

Research delves into effects of shorter dry periods on health and fertility

Short and sweet?

Shortening the dry period could have positive health, fertility and milk production benefits, but more research is needed to ensure that science and husbandry keep pace with the modern dairy cow. We spoke to a leading dairy research scientist and a vet to find out more.

text **Rachael Porter**

The practice of drying off cows at six to eight weeks before calving dates back to the early 19th century and has been widely applied in dairy herds ever since. But some researchers, vets and producers are beginning to question this practice, particularly after some studies shed a different light on the long tradition of a dry period for dairy cows.

Cows that were continuously milked – with no dry period – showed an improved energy balance, as well as health and fertility, in the following lactation.

Today cow characteristics, such as negative energy balance and the incidence of metabolic disorders and reduced fertility, and societal concerns, like compromised animal welfare, antibiotic use and high labour costs, contribute to the current discussion on how to optimise dairy cow management. With this in mind, scientists at the Dutch Wageningen University felt that the potential to improve cow health and fertility by a shortened dry period justified a re-evaluation of the dry period length of the modern high-production dairy cow.

“We set out to review the current knowledge on dry period length in relation to energy balance, fertility and cow health,” said study leader Ariëtte van Knegsel.

On-going experimental work was included in the review. This randomly assigned animals to dry period length treatments – either zero or 30 days dry – and included a

control group, which had a conventional dry period of approximately eight weeks.

Other benefits

The study found that shortening the dry period of dairy cows, or even omitting the dry period, can have advantages when it comes to managing health and fertility of high producing dairy cows. A shortened dry period is also known to be beneficial for fat and protein production and could lower veterinary costs and ease cow management.

“Practical evidence is limited at the moment, probably due to questions and uncertainties concerning the management of cows with a shorter dry period,” says Dr van Knegsel.

“Firstly, shortening the dry period costs milk in early lactation and experimental studies on subsequent lactation milk yields and persistency are lacking.

Table 1: Milk production and energy balance of dairy cows with a prior dry period of zero, 30 or 60 days.

	dry period length (days)		
	0	30	60**
number of cows	56	55	56
pre calving*: week -8 to -1			
milk (kg/day)	13.8	7.7	0.0
energy balance (kJ/kg)	76	75	160
body condition score	3.1	3.0	3.0
post calving: week zero to 14			
milk (kg/day)	32.7	38.7	43.3
energy balance (kJ/kg)	39	-59	-132
body condition score	3.0	2.5	2.2

* Week -8 to -1 relative to calving; milk production variables are the average during eight weeks

** Average daily production during final eight weeks before calving



More milk: shortening the dry period also extends lactation length



Ariëtte van Kneysel: "Optimal dry period length could be different for every herd"

"Secondly, there is a strong link between the dry period and mammary health. On the one hand, the start of the dry period is known as a period with increased risks for new mammary infections – particularly for cows with high milk yields prior to drying off.

"But, on the other hand, during the dry period antibiotics are applied to treat subclinical mammary infections and prevent potential new infections."

Dr van Kneysel adds that there are also indications that colostrum quality, or immunoglobulin concentration, from cows with no dry period is reduced. So the effects of dry period reduction on total calf health and well-being are unknown.

Net returns

The effects on net farm returns will also contribute to the decision to shorten or eliminate the dry period. "This will depend on extra milk yield pre calving, reduction in milk yield during the complete lactation, the extent of increase in milk fat and protein, and the reduction in veterinary and labour costs associated with the occurrence of metabolic disorders and reduced fertility," she says.

"The optimal dry period length is expected to be dependent on milk production, persistency, health status and labour availability. Therefore, it could be different for each herd or individual cow and a cow- or herd-specific strategy may be the best approach."

Dr van Kneysel and her team are currently studying the effect of conventional (60 day), short (30 day) and no dry period in a herd of 168 cows during two successive lactations. Preliminary data (see Table 1) show an improvement in body condition score (2.9 versus 2.6) and greater body weights (686kg compared with 661kg) in early lactation after a dry period of between



Rob Drysdale: "Some clients are reducing the dry period down to around 42 days"

zero and 30 days compared with 60 days. Some UK producers are already shortening the dry period and it certainly has benefits, according to dairy vet Rob Drysdale, from the West Sussex-based Westpoint Veterinary Group.

Practical view

"Some of my clients are being proactive in this area and together we're looking at reducing the dry period down to between 40 and 42 days. That said, I'd never recommend a dry period shorter than 36 days and any move towards reducing the number of days dry should be strategic – not accidental.

"It should also suit the individual animal. We're only looking at healthy cows that are giving lots of milk in late lactation and with no mastitis or cell count issues."

Mr Drysdale's experience is that a 42-day dry period has no impact on yield in the following lactation and adding an extra 20 days to the previous lactation can result in an extra 500 litres of milk for some cows. It's also beneficial on units with limited dry cow accommodation and it helps to simplify management.

"All dry cows can be fed the same ration and can be run as a single group. This eliminates the 'far off' period, when many cows tend to be put outside in a field and forgotten about."

He believes that if cows are healthy then there's no reason for the dry period to be any longer than 42 days. First lactation heifers are the exception – drying off later can impact on the second lactation to the tune of around 10%. "No one can really explain that at the moment. But we know that it happens."

Older cows, conversely, benefit from better fertility and milk yield when there dry period is shortened. "They avoid the negative energy balance – or its severity is certainly reduced – in early lactation and this has a positive effect on their ovaries and oocyte production." |