# Investigating the importance of subclinical ketosis in robotic milking systems

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The use of robotic milking systems is increasing worldwide. While many studies have shown pros to these systems, the amount of data collected by these machines is overwhelming to the producer and often ignored. As cows are free in these systems to milk more often, they are producing higher quantities of milk, and the increase in energy required to support this production level has been linked to an increase in prevalent illnesses, such as subclinical ketosis (SCK). The objectives of this study were to describe SCK in robotic milking herds, and to explore factors associated with SCK. A total of 430 cows across 2 commercial robotic milking herds in the Fraser Valley of British Columbia were enrolled in this study 1 week prior to dry off and followed until 60 DIM of the next lactation. Blood samples were collected from the time of dry off, weekly through the prepartum period, the day of calving till 4 days in milk (DIM), then every other day until 14 DIM, and a final sample at 21 DIM. Blood was analyzed cow-side for beta-hydroxy butyrate (BHB) and glucose and sent off for analysis for non-esterified fatty acids (NEFA). As this project is still ongoing, only preliminary results are available. SCK was defined as BHB ≥ 1.2 mmol/L and was diagnosed 426 times among 142 cows in both farms. Of the cows diagnosed with SCK, 63% had 2 or more SKC events. The prevalence of SCK varied across DIM, with the highest prevalence occurring at 8 DIM (21%). Additionally, cows with a body condition score of 3.5 or greater in the dry period were 1.4 times (95% CI = 0.55-1.88) more likely to experience SCK. Cows in the 7th lactation had the highest odds of experiencing SCK (1.9 times more likely than primiparous, (95% CI = 0.99-2.85). Cows with longer dry periods (>62 days) were 3.0 times (95% CI = 2.2-4.1) more likely to experience SCK compared with cows with a dry period of 51 days or less. Future objectives will investigate SCK incidence and the relationship with sensory data (rumination, eating time, milk production, milk frequency, etc.) to determine if new blood thresholds for SCK within robotically milked herds need to be defined.
**Take home message**: This research aims to re-examine how we diagnose and detect SCK within robotic herds.

# Nutritional evaluation of energy value, total digestible nutrients and feed milk value of chickpea varieties growth in western Canada for dairy cows

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There is limited information about detailed nutritional value of chickpeas for ruminants. The objectives of this study were to evaluate metabolizable and net energy values, total digestible nutrients, and feed milk value of chickpeas varieties growth in western Canada for dairy cows. Three chickpea varieties were grown in three locations in western Canada. The truly digestible neutral detergent fibre, crude protein, fatty acid, and non-fibre carbohydrate as well as total digestible nutrients were determined and the energy values including digestible energy, metabolizable energy and net energy were determined using the NRC-summary approach. The feed milk value was determined based net energy for lactating dairy cow. The treatment design was one-way structure and the experimental design was a randomized complete block design with variety as a fix effect and location as a random effect. The data was analyzed using SAS MIXED model procedure. The results showed that the total digestible nutrients of chickpea varieties ranged from 86.7 % DM to 87.2% DM. The average metabolizable every of chickpea varieties ranged from 3.2 to 3.3 MCal/kg. The net energy for lactation, maintenance, and growth were from 2.0 -2.1 Mcal/kg, 2.2 to 2.3 Mcal/kg, 1.5 to 1.6 Mcal/kg, respectively. The feed milk value based on net energy for lactation ranged from 2.91 to 3.01 kg milk per kg DM.
**Take home message:** This study indicated that chickpea variety did not show a great impact on energy values, total digestible nutrients and feed milk value for dairy cows.