THE UNIVERSITY OF BRITISH COLUMBIA

RESEARCH REPORTS

dairy education & research centre

Vol 17, No 1 **November 2017**

Farm Size and Animal Welfare

Concerns about farm animal welfare often revolve around the issue of farm size. Critics suggest that animals on larger farms are less likely to receive individual attention, and that the shift to larger farms results in a decline in standards of care and ultimately a lower quality of life for these animals.

For those that ascribe to this view the news is bad. Farm size shows every indication of continuing to grow as the number of dairy farms declines (Fig 1). In terms of animal welfare, concerns appear to fall into three broad categories: 1) that the technologies inherent to large farms are detrimental to the animals, 2) that due to dilution of worker effort over a larger number of animals, the standard of care provided to individuals animals will decline, and 3) that some practices perceived to be beneficial, like access to the outdoors, may become impractical once farms reach a certain size. In the sections that follow we review evidence relating to all three concerns.

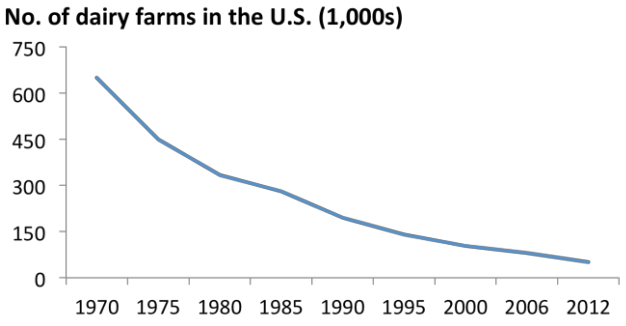

Fig 1. Changes in the number of farms in the United States (x 1,000) that produce milk since 1970. Data are adapted from Blayney 2002; USDA 2007; 2016.

Technology: Good or bad for welfare

Imagine a milking parlour on a large, modern farm. All you see are workers, equipment and individual partitions. You have to look closely to see the cows' legs (and more importantly their udders) peeking out from beneath all the hardware and technology. But is all this technology bad for welfare? Consider for a moment the tie-stall barn, an alternative milking system still common on smaller farms in eastern Canada and parts of the US. Cows are milked in their stalls, often with far less hardware and software, but this also means that cows may restrained in their stall 24 h/d, sometimes 365 d/year with little opportunity for social contact and self grooming. The technology of the milking parlour comes with loose housing for dairy cows, providing animals much greater control of their environment (including when to go and eat, to socialize with other cows, scratch that itch on her rump, when to lie down in a stall, and even deciding which stall they wish to use). Overall, we could find no consistent evidence that technologies on larger farms are bad for welfare.

Are the standards of care provided to individual animals lower on larger farms?

Somewhere, perhaps deep in our ordinary conception of what makes for a good life for farm animals, is the idea that the contact between farm animals and the people who care for them enriches both their lives. If this is true then larger farms may be worse for

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animal welfare, as these commonly feature a higher ratio of animals to caregivers.

Despite the importance of this idea, little work that has examined the relationship between farm animals and farm workers and how this relationship changes with farm size. Work done in Austria measured how willing cows were to allow people to approach, and used this as a measure of how fearful the cows were of the people. Approach distances varied widely across the 35 farms assessed, from zero (the people were in direct contact with the cows), to almost two metres, but this variation in approach distance showed no relation to farm size. This study worked with farms that were reasonably small by modern American standards (fewer than 100 cows), but at a minimum the results suggest that there is no simple relationship between farm size and the quality of the cow-caregiver relationship, at least within the range of farm sizes studied.

For further discussion on this topic let us turn to the excellent statistics compiled by the USDA. These show that larger farms are, for example, more likely to use a designated calving area, more likely to systematically evaluate dystocia, more likely to feed colostrum soon after birth, and more likely to assess the quality of the colostrum-feeding practices. Taken individually, each one of these features may not be essential for good welfare, but in combination they point, if anything, to a more positive situation on larger farms. One factor potentially accounting for some of the variation in all these features is the quality of advice the farmer receives. The norm in the dairy industry is for farmers to have a close and on-going relationship with a veterinarian who can provide such advice, but smaller farms are also less likely to consult with a veterinarian on a routine basis.

Are beneficial practices less likely to be used on larger farms?

Some practices perceived to be especially beneficial for welfare are not easily implemented once farms reach a certain critical size. One of the most discussed examples of this type of practice is the availability of pasture for dairy cows, in part because access to pasture is closely linked to good welfare in the minds of both farmers and the public.

Once again the USDA (2016) statistics are telling, but in this case they actually conform to the negative expectation concerning farm size (Fig. 2). A large number of the smallest farms in the U.S. do provide lactating cows with some access to pasture, on intermediate-sized farms (less than 500 cows) pasture access is less common, and on the largest farms (i.e. those with more than 500 cows) pasture is rarely provided.

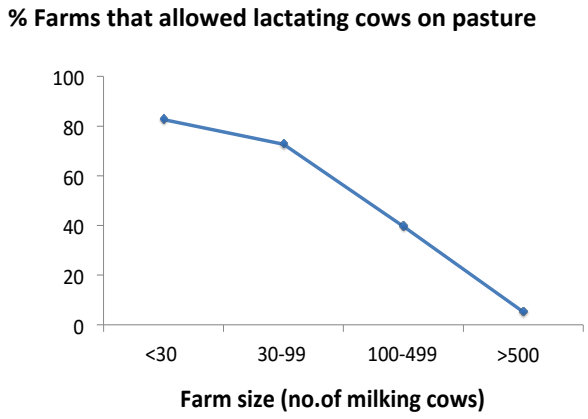

Figure 2. The % of farms that allow some or all lactating cows access to pasture in relation to farm size (number of milking cows). Data are adapted from the USDA, 2016.

We conclude that increases in farm size provide opportunities to improve welfare but also comes with welfare risks. Policy and advocacy efforts, instead of trying to reverse the increase in farm size, would be better directed toward generalizing the welfare benefits and minimizing risks on dairy farms of all sizes.

We are grateful to Clarissa Cardoso for her help in preparing this report. For further information please Email marina.vonkeyserlingk@ubc.ca or dan.weary@ubc.ca. This report is based on an invited review by Robbins et al., 2016. J. Animal Science. 94: 12: 5439-5455.