



## Research Reports

### Social housing improves dairy calves' performance in a competition test

Although many dairy farms socially house their milk-fed calves, some calves are still raised individually from birth to weaning. We provide additional evidence that depriving the milk-fed calf of access to social partners early in life can negatively impact the development of social behaviours.

In our most recent calf study completed by members of The University of British Columbia (UBC) Animal Welfare Program at the UBC Dairy Education and Research Centre, we explored the impact of early-life social environment on dairy calves' competitive skills. Eighteen milk-fed calves were reared individually from birth. At 11 days old, half of the calves were pair housed with a non-experimental calf of similar age while the other half calves continued to be raised individually.

Starting at 25 days of age, all calves were exposed to competition tests for milk access. In the morning, each calf was gently moved from its home pen to the test arena and placed in a start box beside an unknown calf of similar age (the competitor). Both calves were then released into the arena that contained a single milk bottle filled with 0.5L of milk hanging on the opposing wall (Figure 1). Test sessions ended when the bottle was empty. Competition tests consisted of 2 consecutive sessions per day and were conducted over 5 days.

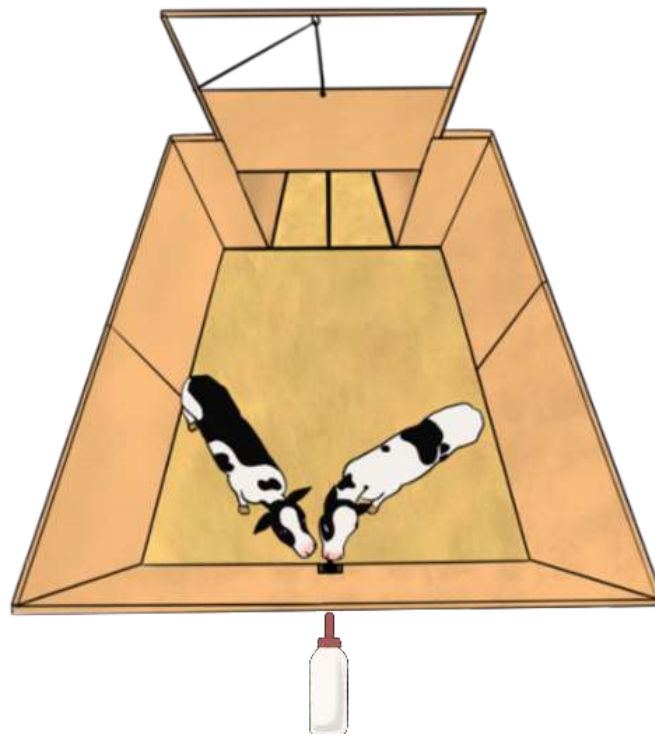




Figure 1. Experimental arena used for competition tests. Calves raised individually (9 calves) or in pairs (9 calves) were facing a group-housed competitor for access to a milk bottle. Competition sessions lasted until the 0.5L of milk contained in the bottle was drunk. Competition tests consisted of 2 sessions per day for 5 consecutive days. Illustration by Bianca Vandresen.

Our findings indicate that pair housed calves increased their time spent drinking (Figure 2A) and were consistent in the time to approach the milk bottle (Figure 2B) over the 5 competition tests. In contrast, individually housed calves were slower to approach the bottle and decreased their time spent drinking over the 5 test days. Overall pair-housed calves out-competed the individually raised calves.

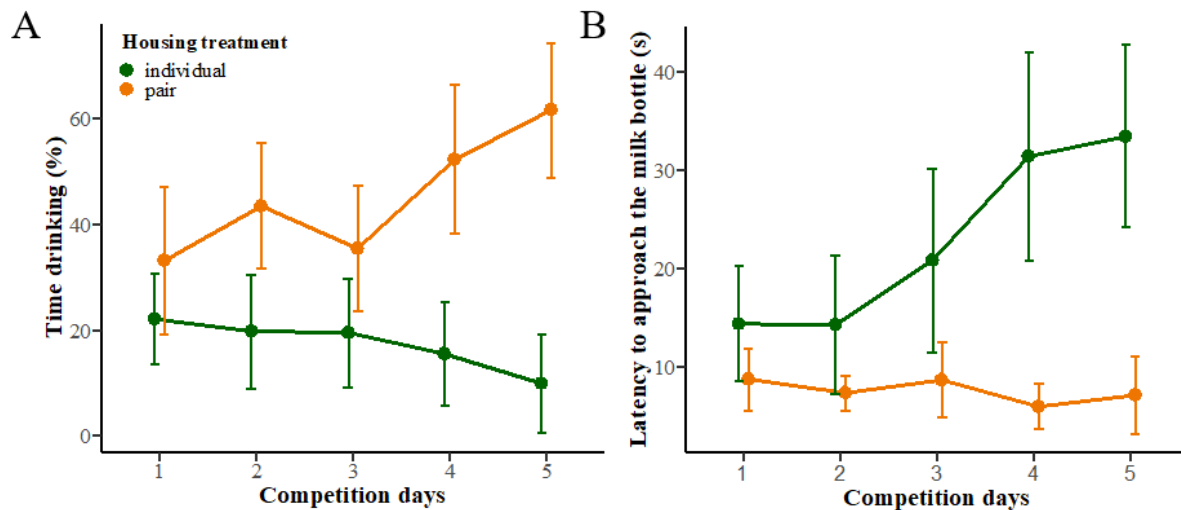


Figure 2. Line graphs presenting (A) time drinking from the milk bottle (% of total test time) and (B) latencies to approach the milk bottle (s) performed over the competition days for individually ( $n = 9$ ) and pair housed calves ( $n = 9$ ). (Redrawn from Suchon et al., in press)

To control for the influence of individual differences in personality on their competitive abilities, each calf was subjected to tests assessing boldness before the housing treatment and after competition tests. Within each treatment group, irrespective of housing type (social or individual), bolder calves' tended to be faster to approach the bottle.

Pair-housed calves showed improved access to milk when subjected to a competition test, providing additional evidence in support of social housing on calves' development of social skills.

<sup>1</sup>For further information please contact Marina (Nina) von Keyserlingk (nina@mail.ubc.ca). The results described in this article are based on the study recently published on August 11, 2023: Malina Suchon, Thomas Ede, Bianca Vandresen, and Marina A.G. von Keyserlingk. In press. Social housing improves dairy calves' performance in a competition test. *JDS Communications* <https://doi.org/10.3168/jdsc.2023-0378>.

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