



# Research Reports

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### **The individual matters: Personality traits in dairy cattle**

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People vary in how they react to stressful situations and this can affect their health and quality of life; differences that are largely explained by individual personality traits. In cattle, we also see that individuals differ in how they respond to stressful situations. However, we do not yet understand to what extent these differences are related to individual personalities, and how these traits affect animal welfare and productivity. In a series of studies done at the UBC Dairy Education and Research Centre, we investigated (1) the expression of different personality traits in dairy calves and their consistency until adulthood, and (2) how these personality traits affect how dairy calves feed, grow, interact with others, and respond to stressful management practices.

Personality of dairy cattle is measured in a series of standardized tests designed to subject individual animals to various types of challenges. These tests include exposure to new situations – such as a novel environment, an unfamiliar human, or a novel object – which are aimed at measuring fearfulness and exploratory traits. In another test, the motivation of the animal to return to the herd after a short period of isolation reflects how sociable cattle are. We found that dairy calves were consistent in their behaviour during these tests, particularly during the earlier and later periods of life. There was, however, a period of instability during puberty where personality changed, which supports work in other species showing that personality changes during major developmental periods. We also showed that calves exhibiting a higher motivation to reunite with the herd after a short period of isolation were also more likely to be in closer proximity to other calves in the home pen. These findings collectively indicate that several personality traits can be assessed in dairy calves and cows, and that these traits are relatively stable over time.

Can personality traits tell us about how well (or not) dairy calves will do on the farm? We found that more exploratory calves ate more grain and gained more weight than calves that were less exploratory. Furthermore, calves that were slow to learn to drink from the automated milk feeder took longer to complete weaning, likely because they also were slow to learn to eat from the grain feeder. Fearful calves responded more strongly to a short transportation event (to a new facility), suggesting that these animals are more vulnerable to stressful situations. These findings collectively demonstrate that personality traits can identify calves that are likely to perform well on the farm (such as growth rate), and those likely to cope well with stressful but common management practices (such as weaning and transportation). Future work is needed to explore how management of calves and cows can be tailored to individuals of different personalities so that all animals have the best opportunity to succeed on the farm.



*Personality testing of dairy calves. Left: This calf was scored as a fearful calf during a novel object test. Right: This calf was scored as an interactive calf during an unfamiliar human test.*

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