Stakeholder Views, Including the Public, on Expectations for Dairy Cattle Welfare

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Take Home Messages

- Public interest in the welfare of dairy cattle in on the rise.
- There is a growing recognition that the social pillar is an important component of sustainability, particularly for food animal production that takes place in intensive housing systems that are increasingly subject to societal criticism.
- Many dairy producers and veterinarians argue that tail docking should be discontinued and that pain mitigation should be used routinely when dehorning; producers who continue to oppose these practices are at great risk of undermining the social sustainability of their industry.
- The public is essentially unanimous in its expectation that cows should be provided access to pasture.
- Although most participants working within the dairy industry were in favour of providing cows access to pasture, many also identified challenges associated with pasture access.
- There is less evidence of consensus between different types of stakeholders on the issue of early separation of cow and calf.
- As public awareness increases of early separation of cow and calf we speculate that the public will become increasingly unwilling to accept this practice.
- Open discussion of contentious issues among farmers, industry professionals and the general public will allow for the development of practices that resonate with societal values.

WCDS Advances in Dairy Technology (2016) Volume 28: 147-158

Introduction

Questions concerning the sustainability of food-animal producing industries have become the focus of intense public debate by social critics, animal advocates, and scientists. Specific concerns about the welfare of dairy cattle is nothing new; producers and veterinarians have always been concerned about the condition of animals in their care and have tried to ensure that they are healthy and well nourished (von Keyserlingk et al., 2009). In the tradition of good animal husbandry, good welfare can be seen largely as maintaining high levels of production and the absence of illness or injury. However, recent interest in farm animal welfare stems more from concerns about pain or distress that the animals might experience, and concerns that animals are kept under "unnatural" conditions, with limited space and often a limited ability to engage in social interactions and other natural behaviours. For instance, the results of a recent survey indicated that providing assurances that dairy cattle are well treated, developing methods to incorporate pasture access and assurance of healthy products without relying on antibiotics or hormones, are all aspects deemed to be important by citizens when asked what their views on the ideal characteristics of a dairy farm (Cardoso et al., in press).

In addition to the tremendous increase in scientific research on the welfare of cattle, some new work has begun to investigate stakeholder views on dairy farming and practices common in the dairy industry (see review by Weary et al., 2016). Our objective of the current paper is to summarize some of our recent work on stakeholder views. We focus on 4 common management practices (tail docking, pain mitigation for disbudding/dehorning, access to pasture and cow calf separation) and describe how research in the natural sciences and social sciences can be integrated to identify more sustainable practices.

Farm Animal Welfare

For the purposes of this paper we have adopted the 3 part definition of animal welfare proposed by Fraser et al. (1997): 1) animals should exhibit good physical health and biological functioning, 2) animals should have the ability to live reasonably natural lives including the ability to perform natural behaviours that are important to them, and 3) animals should experience minimal negative psychological states and the presence of at least some positive psychological states. These different types of concerns can and do overlap. For instance, a lactating dairy cow unable to seek shade on a hot day (natural living) will likely feel uncomfortably hot (affective state) and may show signs of hyperthermia, and ultimately reduced milk production (poor biological functioning; von Keyserlingk et al., 2009).

These 3 key concepts of animal welfare have been included in official definitions such as the World Organization for Animal Health, which defines an animal as being in good welfare if it is “healthy, comfortable, well nourished, safe, able to express innate behavior, and it is not suffering from unpleasant states such as pain, fear, and distress” (OIE, 2013).

Agriculture Sustainability

Definitions of sustainability frequently include 3 pillars — economic, environment and social — which should be weighted equally (see von Keyserlingk et al., 2013). Traditionally, academics working in agriculture (for example, Foley et al., 2011; Steinfeld et al., 2006), and farmers and others working in food animal production systems, have placed greater emphasis on the economic pillar. More recently, sustainability discussions on animal agriculture have focused on the environmental concerns resulting in this aspect receiving much attention. For example, debates frequently discuss the role that food-animal production plays in competition for natural resources i.e. water, land, and energy, and how to mitigate any negative effects of food animal agriculture on the environment (Thornton, 2010). The fact that the social pillar has received the least amount of attention may be a consequence of it having an aspect of human values (Thompson, 1997), and because it is difficult to quantify using traditional natural science-based metrics. Furthermore, values are influenced by cultural norms within societies (Boogaard et al., 2011). Despite these difficulties there is a growing recognition that the social pillar is an important component of sustainability (von Keyserlingk et al., 2013). This may be particularly true for production that takes place in intensive housing systems that are the subject of increased societal criticism (Thornton, 2010).

Animal welfare is an important social concern and, as such, needs to be integrated into the concept of sustainable agriculture, rather than made to ‘compete’ with environmental goals (Hötzel, 2014) and economic goals (von Keyserlingk and Hötzel, 2015). To achieve this we argue that those not directly involved in farming must be accepted as credible stakeholders in the discussions on the way farm animals are cared for.

Stakeholder Engagement on Contentious Practices in Dairy Industry

Our perspective is that rather than focusing efforts on one-way efforts to ‘educate’ the public, we should instead develop methods of facilitating constructive, informed engagement among the stakeholders. We suggest that this approach will likely be more effective in identifying shared concerns and potential solutions likely to find general appeal.

At The University of British Columbia (UBC) we have been using web-based platforms to provide opportunities for people within the dairy industry to discuss dairy management practices with each other and with members of the public interested in these issues. For example, UBC's Cow Views site provided the opportunity for people to state their views and also vote on the views of others. The idea was to get people discussing uncomfortable issues in dairy farming. Our aim was to use these discussions to provide farmers and the industry a better basis for making informed decisions about management on farms and policy for the industry.

For each issue, participants were given a brief background of the perceived advantages and disadvantages associated with each practice (see tail docking below for example). They were then asked to vote on whether or not the practice should continue or not. We recruited participants into multiple virtual 'town hall' meetings, such that participants could see each other's responses, but participants in one meeting could not see the reasons discussed in other meetings. In this way each meeting provides an independent test of how this type of discussion unfolds. Also, an especially persuasive reason can only influence the votes within a single town hall meeting.

Our intention was not to collect a random or representative sample of any specific population, but rather to include a diverse range of participants to increase our chances of achieving saturation in views. The forum was made available on the internet so anyone with internet access could participate. To encourage participation of people in the North American dairy industry, we published brief articles in producer magazines (Progressive Dairyman and Ontario Farmer) that invited readers to participate. For the broader public samples we recruited online via Mechanical Turk (MTurk, www.mturk.com). Several studies have assessed this tool and concluded that this approach results in high-quality and reliable data (e.g. Buhrmester et al., 2011; Rouse, 2015; Saunders et al., 2013) that is more representative than many other samples (Mason and Suri, 2012; Rouse, 2015).

To provide additional context, for each of the specific issues we have summarized below, we also state the current position in the National Farm Animal Care Code of Practice for the Care and Handling of Dairy Cattle published in 2009, and where relevant have described policy in other parts of the world.

▪ Should we Continue Docking the Tails of Dairy Cattle?

The responses to this question are fully described in Weary et al. (2011). Briefly, 178 participants were provided the following context:

"Tail docking dairy cattle first became common in New Zealand where workers thought this could reduce their risk of diseases like leptospirosis that can be carried by cows. Some milkers also preferred working with docked cows because the shortened tail was less likely to hit them in the parlor. Some people also felt that docking improved cow cleanliness, and cleaner cows should be exposed to fewer pathogens and have improved udder health.

There may also be disadvantages associated with docking. For some, at least, there is a 'yuk' factor of seeing cows without their tails. Docking might also cause pain, and prevents cows from using their natural fly-swatter. For these reasons several European countries including Norway, Sweden, the Netherlands, the United Kingdom, and Switzerland have prohibited tail docking of dairy cattle.

More recently, Canada's new Code of Practice for the Care and Handling of Dairy Cattle states that dairy cattle "must not be tail docked".
In the United States, about 40% of dairy cows have docked tails."

Participants were then asked, "*Should we continue docking the tails of dairy cattle?*"

Approximately 79% of participants were opposed to docking (i.e. responded "No" to the question). Responses varied with participant demographics (e.g. females were more likely than males to oppose docking), but in every demographic sub-group (e.g. by gender, age, country of origin and dairy production experience) the majority of respondents were opposed to tail docking. Common reasons for opposition to docking included the lack of scientific evidence that docking improves cleanliness or udder health, that docking is painful for cows, that docking is unnatural and that tails are important for controlling flies. Some respondents in favour of docking cited cow cleanliness as an issue, despite the scientific evidence showing no positive effect of docking on cow cleanliness or udder health. Additional reasons included protecting producer safety.

These results illustrate the range of reasons that are cited for supporting and opposing tail docking. This approach can be used to better target outreach efforts (e.g., improving farmer education on the lack of positive effects of docking on cleanliness and udder health while addressing concerns about producer safety).

Given the extent of public opposition to this practice it is not surprising that in some countries tail docking has been banned, including Norway, Sweden, the Netherlands, the United Kingdom and Switzerland. This has also likely motivated corporations to take a stand on this issue as part of their corporate

social responsibility practices. For example, Nestle[1], the world's largest food company, has announced their objection to tail docking.

In Canada, dairy producers have taken a clear position on this issue. Our Code of Practice for the Care and Handling of Dairy Cattle has a requirement that cows "must not be tail docked unless medically necessary." This is also the position of the Canadian Veterinarian Medical Association[2] and the American Association of Bovine Practitioners. Most recently the National Federation of Milk Producers in the US announced that members of their assurance program will be prohibited from tail docking their cows effective January 1, 2017.

▪ Should we Provide Pain Relief for Disbudding and Dehorning Dairy Calves?

The responses to this question are fully described in Robbins et al. (2015).

For this issue participants were provided the following context:

"The developing horns of dairy calves are typically removed to reduce the risk of injuries to farm workers or other cattle that can be caused by horned cattle. Horns of calves three months of age or older are normally removed surgically ("dehorning") by scooping, shearing or sawing. Horn buds of younger calves are typically removed ("disbudding") using a caustic paste or a hot iron.

There is considerable scientific evidence that all of these procedures cause pain. The immediate pain can be reduced using a local anesthetic to provide a nerve block — this procedure has been used safely for decades and costs just pennies a shot. Pain can persist 24 hours or more; this longer lasting pain can be reduced using non-steroidal anti-inflammatory drugs (like the ibuprofen you take for a headache). Providing calves a sedative before the procedure can reduce handling stress and make the procedure easier to carry out.

In many countries some pain relief is required. For example, Canada's new Code of Practice for the Care and Handling of Dairy Cattle requires that pain control be used. Approximately 18% of dairy farms in the United States report using pain relieving drugs for disbudding or dehorning dairy calves."

[1] http://www..com/Media/NewsAndFeatures/nestle-animal-welfare-commitment
[2] http://www.canadianveterinarians.net/documents/tail-docking-of-dairy-cattle

Participants then answered the question "*Should we provide pain relief for disbudding and dehorning dairy calves?*"

Participant composition was as follows: dairy producer or other farm worker (10%); veterinarian or other professional working with the dairy industry (7%); student, teacher or researcher (16%); animal advocate (9%) and no involvement with the dairy industry (57%).

Of 354 participants, 90% thought pain relief should be provided when disbudding and dehorning. This support was consistent across all demographic categories suggesting the industry practice of disbudding and dehorning without pain control is not consistent with normative beliefs. The most common themes in participants' comments were: pain intensity and duration, concerns about drug use, cost, ease and practicality and availability of alternatives.

These results show a clear disconnect between current practice (with many famers failing to provide pain control) and the attitudes of participants (including dairy producers) in these virtual town hall meetings. Causing pain to animals under our care, especially when this pain can easily be prevented, no longer seems acceptable. Our challenge is to find ways of getting pain control techniques applied widely on dairy farms.

In Canada, dairy producers have also taken a clear position on this issue. The Code of Practice for the Care and Handling of Dairy Cattle requires that "Pain control must be used when dehorning or disbudding." In many countries (i.e. Sweden, Denmark, Netherlands, New Zealand and Australia) pain control for disbudding and dehorning is a legal requirement (ALCASDE, 2009; NAWAC, 2005; PIMC, 2004).

▪ Should Dairy Cows be Provided Access to Pasture?

The responses to this question are fully described in Schuppli et al. (2014).

For this issue participants were provided the following context:

"On many dairy farms cows are always kept indoors. Some dairy farmers believe that well-designed indoor housing provides a more comfortable and more suitable environment for the cows. In addition, some farmers keep cows indoors to more easily provide and control diets formulated to sustain high milk production.

Others consider pasture access to be important. For example, some believe that grazing is more environmentally sustainable, that pasture provides a healthier and more comfortable environment for cows, and that grazing is a natural behaviour important for cows.

Participants then answered the question "*Should dairy cows be provided access to pasture?*"

A total of 414 people participated. Providing access to more natural living conditions, including pasture, was viewed as important for the large majority of participants, including those affiliated with the dairy industry. This finding is at odds with current practice on the majority of farms in the U.S. where less than 5% of lactating dairy cows have routine access to pasture (see USDA 2007). To our knowledge there is no research about how many lactating cows in Canada have routine access to pasture.

Participant comments showed that the perceived value of pasture access for dairy cattle went beyond the benefits of eating grass; participants cited as benefits exposure to fresh air, ability to move freely, ability to live in social groups, improved health, and healthier milk products. To accommodate the challenges of allowing pasture access on farms, some participants argued in favor of hybrid systems that provide a mixture of indoor confinement housing and grazing.

Despite the public indicating that access to pasture is important (see also Cardoso et al., 2016), the Canadian Dairy Code of Practice (NFACC 2009) is largely silent on this issue, recommending only "for bedded-pack or composted-pack barns, provide access to pasture or an exercise yard to decrease labor and bedding requirements." In contrast, Sweden requires that cows be given pasture access during summer months (Ministry for Rural Affairs -Government Offices of Sweden, 2009).

▪ Should Dairy Calves be Separated from the Cow Within the First Few Hours after Birth?

The responses to this question are fully described in Ventura et al. (2013).

For this issue 195 participants were provided the following context:

"Dairy farmers often remove the calf from the cow within the first few hours of birth. This is done in response to several concerns including the following: the calf may become infected from pathogens carried by the cow or her environment; the calf may become injured by the cow or the barn equipment; the calf will not be able to nurse from the cow and receive adequate colostrum (first milk produced by the cow after birth) and milk; the calf will drink too much milk which increases the farmer's cost of feeding and increases the risk of diarrhea; allowing the cow and calf to bond will result in greater separation distress when separation does occur; farms are often not well designed for cow-calf pairs, so keeping cows and calves together can be considered an extra chore. Others consider that some form of cow-calf contact is an

important element of natural behavior, and believe that this contact is beneficial to the cow and calf. On these farms the cow and calf are kept together for days or even weeks after birth."

Participants then answered the question "*Should dairy calves be separated from the cow within the first few hours after birth?"*

Opponents of early separation contended that it is emotionally stressful for the calf and cow, it compromises calf and cow health, it is unnatural, and the industry can and should accommodate cow-calf pairs. In contrast, supporters of early separation reasoned that emotional distress is minimized by separating before bonds develop, that it promotes calf and cow health, and that the industry is limited in its ability to accommodate cow-calf pairs. Opponents of separating calves from their cows in the first few hours after birth often based their views on the emotional experiences of cows and calves. They compared the bond of a cow and her calf to the bond between mother and offspring in other species.

A major theme raised by proponents was that separation was inevitable, and that early separation was easier on the cow and calf than separation at a later age. There is considerable scientific evidence in support of this claim. Separating calves at an older age results in a much stronger response (high rates of vocalization and other activities) in comparison with calves separated soon after birth (Flower et al., 2003). Some respondents also believed that early separation minimized disease transmission from the cow. We are aware of little evidence to support this link.

The Canadian Dairy Code of Practice (NFACC 2009) states the following:

"Generally, dairy calves are separated from their mothers shortly after birth. There are benefits to both calf and dam by allowing the pair to bond. Allowing the calf to spend a longer period of time with the dam may result in lowered morbidity and mortality in the calf; however, separation stress to both the cow and calf will be higher the longer they are together. Cow health is generally improved by allowing the calf to suckle (related to oxytocin effects on the post partum uterus)".

Based on this summary of information the Code provides the following recommended best practice — "reduce separation distress by either removing the calf shortly after birth or by using a two-step weaning process."

The fact that cows and calves are routinely separated at birth is an issue that the public is largely unaware of, perhaps explaining why this issue has received little attention within non-dairy audiences. However, we speculate that as external stakeholders become more aware of this practice they will become increasingly unwilling to accept this practice.

Conclusions

The examples illustrated in this paper show how social science methodologies can document the shared and divergent values of different stakeholders, the associated beliefs regarding the available evidence, and the barriers in implementing changes. In some cases, we documented shared values amongst the majority of stakeholders (e.g. that dehorning causes pain), but we also found important disconnects between current dairy production methods and widely held public values. Understanding the attitudes of people affiliated and unaffiliated with the dairy industry allows for the identification of contentious topics as well as areas of agreement; this is important in efforts to better harmonize industry practices with societal expectations.

We have also identified where the Code of Practice on the Care and Handling of Dairy Cattle aligns with stakeholder expectations and where gaps exist. We encourage the dairy industry to work to overcome these gaps.

Acknowledgements

M.A.G. von Keyserlingk and D.M. Weary are supported by Canada's Natural Sciences and Engineering Research Council (NSERC) Industrial Research Chair Program with industry contributions from the Dairy Farmers of Canada (Ottawa, ON, Canada), British Columbia Dairy Association (Burnaby, BC Canada), Westgen Endowment Fund (Milner, BC, Canada), Intervet Canada Corporation (Kirkland, QC, Canada), Zoetis (Kirkland, QC, Canada), BC Cattle Industry Development Fund (Kamloops, BC, Canada), Alberta Milk (Edmonton, AB, Canada), Valacta (St. Anne-de-Bellevue, QC, Canada), and CanWest DHI (Guelph, ON, Canada).

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