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Imagining the ideal dairy farm

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ABSTRACT

Practices in agriculture can have negative effects on the environment, rural communities, food safety, and animal welfare. Although disagreements are possible about specific issues and potential solutions, it is widely recognized that public input is needed in the development of socially sustainable agriculture systems. The aim of this study was to assess the views of people not affiliated with the dairy industry on what they perceived to be the ideal dairy farm and their associated reasons. Through an online survey, participants were invited to respond to the following open-ended question: "What do you consider to be an ideal dairy farm and why are these characteristics important to you?" Although participants referenced social, economic, and ecological aspects of dairy farming, animal welfare was the primary issue raised. Concern was expressed directly about the quality of life for the animals, and the indirect effect of animal welfare on milk quality. Thus participants appeared to hold an ethic for dairy farming that included concern for the animal, as well as economic, social, and environmental aspects of the dairy system.
Key words: public aspiration, cow, well-being, citizen

INTRODUCTION

The way animals are raised on farms has changed greatly over the past century, including a growth in farm size and increased technology (Fraser, 2008). Critics argue that more intensive farming practices can harm the environment, rural communities, worker safety, food quality, food safety, and animal welfare (Boogaard et al., 2010; Godfray et al., 2010; Garnett et al., 2013).

Concerns regarding dairy production include painful procedures, such as tail docking (Weary et al., 2011), and practices that are perceived to interfere with important natural behaviors, such as cow-calf separation (Ventura et al., 2013) and zero grazing (Schuppli et al., 2014). These studies provide some evidence that although different stakeholders may share similar concerns, in other instances they have opposing views. This disconnect was also observed in a recent study where farmers strongly believed that urban citizens are ignorant about agricultural practices, and thus public perceptions on agriculture should be considered irrelevant (Benard and De Cock Buning, 2013). Although there can be disagreements about the issues and potential solutions (Vanhonacker et al., 2008; Hötzel, 2014), it is widely recognized that public input is needed when developing policy on farm animal welfare standards (e.g., Groot Koerkamp and Bos, 2008; O'Connor and Bayvel, 2012).

More broadly, understanding the values of the general public may be important in the development of sustainable food animal agriculture, as the adoption of animal husbandry practices inconsistent with public expectations may undermine social sustainability (e.g., von Keyserlingk et al., 2013; von Keyserlingk and Hötzel, 2015; Weary et al., 2015). To our knowledge, few attempts have been made to solicit the views of the general public about their aspirations for specific agriculture practices (e.g., Gaymard and Bordarie, 2015). This type of research may provide valuable insights into which factors are important to the general public as well as identify potential areas of concern that, if not addressed, may hinder the sustainability of the dairy industry.

The aim of this study was to assess the views of people not affiliated with the dairy industry on what they perceived to be the ideal dairy farm and their associated reasons.

MATERIALS AND METHODS

Participants were invited to respond to a single open-ended question: "What do you consider to be an ideal dairy farm and why are these characteristics important to you?" They were free to express any aspects they felt were important. Data were collected via an online

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platform (Fluid Surveys, http://fluidsurveys.com/). To better characterize the participants, they were first asked several multiple-choice demographic questions before answering the study question. The survey was completely anonymous and was approved by the University of British Columbia Behavioral Research Ethics Board (H13–01466).

Survey Methodology

Participants were recruited online from the United States 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; Saunders et al., 2013; Rouse, 2015) that is more representative than many other samples (Mason and Suri, 2012; Rouse, 2015). Participants were given the following information before taking the survey: "Take a short survey asking your opinion of dairy farms. We want to know what characteristics you think make the 'ideal' dairy farm." Upon completion of the survey, participants were paid (US$0.50). This convenience sample was intended to provide a rich and diverse set of responses achieving saturation on the topic of what characteristics make up an ideal dairy farm. These results should not be considered representative of the US population.

The survey was launched twice, 6 mo apart, once on June 10, 2014, and again January 29, 2015. The consent form for the first cohort contained the term "Animal Welfare Program" as part of the authors' affiliation, and we were concerned that this phrase may have framed some responses. Thus, for the second cohort, this phrase was not included. The MTurk platform was set to recruit 250 US respondents in each cohort (e.g., June 2014 and January 2015).

Survey Analysis

Demographic data, separated by cohort, are presented on Table 1. Open-ended responses were analyzed using the NVivo Qualitative Data Management Program (version 10, 2014; QSR International Pty Ltd., Doncaster, VIC, Australia). The analysis was based on the qualitative method described by Huberman and Miles (1994): data reduction (information is coded finding themes), data display (organization of the information allowing for conclusions to be drawn), and conclusion drawing and verification (noting of patterns and themes and using confirmatory tactics such as triangulation between 3 readers). Three trained evaluators blind to demographic information independently examined 30 randomly selected responses, breaking them down into phrases, which were then used to identify the primary themes. The 3 readers compared results and reconciled any discrepancies. The lead author then undertook the final analyses.

The thematic analyses of the responses identified 4 primary features of an ideal dairy farm, which participants justified using reasons that were coded into 2 distinct themes (Table 2). The main themes therefore arose from the responses rather than being determined a priori. Many sentences bridged more than one theme and were thus coded into multiple themes.

RESULTS

Given that we were primarily interested in the views of respondents not directly associated with dairy industry, responses from participants that identified themselves as farmers (n = 7) were eliminated. In addition, responses that were so inarticulate that they could not be coded (n = 25) were deleted. The remaining 468 usable responses (234 from the June 2014 cohort and 234 from the January 2015 cohort) were from 46 US states and the District of Columbia (no responses were obtained from Montana, Wyoming, Nebraska, or South Dakota).

The frequencies of themes obtained from the 2 cohorts were similar, with "cows" arising as the primary theme accompanied by the main reason "animal welfare and ethics" (Table 2). Given that the prevalence of these themes did not vary between the 2 cohorts, we concluded that including the term "Animal Welfare" in the ethics consent form for cohort 1 did not bias in these results. Therefore, data from the 2 cohorts were pooled for the qualitative analysis. Results are described according to theme, with sub-themes for the reasons. Themes are listed in order of prevalence.

Features Related to the Cow

The most commented characteristic of the ideal farm was "cow," reflecting concerns about cow treatment, specifically that the farmer or workers should treat cows well, humanely, or with kindness. For example, one respondent (**Resp.**) stated, "An ideal dairy farm would be one that has no mistreatment of their livestock" (Resp. C1 113).

Respondents also mentioned that cows should be allowed space to roam. This was reflected by terms such as "open space," "outside," and "on pasture where the cow could be free" ["I think a dairy farm that tries to use all natural feed and allows the cattle plenty of open space to roam and graze" (Resp. C1 13)]. Reference to pasture was cited mainly in the context of space allotments, though some respondents did not specify if they considered pasture important just to roam outside, or