

Using an automated milk feeder during the suckling period will reduce stress behaviour at separation

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When dairy calves are reared with their mothers, they usually are separated much earlier than the natural age. Separation will usually cause a strong stress response with loud vocalizations, and is a major challenge in suckling systems for dairy cattle. This study investigated whether the integration of an automated milk feeder in the calf creep would alleviate stress at separation by making calves more nutritionally independent of their dams. 30 cow calf pairs were kept together at night but the calves were locked up in the calf creep during the day. 10 calves were prevented from suckling due to an udder net covering the teats and got all the milk (12 L/d) from the feeder. 10 calves suckled the dam (daytime) but were denied access to the milk feeder. 10 calves had access to both the dam (night) and the milk feeder (day and night). After 6 weeks the calves were moved to an adjacent pen but cow and calf still had fence line contact. The milk feeder was now open to all calves, but no training to use it was given and very few of the suckling-only calves started to use it. After another 4 days, the cows were moved to another barn, and the calves were weaned off milk. Calves' responses were recorded by live observations for 7 days following separation, and calls were classified as high pitched (open mouth) or low pitched (closed mouth). After separation, the non-suckler calves produced significantly ($p=0.001$) less high pitched calls than the other groups. Calves using the automated feeder vocalized less than those not using it, which in practice were weaned at the time of separation. The number of high pitched vocalizations were strongly negatively correlated to daily milk intake ($p<0.001$). Calves using the milk feeder spent more time playing ($p=0.047$). Results show that in cow-calf rearing systems, disentangling weaning and loss of the dam in time, can improve calf welfare.

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