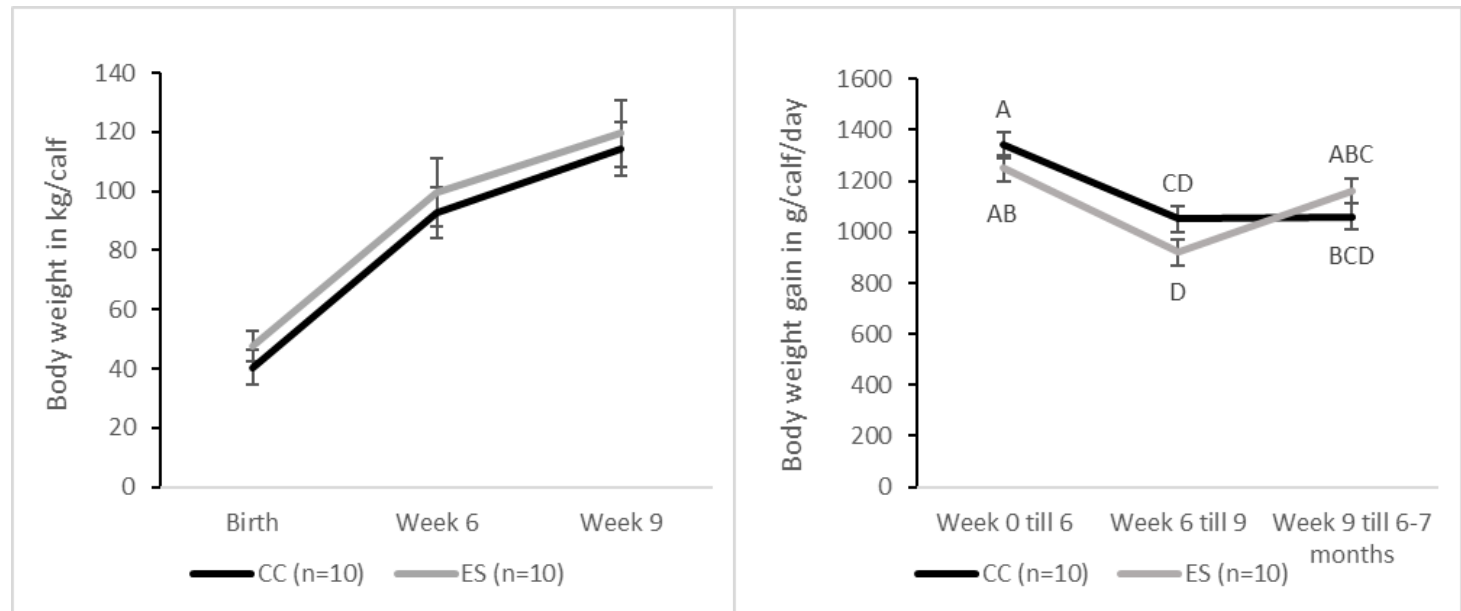


Item	Time	Treatment	
		CC (n=10)	ES (n=9)
BCS, 1–5-point scale	First pasture day	3.9 ± 0.6	3.7 ± 0.7
	Week 9	2.9 ± 0.4	2.5 ± 0.5
Body weight, kg	First pasture day	657 ± 98	691 ± 47
	Week 9	603 ± 82	622 ± 50
	Decrease in g/day	<u>973</u> ± 462	<u>1647</u> ± 552

Kroppsvekt og tilvekst hos kalvene

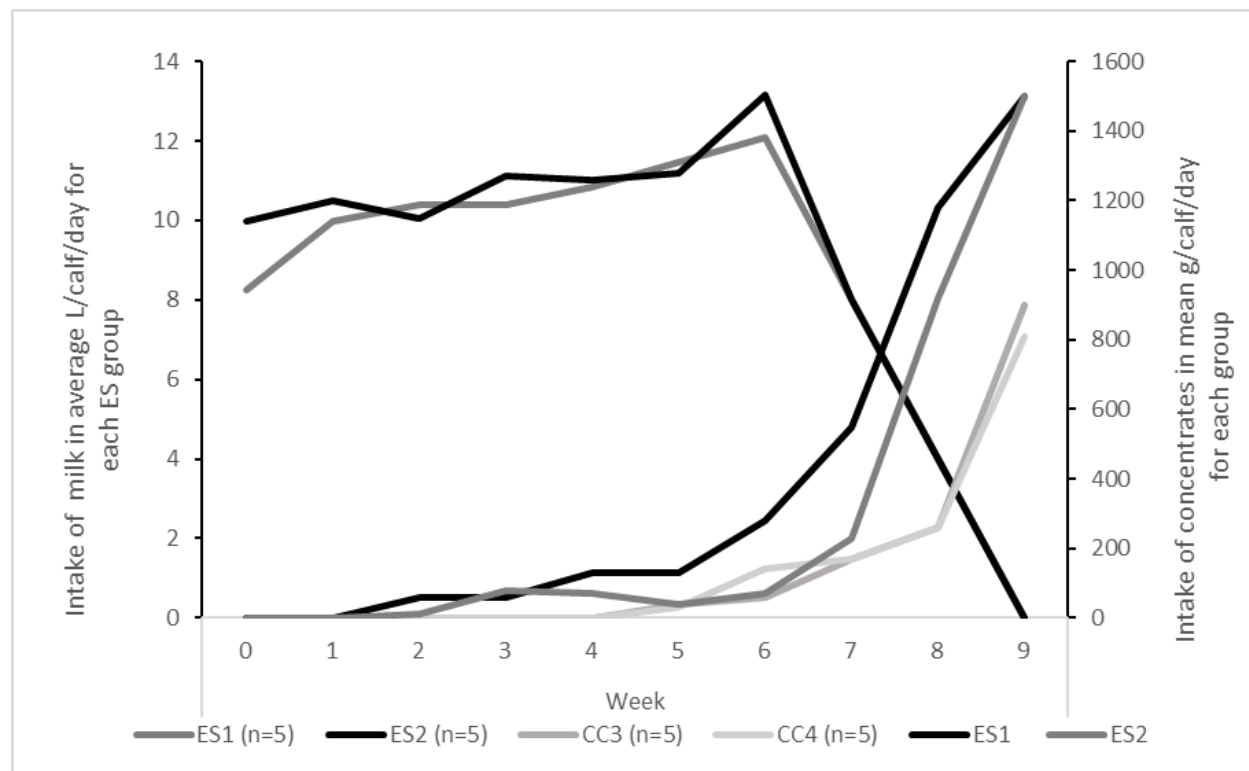
Tilvekst:

- CC: 1.15 vs ES: 1.11 kg/kalv/dag (uke 0 til 6-7 mnd)
- Ingen forskjeller innen hver av periodene
- Nedgang under avvenning



Kalvenes inntak av melk og kraftfôr

- ES - Melkeinntak: 10.7 L/kalv/dag uke 0-6 (tilgang 12-14 L)
- ES – Tidligere og mer kraftfôr



Kuhelse

Dårlig nedgiing av melk ved melking av CC-kyr:

- Spesielt tre førstegangskalvere
- Spesielt ved avvenning og separasjon
- Bekymringer om mastitt og forlenget lavere melkeytelse – Oxytocin-injeksjoner gitt
- Bare de to eldste CC kyrne ble ansett å ha normal nedgiing av melk

Health incident, cows	Item	CC1 (n=5)	CC2 (n=5)	ES1 (n=4)	ES2 (n=5)
Fecal consistency > 3	No. cows	0	1	4	2
Coughing score > 1	No. cows	0	0	0	0
Lameness	No. cows	0	0	0	0
Mastitis, clinical ¹	No. cows	1	2	1	1
Teat wounds/udder injuries	No. cows	1	2	0	2
Inhibited milk ejection	No. cows	3	5	0	0
Oxytocin in. week 0-6	No. of treatments	12	2	-	-
Oxytocin in. week 7-9	No. of treatments	26	26	-	-

Kalvehelse

- Noe diare hos CC og ES
- Noe hosting hos ES2
- Allmenntilstand ikke påvirket
- Generelt god helse hos alle



Foto: Marius André Jensen Stenberg

Health incident, calves		CC1 (n=5)	CC2 (n=5)	ES1 (n=5)	ES2 (n=5)
Fecal consistency > 3	No. calves	1	3	5	5
Coughing (scores 1-2)	No. calves	0	0	0	4
Lameness	No. calves	0	0	0	0

Oppsummering

- Kalveatferd påvirket av CC (avhengig av alder)
- Lavere maskinmelket ytelse hos CC kyr, også etter separasjon
- Utfordring: Nedgiing av melk
- Lavere laktose i melk hos CC kyr ved diing
- Lik melkesammensetning etter forsøket
- Ikke forskjell kalvetilvekst og kalvehelse





Norwegian University of Life Sciences
Faculty of Biosciences
Department of Animal and Aquacultural Sciences

Philosophiae Doctor (PhD)
Thesis 2023/78

Cow-calf contact in dairy farming - Norwegian cow-calf contact (CCC) farmers' practice and perceptions, and effects of CCC on behavior and performance on pasture

Ku-kalv-kontakt i melkeproduksjon – Norske ku-kalv-kontakt (CCC)-bønders praksis og oppfatninger, og effekter av CCC på atferd og ytelse på beite

Juni Rosann Engeliien Johansson



NORSØK
Norsk senter for økologisk landbruk

Ku og kalv sammen i melkeproduksjon
- Intervjuer med melkeprodusenter



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Forfattere: Juni Rosann E. Johansson & Kristin M. Selheim, NORSØK



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Interrelationships between cows, calves, and humans in cow-calf contact systems—An Interview study among Norwegian dairy farmers

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ABSTRACT

In recent years, the common dairy farming practice of early separation of dams and calves has received increased attention. One aim was to explore how Norwegian dairy farmers with cow-calf contact (CCC) systems apply these systems in practice, and how they experience and perceive the interrelationships between cows and calves and humans within these systems. We conducted in-depth interviews with 17 farmers from 12 dairy farms and analyzed responses inductively, inspired by the grounded theory approach. The farmers in our study practiced their CCC systems differently from each other and had varying as well as common perceptions about these systems. Calves' intake of colostrum was not seen as a challenge, regardless of practice. The farmers generally perceived that any separation during or even toward lactation was merely an indication of overly maternal protective instincts. However, when the farmers and their calves had contact with their cows and the cows did not respond them, the farmers could handle the cows and build good relationships with them as well. The farmers experienced the calves benefiting a lot from their dams. Most of the farmers' dairy business systems were not adapted for CCC, and CCC systems could require adjustments in terms of placing calves, milking equipment, or observing the calves and building relationships in the cows and around milking. Some thought having CCC on pasture was the best and most natural, while others were reluctant to have CCC on pasture. The farmers encountered some challenges with shared outdoor after-lactation systems, but several had found methods to deal with them. Generally, they had different opinions about whether, but agreed they spent less time on calf feeding. We found that three farmers were facing with their CCC systems, they all described positive emotions around seeing cows and their calves

INTRODUCTION

Separating dairy cows from their calves immediately or shortly after birth is a common practice in dairy farming (Hirani et al., 2016; Frenkel et al., 2017; Albrecht et al., 2017). For many decades, most farmers have not questioned the practice. They have their arguments mostly on lower volumes of colostrum milk from ewes (see Hengler et al., 2019), more intense separation after some time together (Wiley and Chan, 2010; Berg and Langseth, 2022), and potential risk of transmitting infection between cows and calves (see review by Benor et al., 2019). Others have argued that calves would become "wild" when in the cow group and not fed by humans (Vasaar et al., 2020). Another concern has centered on possible aggressive behavior toward cows as dairy attempts to protect their calves, thus creating a less safe working environment (Berg and Langseth, 2022; Nørvang et al., 2022). Last, the adaptations required to create lasting systems that would allow semi-intensive cows together with dairy cows can be costly (Benor et al., 2019; Berg and Langseth, 2022).

However, the early separation of dairy cows and their calves has received increased attention recently from stakeholders associated with this practice (Brink et al., 2017). This interest is supported from animal welfare organizations' emphasis on this topic (Dijkzeul, 2020; Dijkzeul and van der Werf, 2021), and within the scientific community, see, for example, in the article by Dijkzeul et al. (2021), with the title "Are we ready for the big change in dairy production?" The big change they refer to is replacing early separation of dairy cows and calves. Services carried out by different countries show that more farmers' knowledge about common ethical husbandry practices, such as the early separation of a cow and her calf to British (see review by Flinck

5225

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A pilot study of the behavior of dairy calves with or without their dams on pasture

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^a Norwegian University of Life Sciences, Department of Animal and Aquacultural Sciences, 1432 Ås, Norway
^b Norwegian University of Life Sciences, Department of Animal and Aquacultural Sciences, 1432 Ås, Norway
^c Norwegian University of Life Sciences, Department of Animal and Aquacultural Sciences, 1432 Ås, Norway

ABSTRACT

There is a growing interest in dairy farming practices that aim to improve the welfare of dairy calves. One such practice is to allow dairy calves to remain with their dams on pasture. However, there is limited knowledge about the behavior of dairy calves in these systems. The aim of this study was to explore the behavior of dairy calves with or without their dams on pasture. The study was conducted on two dairy farms in Norway. The study included 10 dairy calves, 5 with dams and 5 without dams. The calves were observed for 10 days. The results showed that dairy calves with dams spent more time with their dams than dairy calves without dams. Dairy calves with dams also spent more time grazing than dairy calves without dams. The results also showed that dairy calves with dams had higher body weights than dairy calves without dams. The results suggest that allowing dairy calves to remain with their dams on pasture may be beneficial for their welfare.

1. Introduction

Over the last few decades, there has been a growing interest in dairy farming practices that aim to improve the welfare of dairy calves. One such practice is to allow dairy calves to remain with their dams on pasture. However, there is limited knowledge about the behavior of dairy calves in these systems. The aim of this study was to explore the behavior of dairy calves with or without their dams on pasture. The study was conducted on two dairy farms in Norway. The study included 10 dairy calves, 5 with dams and 5 without dams. The calves were observed for 10 days. The results showed that dairy calves with dams spent more time with their dams than dairy calves without dams. Dairy calves with dams also spent more time grazing than dairy calves without dams. The results also showed that dairy calves with dams had higher body weights than dairy calves without dams. The results suggest that allowing dairy calves to remain with their dams on pasture may be beneficial for their welfare.

Livestock Science 285 (2024) 100022

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Performance in dairy cows and calves with or without cow-calf contact on pasture

Juni Rosann E. Johansson^{a,*}, Steffen Adler^a, Julie Færev Johansen^a, Kristin Selheim^a, Kristi Røtt Røtt^a

^a Norwegian University of Life Sciences, Department of Animal and Aquacultural Sciences, 1432 Ås, Norway
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HIGHLIGHTS

- Pastured dairy calves with or without cow-calf contact (CCC) had similar weight gains.
- Calves with access to CCC were perceived to be at least three times the cost of separation.
- Individual milk production was a challenge in milking of pastured CCC cows.

ABSTRACT

Research in dairy cow-calf contact (CCC) systems is growing, but limited research has been conducted on CCC in pasture settings. The aim of this study was to explore the performance of pastured dairy cows and calves with or without CCC during lactation. The study was conducted on two dairy farms in Norway. The study included 10 dairy cows and 10 dairy calves. The cows were observed for 10 days. The results showed that dairy cows with CCC had similar weight gains to dairy cows without CCC. Dairy calves with CCC also had similar weight gains to dairy calves without CCC. The results suggest that allowing dairy calves to remain with their dams on pasture may be beneficial for their welfare.

Avhandling: <https://hdl.handle.net/11250/3124486>

NORSØK-rapport fra intervjuer: <https://orgprints.org/id/eprint/43022/>

Artikkel fra intervjuer: <https://doi.org/10.3168/jds.2022-22999>

Artikkel fra beiteforsøk, kalveatferd: <https://doi.org/10.1016/j.applanim.2024.106211>

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