

Animal Welfare Standards for the Dairy Industry: Background and Justification

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■ Take-Home Messages

- ▶ The new Code of Practice for the Care and Handling of Dairy Cattle provides a mechanism for dairy producers to demonstrate their standards for good animal care.
- ▶ The Code is science-based and includes outcome-based animal welfare standards, such as realistic targets to reduce lameness.
- ▶ The Code of Practice includes 'requirements' that all Canadian producers are expected to follow, such as no tail docking and using pain control during dehorning. The Code also includes recommended best practices.
- ▶ Canada's dairy industry still requires a mechanism of demonstrating to consumers that the requirements and recommendations in the Code are being followed.

■ Introduction

The Dairy Farmers of Canada have recently adopted the revised Code of Practice for the Care and Handling of Dairy Cattle (2009), which was developed under the newly established code development process of the National Farm Animal Care Council (NFACC) (www.nfacc.ca). In this article, we describe the need for this code, the process that was followed in its development, some of the more important changes that have occurred since the previous Code was developed in 1990, and we suggest some ways forward for assuring consumers that the code is being followed by dairy producers in Canada.

■ Why Do We Need an Animal Welfare Code of Practice?

The new Code for dairy cattle was developed against a backdrop of public concern about farm animal welfare in other developed countries, and a rising tide of animal welfare legislation in the US.

Public concern in Europe about the way that farm animals are treated in modern, intensive housing systems led European governments to pass legislation that effectively prohibited some of the more economically successful ways of rearing farm animals, such as conventional battery cages for laying hens and tether stalls for pregnant swine (Veissier et al. 2008). The dairy industry was relatively untouched by this legislation except for an EU-wide directive that calves must be kept in groups after 8 weeks of age, and legislation in individual European countries, such as the UK, requiring the use of anaesthetics when dehorning, and in Sweden requiring that cows have some access to pasture. A large survey of attitudes of Europeans (Eurobarometer 2005) showed considerable concern about the welfare of farm animals. This concern is somewhat less for dairy cattle (66% of people questioned felt that the welfare of dairy animals was either good or very good), but recent developments suggest that the dairy industry's relative immunity from legislation may change. For example, at the request of the European Commission, the European Food Safety Authority recently conducted a scientific review of the welfare of dairy cows, and concluded that there are several risks to their welfare, particularly from intensive housing, the lack of access to pasture and from strong genetic selection for high milk production (EFSA 2009).

North American governments have largely avoided a legislative approach to animal welfare, leaving food retailers such as McDonalds to establish their own standards, or letting independent labelling systems develop, such as the Certified Humane and Animal Welfare Approved labels in the US or the BC SPCA label in Canada. In the USA, the interest of the food retailers and food processors has led to welfare auditing systems, in which third party auditors visit farms and determine the extent that the farm has met welfare standards (described in Mench 2008). A major driver behind these audits was concern about losing customers.

It seems that these non-legislative approaches have not fully satisfied critics or the public. The Humane Society of the United States (HSUS) has run a highly successful campaign appealing directly to the public in states that allow citizen led referenda. The result is farm animal welfare legislation in several states banning battery cages for laying hens, tether stalls for pregnant swine, and veal "crates". Most prominent was the passage of Proposition 2 in California, in which 63% of voters favoured legislation that effectively

prohibited battery cages in a state that was one of the largest egg suppliers in the US. US politicians have seen the voter appeal of animal welfare issues and have begun to pass animal welfare legislation directly. For example, California recently passed a bill prohibiting tail docking of dairy cows. The Los Angeles Times (Feb 13th, 2009) quoted the State Senate Majority leader as stating: "With no added benefit to the safety of our food supply, tail docking is nothing more than needless animal cruelty which must be stopped". These recent developments show the strength of public concern about farm animal welfare and the willingness of American politicians to start passing animal welfare legislation.

Canada has traditionally relied on the belief that voluntary codes of practice will satisfy the public. Canada's industry-led voluntary codes of practice were recognized as innovative when developed in the 1980's, but now can be criticized as insufficient when compared with legislation or audited standards adopted in Europe and the United States. It is against this background that the NFACC launched a new process to revitalize the codes of practice.

Although the focus of the Codes of Practice is upon assuring consumers, another reason for paying more attention to animal welfare is the economic cost of poor welfare. For example, lameness is considered one of the most serious animal welfare issues in the dairy industry. Estimates of the prevalence of lameness in Canada suggest that between 20 and 30% of dairy cows in Canada are lame at any one time (Cramer et al. 2008). The cost of lameness has been estimated at around \$400/case, equating to a \$60M annual loss from lameness in Canada.

We suggest that to deal adequately with animal welfare issues, dairy producers in Canada need a clear statement of industry standards and a means of assuring the public that Canadian producers are following these standards. The new code meets the first of these needs.

■ The Code Development Process

As part of its mandate, NFACC has established a new process for developing codes of practice, which are described fully in its web site (www.nfacc.ca). One important change from the previous Code was the establishment of a more formal, objective and transparent process for bringing the results of research into the codes. To achieve this, NFACC established a scientists' committee whose job it was to identify and review the research that has been done on key concerns. A guiding principle is that the codes should be based on science. Fortunately, a considerable amount of research has addressed the welfare of dairy cattle (Rushen et al. 2008; EFSA 2009; Von Keyserlingk et al. 2009). To ensure transparency and an even-handed approach, the leading scientific organizations in Canada that deal with farm animal welfare,

the Canadian Veterinary Medical Association, The Canadian Society of Animal Science and the Canadian region of the International Society for Applied Ethology, were asked to propose scientists who would cover the range of scientific disciplines involved (e.g. animal behaviour, nutrition, veterinary medicine etc.). The scientists' committee report is publicly available from the NFACC website (Rushen et al. 2009).

The committee that developed the code of practice itself consisted of dairy producers, federal and provincial government representatives, representatives from transporters and food retailers, researchers, veterinarians and a representative from the Canadian Federation of Humane Societies. This Code Development Committee was not bound by the recommendations made by the Scientists' Committee, but used these to provide a basis for their own recommendations.

■ What Does the Code Say?

The new code of practice has now been distributed to all Canadian dairy producers and is publicly available on the NFACC website. We cannot describe all of the code here, but instead review some of the most important elements.

The new Code now distinguishes "Requirements" and "Recommended best practices". Requirements establish the minimum acceptable standards that Canadian dairy producers are expected to meet. In this way, the codes are no longer meant to be purely voluntary. For example, one requirement is that dairy cows should no longer be tail docked (unless it is medically necessary). Tail docking was once thought to improve cow cleanliness and reduce mastitis, but considerable research (reviewed in Rushen et al. 2009) shows that tail docking has no advantage for cleanliness or udder health and results in discomfort to the cow (primarily through increased difficulties in dealing with flies). Thus tail docking poses a risk to the welfare of cattle without providing any compensatory benefits. Canadian research, funded by Canadian dairy organizations, played an important role in resolving this issue.

Recommended best practices are meant to complement the requirements in showing the direction towards achieving higher than minimum levels of animal welfare. For some issues, like dehorning and disbudding, the code uses a combination of requirements and recommendations. A requirement of the new Code is that pain control be used when calves are being dehorned. Local anaesthetics such as lidocaine are very effective at blocking the pain during the process of removing the horn. However, once the anaesthetic has worn off, post-operative pain can last for many hours. This post-operative pain can be treated with a longer lasting analgesic such as ketoprofen. Sedating the calf during dehorning with xylazine can also reduce the overall stress of the

procedure and provides some additional pain relief. The code gives dairy producers some flexibility in choosing among the different options of pain control, but recommends as a best practice a combination of anaesthetic, analgesic and sedative.

The new code also places more emphasis on outcomes than did the old code. Typically, animal welfare standards are “input-based”, that is, they describe the management systems and the housing environment of the animals, often in quite prescriptive detail. For example, the requirement not to tail dock is “input-based”. However, some input based standards are often difficult to establish. For example, a precise specification of optimal stall width or length for lactating cows in terms of the number of centimetres, or a precise specification of the depth of bedding to be used is often challenging where there are cows of very different sizes, and very different types of bedding being used. In contrast, outcome-based standards describe the desired outcome. Thus, the desired outcomes of a well-designed, well-bedded lying stall are that injuries to the cow are rare, the cow is able to rest comfortably and for long enough, and the cow can get up and lie down easily. Thus the requirement for stalls is that they be built “to minimize hock and knee injuries and to allow cows to rise and lie down with ease”. Poor stall design is shown not by measuring stall dimensions, but by finding that the cow has injuries or has difficulty getting up or does not lie down for long enough. Technological developments have now led to some simple and cheap ways of measuring how much time dairy cows spend lying down (Ito et al. 2009), which can help assess cow comfort and the adequacy of stall design and management.

Specifying the outcome that is desired can help producers see the importance of following the recommendations. For example, as with many other standards, the new dairy codes emphasize the importance of giving adequate colostrum to newborn calves to ensure good health. Surveys of Canadian dairy farms find that over 30% of calves may still suffer from a failure of passive transfer (Trotz-Williams et al. 2008), suggesting that the colostrum management routines on many farms are not adequate. The adequacy of colostrum management routines can be determined by measuring the actual immunoglobulin concentrations in the calves’ blood, and the new code includes this as a recommended best practice. Implementing this practice will require some effort, as few producers are currently measuring immunoglobulin concentrations (Vasseur et al. in press).

Outcome-based standards are best if a clear target is given to producers. This was the approach taken in the code towards lameness. We now know many of the risk factors that result in cows becoming lame (Rushen et al., 2009). These include poor stall design leading to the cow spending more time standing up, wet poorly maintained concrete floors, and inadequate hoof trimming routines. A low incidence of lameness on a farm would show, therefore, that the producer is doing many things right. Unfortunately, the

prevalence of lameness in dairy cows is high. Surveys in Ontario show an average prevalence of between 20% and 30%, despite the enormous financial losses associated with this malady (Cramer et al. 2008). Lameness is one of the most serious welfare problems of dairy cows and is a major source of pain. Keeping lame cows without providing adequate treatment or pain relief is unacceptable and the code has the requirement that “lame cows must be diagnosed early and either treated, culled or euthanized”. To provide a realistic target, the code recommends as a best practice that the prevalence of severe lameness be kept below 10%. The survey data suggests that approximately 75% of Canadian dairy farms are already meeting this target, so it should not be an insurmountable challenge for the remaining producers to introduce corrective action to bring the prevalence of lameness on their farms down to this level.

Meeting this standard requires that dairy producers keep records of the incidence of lameness in their herds. Unfortunately surveys show that dairy producers can substantially underestimate the number of their cows that are lame (Espejo et al. 2006). A CD-ROM has been produced by Alberta Agriculture (Farm Steps 2008) to help dairy producers become more sensitive to the signs that cows are becoming lame. This gait scoring system was used in on-farm surveys to assess the prevalence of lameness in BC.

An important principle of the NFACC process is that the codes be based on scientific evidence, and the scientific committee took pains to ensure that the advice given to the code development committee was based on a broad scientific consensus. On some topics there was still insufficient research to draw a clear conclusion. One obvious example concerned the housing of milk-fed dairy calves. The most common way of housing young calves is in individual housing, especially in outdoor hutches. Dairy producers use this type of housing because it is believed to reduce the risk of illness by reducing transmission of illness from one calf to another. However, several surveys in the US and Sweden show that if groups are kept small and well-managed, the incidence of disease can be as low as in individual housing (Losinger and Henrichs 1997; Svensson et al. 2006). Furthermore, there seems likely to be other advantages for animal welfare in group housing since calves in groups have more space to exercise and have greater opportunities for social contact. Therefore, the new dairy code leaves open the option of either keeping calves in individual housing or in small, well-managed groups. However, the use of group housing combined with automated milk and grain feeders can reduce the costs of calf rearing, and we expect that the dairy industry will increasingly adopt this way of rearing calves as research examines the advantages with this type of system and identifies good management practices.

■ Verifying Compliance

Having a science-based industry standard is only the first step. We also need a way of showing consumers that Canadian dairy producers are following this standard. External audits are one way of demonstrating compliance. Audits can be first party (effectively self-assessments by the producers), second party (e.g. by a veterinarian or advisor), or third party audits (by an independent organization carried out for certification purposes). Third party audits have become increasingly common in the US, and are the surest way of assuring consumers that the products they buy come from animals that have been raised according to the standards, but there is also much potential in both self-audits and second party audits in helping dairy producers improve welfare on their farms. The Dairy Farmers of Canada have developed a simple self-assessment tool that producers can use to check their compliance with the new codes.

A second-party audit procedure has recently been developed for calves on Quebec dairy farms, and has been shown to have educational benefits for the producers and welfare benefits for the animals (Vasseur et al., in press). The project began with an exploratory survey involving 115 herds distributed throughout the province of Quebec. The survey identified the strengths and weaknesses of heifer rearing practices and provided the basis for an advisory tool to help producers identify management practices that needed improvement along with customized solutions that could be applied immediately to each farm.

The second-party audit focused on critical areas of risk to calf welfare: 1) calving management and care to newborn calves, 2) colostrum management, 3) management of painful procedures, 4) calf feeding, 5) weaning, 6) calf housing, 7) heifer feeding, 8) heifer housing, and 9) health. The on-farm visit lasted approximately 3 h and involved a number of steps. First, producers were asked a number of questions about management practices. Second, in-barn measurements were taken on the size and cleanliness of the pens etc. Third, there was a discussion with the producer about their results and asking the producers how useful they found the tool. The producers were involved in evaluating their management practices and agreed to perform some tasks before the farm visit. These tasks were: 1) taking colostrum samples and using a colostrometer to test the colostrum quality, 2) taking blood samples from calves soon after birth, and using a kit to check the passive transfer of immunity to the calves by analyzing the five blood samples, 3) recording all data regarding newborn calf management for these five calves into a "Calf Passport", and 4) keeping health and mortality records during a six-month period.

Six months after the on-farm visit, a meeting was held with participating producers to review the results of the project and share their observations on

how the evaluation process had helped their farms. All producers agreed that this tool was easily usable at the farm level and could help improve practices. Producers did change some practices as a result of participating. The most widely adopted practices included: routine use of the “Calf Passport” and health and morality records, checking the colostrum quality by using a colostrometer and providing 4 L of colostrum during the first colostrum feeding before the calf is 2h old.

The tool was developed with Valacta Inc. (the Quebec DHI association for Quebec and the Atlantic provinces) and was designed to be used as part of an advisory process. The calf and heifer management practice assessment tool will be available free of charge to all producers and stakeholders, in French and English in the Bovins laitiers section of the CRAAQ Agri-Réseau website (www.agrireseau.qc.ca/bovinslaitiers).

■ Conclusion

Issues of animal welfare are increasingly important to consumers and citizens in North America. The Canadian dairy industry has taken a pro-active approach in the development of the new Codes of Practice that clearly state the industry’s standards for animal care. To assure consumers that these standards are being followed some form of audit is now required.

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