

**Inter-animal variation in milk fat C18:1 *trans*-10, C18:1 *trans*-11 and C15:0 concentrations in early lactating dairy cows**

The objectives of the current study were to evaluate the potential of milk fatty acids (C18:1 *trans*-10, C18:1 *trans*-11 and C15:0) in SARA related inter-animal variation in early lactating dairy cows. 150 Holstein cows were monitored from calving until 4 weeks in milk (WIM), when cows were subjected to a gradual increase in concentrate. Increasing proportions of dietary concentrate coincided with increases in milk fat C18:1 *trans*-10 concentration which was consistent with previous SARA induction trials. Most C18:1 *trans*-10 outliers were observed at 2 and 3 WIM, with variation in C18:1 *trans*-10 being highest at 3 WIM. Cows with higher *trans*-10 C18:1 concentration usually accompanied with the increase of C15:0 concentration and decrease of *trans*-11 C18:1 concentration while cows with low *trans*-10 C18:1 concentration accompanied with a steady C15:0 and C18:1 *trans*-11 concentration. From 3 to 4 WIM, cows with higher C18:1 *trans*-10 concentration further increased or decreased which suggest the different capacity of cows coping with concentrate diet. These results suggest that milk fat C18:1 *trans*-10, C18:1 *trans*-11 and C15:0 concentrations could be potential markers for the study of inter-animal variation.