RSPCA Australia Scholarships
Progress Report

Contact details

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Project title

Investigating practical aspects of avoiding early cow-calf separation on dairy farms

Project description

Aims

Early cow and calf separation in the dairy industry is coming under increasing scrutiny due to welfare and ethical concerns. With some farmers now moving towards delayed cow and calf separation practices, practical ways to manage cows and calves together on farms need to be evaluated, particularly in terms of health and welfare outcomes.

Half day separation of cows and calves may provide a way to manage cows and calves together, while at the same time allowing for rotational grazing systems to be utilised, and for calves to gain some independence and experience of handling by humans. However it is currently not known whether half day separation is more stressful for cows and calves, compared to separation for milking only.

Our aim was to compare cow and calf welfare in two prolonged contact systems: cow and calf separation for half days (HD), compared to cow and calf separation for milking only (MO).

Methods

We compared the behaviour of 16 recently calved dairy cows and their calves, separated daily for milking only (MO), or for a half-day (HD) between morning and evening milking (8-10 hours of separation per day), over a 10-day period.

Cows and calves were housed in group pens under shelter during the experiment. Calves suckled from their mothers and were not given any additional milk feed. Cow restlessness during milking (flinches, steps and kicks), milk cortisol, calf vocalisations, calf weight gain and other behaviour measures were analysed.

Linear mixed models and generalised linear mixed models were used to statistically compare the treatments at different times of day.

Results

HD calves spent more time suckling than MO calves before morning milking and after evening milking. HD calves showed a longer latency to lie than MO calves, both when cows left for morning milking and when they returned after evening milking, and had a shorter lying duration in the evening.

HD cows avoided nursing more, and performed more grooming and agonistic behaviours than MO cows, when reunited with their calves after evening milking. HD cows also showed more restlessness during evening milking, performing 4.6 times the number of kicks than MO cows.

Results were comparable between treatments for milk cortisol concentration, milk yield, time spent ruminating, calf weight gain, cow vocalisations at separation for morning milking, and time taken to separate cows from calves for morning milking.

Overall, some potential welfare issues with HD cow-calf separation compared to MO may be calf hunger, cow discomfort when reunited with hungry calves whilst having an empty udder, and cow restlessness at evening milking. Providing HD calves with milk during the period of separation may address these issues, apart from that of cow restlessness at evening milking; however, further research would be needed to confirm this.

Next steps

This research has been submitted to the journal *Applied Animal Behaviour Science* for peer review. It is also included as a chapter in my PhD thesis, which has also been submitted for review.