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Customising dry period length: metabolic and behavioural effects

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Shortening or omitting the dry period improves the energy balance and metabolic status of dairy cows in early lactation. Apart from early lactation, however, metabolic and welfare effects are less beneficial or unclear. Cows tend to fatten in late lactation or have limited persistency to be continuously milked for a second lactation. Moreover, the dry period in late lactation is often considered to be a rest period for the cow, and the consequences of omitting the dry period for the cow are unknown. Also, the metabolic response to a short or no dry period differs between cows. The current paper gives an overview of our work concerning short and no dry periods in relation with: 1. feeding strategies to limit fattening and increase lactation persistency; 2. behaviour of cows in the months around calving; and 3. individual cow characteristics that determine metabolic status of cows after a short or no dry period. Reducing dietary energy level for cows with no dry period did not affect lactation persistency, but reduced the energy balance and weekly body weight gain during 44 weeks of lactation. Feeding a more lipogenic diet for cows with a short (30-d) or no dry period did not affect lactation persistency or the energy balance during the complete lactation, although a lipogenic diet resulted in lower plasma insulin and IGF-1 concentration and greater plasma growth hormone concentration, compared with a glucogenic diet.

No dry period resulted in a 1 hour shorter lying time before calving, but in a 1 hour longer lying time and greater feed intake after calving, compared with a short dry period. Individual cow characteristics like parity, body condition score at calving, DGAT-1 genotype, and milk yield level determined the metabolic response of cows to a short or no dry period, compared with a conventional (60-d) dry period.

In conclusion, feeding strategies can be used to limit fattening of cows with no or short dry period, but the studied feeding strategies had limited value to increase lactation persistency. Behavioural changes around calving suggest a better adaptation to a new lactation for cows with no dry period, compared with a short dry period. Individual cow characteristics could be used to develop a cow-specific management system for the dry period.

