

Stand out from the herd: How cows communicate through their lives

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Alexandra Green recording dairy cows at Mayfarm, Camden. Credit: Lynne Gardner/University of Sydney

Farmers might finally be able to answer the question: How now brown cow?

Research at the University of Sydney has shown that cows maintain individual voices in a variety of emotional situations.

Cows 'talk' to one another and retain [individual identity](#) through their lowing.

Studying a herd of 18 Holstein-Friesian heifers over five months, Ph.D. student Alexandra Green from the School of Life and Environmental Sciences determined that the cows gave individual voice cues in a variety of positive and negative situations. This helps them to maintain contact with the herd and express excitement, arousal, engagement or distress.

The study recorded 333 samples of cow vocalizations and analyzed them using acoustic analyses programs with assistance from colleagues in France and Italy. The paper was published this month in *Scientific Reports*.

The conclusion of the research is that farmers should integrate knowledge of individual cow voices into their daily farming practices.

"We found that [cattle](#) vocal individuality is relatively stable across different emotionally loaded farming contexts," Ms Green said.

Positive contexts were during estrus and anticipation of feeding. Negative contexts were when cows were denied feed access and during physical and visual isolation from the rest of the herd.

"We hope that through gaining knowledge of these vocalizations, farmers will be able to tune into the emotional state of their cattle, improving [animal welfare](#)," Ms Green said.

She said that by understanding these vocal characteristics, farmers will be able to recognize individual animals in the herd that might require individual attention.

"Ali's research is truly inspired. It is like she is building a Google

translate for cows," said Associate Professor Cameron Clark, Ms Green's academic supervisor.

It was previously known that cattle mothers and offspring could communicate by maintaining individuality in their lowing. Ms Green's research confirms that cows maintain this individual voicing through their lives and across a [herd](#).

"Cows are gregarious, social animals. In one sense it isn't surprising they assert their individual identity throughout their life and not just during mother-calf imprinting," Ms Green said. "But this is the first time we have been able to analyze voice to have conclusive evidence of this trait."

Ms Green traveled to Saint-Etienne, France, to work with some of the best bioacousticians in the world, including co-authors Professor David Reby and Dr. Livio Favaro, to analyze the vocal traits of the cattle.

The study will be incorporated into her doctorate, which investigates cattle vocal communication and use in welfare assessment on dairy farms.

More information: Alexandra Green et al. Vocal individuality of Holstein-Friesian cattle is maintained across putatively positive and negative farming contexts, *Scientific Reports* (2019). [DOI: 10.1038/s41598-019-54968-4](#)

Provided by University of Sydney

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