RESPONSIBLE **ANTIBIOTIC USE**, DRY-OFF PROGRAMS

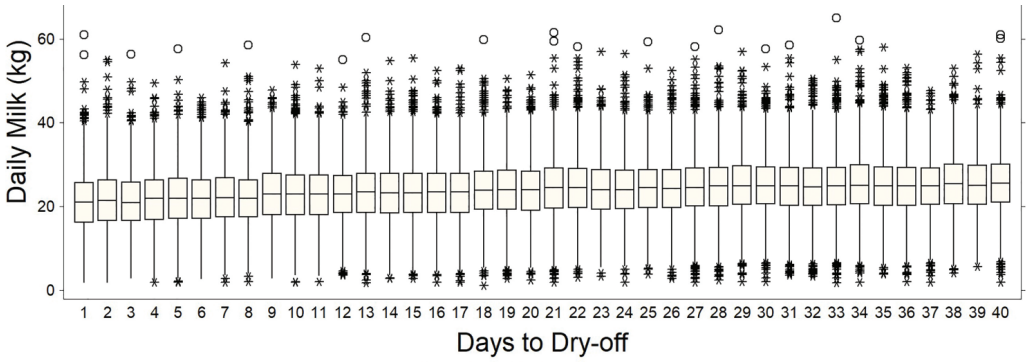
Editor's note: This article was provided by Ann Godkin on behalf of the selective dry cow therapy project advisory committee, which includes producer Norm McNaughton, along with Guy Seguin and Ashley Wannamaker from Dairy Farmers of Ontario, Robyn Elgie from the Ontario Association of Bovine Practitioners, Richard Cantin from Lactanet, Dave Kelton from the Ontario Veterinary College and Cynthia Miltenburg from the Ontario Ministry of Agriculture, Food and Rural Affairs.

As part of Dairy Farmers of Ontario's (DFO) selective dry cow therapy (SDCT) project, several activities have taken place. Two surveys have been conducted and data from Ontario herds have been analyzed. See full project details at www.scc200.ca.

SURVEY RESULTS

Surveys were completed by 461 producers and 52 veterinarians to capture current management information and feedback about SDCT.

Figure 1: Dairy milk production prior to dry-off



Individual cow milk production on the last test day before dry-off was graphed for 118,413 Holstein cows drying off in Lactanet herds in the 12 months ending November 2019. For these cows, the last test day came from one to 40 days prior to the reported dry date. The expectation was as the test day got closer to dry-off, milk production would be lower. This would suggest cows had lower milk production as they approached dry-off. However, these data show very little decline, with an average milk production of about 20 kg each test day, regardless of whether the test day was close to or far away from the last test day. *Data courtesy of David McKeen from Lactanet, and analysis courtesy of David Kelton from the Ontario Veterinary College's department of population medicine.*

Among the producers, 63 per cent used blanket antibiotic treatment for all cows at dry-off, while 37 per cent used some form of selective treatment based on somatic cell counts (SCCs) (25 per cent), treatment history (18 per cent), lactation number (six per cent), culture or other data (six per cent). About 38 per cent spent zero days preparing a cow for dry-off (abrupt), while 30 per cent spent up to a week. In addition, 53 per cent of producers used teat sealant—most of them used it on all cows at dry-off.

Among the veterinarians who responded, 79 per cent said 10 per cent or fewer of their clients were using SDCT, although 65 per cent of vets felt 11 per cent or greater of clients could use it successfully. The biggest concerns veterinarians had about implementing SDCT was the risk of more clinical mastitis (73 per cent), higher bulk tank SCCs (69 per cent), and the lack of both herd (35 per cent) and cow (52 per cent) validated selection protocols.

Interestingly, more producers indicated they were already using SDCT compared with the proportion believed to be doing so by veterinarians.

REDUCING MILK PRODUCTION AT DRY-OFF

Research studies emphasize the impact of milk production at dry-off on the risk of mastitis in

the following lactation. Research in Ontario suggests milk production needs to be below 22 kilograms per day (*Dingwell et. al.*, 2003) to reduce the risk of a cow leaking and experiencing a new mastitis case in the following lactation. Other research suggests less than 18 kg or even 12 kg is desirable.

Judging by the level of milk production at dry-off in data from Ontario herds in 2019 (*Figure 1*), and from discussions the advisory committee has had so far with producers, these suggested targets seem very low to many. Ultimately, it may be that one number will not suit all herds nor be the correct number for all high-producing Ontario cows within each herd.

While very important, reducing milk production alone will not replace antibiotic therapy when exposure to bacteria at dry-off is high. Other factors also come into play. However, the need to have a standard program to reduce milk production to a much lower volume than what is currently attained as a component of a successful dry-off program is very worthy of consideration. Implementing management methods to reduce milk production and decrease fresh cow mastitis is clearly warranted now without waiting for more research.

Not all herds will be able to successfully reduce antibiotic use at dry-off—this is not the goal of this project. However, there are many herds that have achieved excellent udder health and have a high percentage of cows in their herd that likely do not benefit from antibiotics at dry-off.

The project is meant to educate producers in finding the right cows to treat and monitoring the outcomes of changes made. The goal is to equip veterinarians with the tools needed to help herd owners use as little antibiotic as possible, but as much as is necessary.

Representatives from DFO, Lactanet, the Ontario Association of Bovine Practitioners, the Ontario Ministry of Agriculture, Food and Rural Affairs and the Ontario Veterinary College are working with Ceptor Consulting on this project. This project was funded by the Canadian Agriculture Partnership, a five-year federal-provincial-territorial initiative.