

# Cows are smarter when raised in pairs

February 26 2014

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Cows learn better when housed together, which may help them adjust faster to complex new feeding and milking technologies on the modern farm, a new University of British Columbia study finds.

The research, published today in *PLOS ONE*, shows dairy [calves](#) become better at learning when a "buddy system" is in place. The study also provides the first evidence that the standard practice of individually housing calves is associated with certain learning difficulties.

"Pairing calves seems to change the way these animals are able to process information," said Dan Weary, corresponding author and a professor in UBC's Animal Welfare Program. "We recommend that farmers use some form of social housing for their calves during the milk feeding period."

As farms become increasingly complex, with cattle interacting with robotic milkers, automated feeding systems and other technologies, slow adaptation can be frustrating for cows and farmers alike.

"Trouble adjusting to changes in routine and environment can cause problems for farmers and animals," Weary says, adding that the switch from an individual pen to a paired one is often as simple as removing a partition.

Farmers often keep calves in individual pens, believing this helps to reduce the spread of disease. But Weary says that the concern is unwarranted if cows are housed in small groups. "The risk of one animal

getting sick and affecting the others is real when you're talking about large groups, but not with smaller groups like two or three," he says.

## **Background**

The study, conducted at UBC's Dairy Education and Research Centre in Agassiz, B.C., involved two cognitive tests for two groups of Holstein calves housed in individual pens or in pairs.

In the first test, researchers introduced a novel object (a red plastic bin) into the calf's pen. When first exposed to the novel object all calves showed interest, as expected. But after multiple encounters with the bin, the individually housed calves continued to respond as if this was their first exposure, while the paired calves began to habituate and ignored the bin.

"The test suggests that individual rearing can make calves more sensitive to novelty, and thus less able to habituate to changes in their environment," says Prof. Dan Weary. "This could make it more difficult for a farm animal to be trained or to do something as simple as walk down a path and not be overwhelmed by a bright light or a new noise."

In the second test, the calves were taught to complete a simple task, approaching a black bottle full of milk and avoiding an empty white bottle. After the calves learned to preferentially visit the black bottle, the researchers switched the rules to determine how well the calves were able to adjust to a change in rules.

Rebecca Meagher, co-author, and a postdoctoral research fellow in UBC's Animal Welfare Program, explains: "At first, both the individually housed and pair-housed calves initially struggled with the task, but after a few training sessions the pair-housed calves began approaching the correct bottle while the individually housed calves

persisted with the old strategy, visiting the incorrect bottle more often. This type of learning deficit has also been found in laboratory animals that are housed individually."

Provided by University of British Columbia

Citation: Cows are smarter when raised in pairs (2014, February 26) retrieved 5 May 2024 from <https://phys.org/news/2014-02-cows-smarter-pairs.html>

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