



The Marketing of Male Dairy Calves in Canada

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NFAHW 
COUNCIL

This document was prepared by the National Farmed Animal Health and Welfare Council. The Council was formed in 2010 to advise governments and all other stakeholders in animal agriculture on matters of the health and welfare of farmed animals in Canada. The Council is funded jointly by non-government organizations with an interest in animal agriculture and federal, provincial and territorial governments. Council members are designated by their constituency because of broad expertise in animal health and welfare, public health and an interest in approaching topics and developing advice in the context of One Health.

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Introduction

Canadian dairy farms produce several hundred thousand male dairy calves each year, most of which are sold to specialist calf or veal producers to be raised for slaughter. Many of the calves are collected from the farm when very young, co-mingled with animals from other farms and transported considerable distances. The process raises obvious concerns about animal health, animal welfare and farm biosecurity.

In order to review the marketing process and make recommendations, the National Farmed Animal Health and Welfare Council convened an Expert Panel that included dairy farmers, veal producers/calf growers, veterinarians, regulators, auction operators and scientists. The Council is extremely grateful to the Expert Panel for their many insights and recommendations and to Dr. Devon Wilson for excellent organizational work; the full report of the Panel appears as Appendix 1 below. Based on input from the Panel and its own deliberations, the Council prepared this report and recommendations.

1. The need for greater clarity on how the new Transport of Animals Regulations will affect the welfare of calves and the calf-rearing sector

Marketing practices for male dairy calves vary widely across the country. Calves are sold at a wide range of ages, may be marketed directly or through auctions or assembly stations, and undergo varying lengths of transportation to rearing facilities. The Council notes that the new Transport of Animals Regulations (described below) will require major changes to current practices. More detailed information on current practices is needed so that the likely effects of the new regulations on the health and welfare of the animals can be assessed.

It is recommended that the Canadian Veal Association, with input from others in the calf-rearing sector, take urgent action to clarify the marketing processes for male dairy calves in different parts of Canada, and identify the implications of the new Transport of Animals Regulations on the health and welfare of the calves and the sector in general.

2. The variability in calf rearing practices on dairy farms

Dairy farms raise male calves in very different ways, and research shows high variability in the condition of calves at the time they are sold. The high variability may reflect differences in attitudes as some dairy farmers value calf health and welfare and provide a high standard of care, while others see male calves as a low-value by-product that warrants minimal investment. Economics are almost certainly a factor, as the price farmers receive for calves may fall below the cost of keeping them until they are well established. Moreover, many farms – even new ones – are not designed to keep male calves beyond a few days of age and may not have enough staff with the skill and knowledge to raise calves successfully.

“Bench-marking” involves collecting outcome data from different farms and using it to inform producers of how their performance compares with that of their peers. Bench-marking has proven a strong motivator for improvement in adult cow management.

It is recommended that the Canadian Veterinary Medical Association, the Canadian Association of Bovine Veterinarians, together with other veterinary organizations and dairy producer organizations (1) encourage knowledge transfer to improve the quality of calf care, and (2) explore the use of bench-marking for both male and female calves as a means of motivating improvement and monitoring progress in the industry.

3. Education and innovation

Educational initiatives have emerged in different parts of the country.

- Les Producteurs de bovins du Québec (PBQ) has created a forum involving the veal, beef and dairy sectors to promote communication about calf health, and it has developed educational materials including a decision tool to guide the shipping of calves.
- Veal Farmers of Ontario (VFO) regularly hosts a Healthy Calf Conference and is developing educational tools on calf health management for veterinarians.
- The Ontario Veterinary College includes a 3-day module on calf health and production in its Dairy Health Management Certificate course.

A number of promising practices have emerged.

- There is an emerging market for pre-conditioned calves that are vaccinated and weaned.
- Quebec’s new electronic passport system could be used to record features such as vaccination status that may be useful for calf growers.
- Some dairy herd veterinarians include a strong focus on good calf management.
- The use of beef semen in the dairy herd may improve the economic value of calves, and the higher value of the animals might also allow improvement in facilities and management.
- Some calf grower operations assess colostrum management (e.g., using a refractometer) and provide dairy farmers with feedback on calf performance.

It is recommended that the dairy and calf sectors (1) maintain or enhance educational activities for veterinarians and producers, including knowledge about the health status of calves leaving dairy farms and the length of journey that they may experience, and (2) promote broader awareness and adoption of promising practices.

4. Assessing fitness for transport

At the time they are shipped from dairy farms, calves range from healthy, vigorous animals through to weak, dull, dehydrated and feverish animals. Age is sometimes used as a simple proxy for fitness for transport; for example, some countries prohibit the shipping of calves aged below 4 days (New Zealand) or 14 days (European Union). There is logic to this approach, as a

calf that has been well fed and managed for several days should be more robust, but this will depend on the quality of care it receives. A more accurate but still simple way of scoring fitness for transport is required.

It is recommended that the dairy and calf sectors support research to identify simple but accurate methods of scoring fitness for transport in young calves.

5. Biosecurity

Calf buyers/truckers can pose a biosecurity risk to dairy farms. A few farms have a specific location, away from the herd, where calves are collected, but most do not limit the truck's entry into the farm. Trucks that carry different classes of animals may pose a particular risk.

It is recommended that the dairy sector's proAction program ensure that appropriate attention is given to recognizing and minimizing the biosecurity risk from trucks collecting calves.

6. Antimicrobial use

Stress caused by the marketing and transport of calves is thought to contribute to subsequent health problems, and some calf growers respond to such problems by significant use of antimicrobials including those classified as Category I (crucial for human medicine) . However, the emergence of antimicrobial resistance has led to a recognized need to reduce the use of antimicrobials – and to eliminate Category I antimicrobials – in animal production. However, complete elimination of Category I could create animal health and welfare problems for calves.

It is recommended that the calf grower sector, through education and awareness, promote the use of good management practices to maintain calf health to help reduce the use of antimicrobials, and to eliminate the use of Category I antimicrobials as much as possible.

7. Marketing regulations

Ontario is unique within Canada in having mandatory provincial inspection of auctions with inspectors or veterinarians empowered to designate compromised animals for treatment, euthanasia or prompt local slaughter. In addition, the provincial dairy association works actively with producers if a problem arises. The regulations are thought to have reduced the number of inappropriate animals sent to auction, although it may also shift some marketing of compromised animals into non-regulated sales channels.

It is recommended that all provinces consider implementing a regulatory system for auctions, assembly yards and other forms of livestock sales.

8. Euthanasia

A small but important fraction of calves sent to auction sell for very little or remain unsold and are euthanized. Some of these cases may reflect farmers not being willing, trained or equipped to perform euthanasia on the farm. Significant steps are being made toward appropriate use of euthanasia. As examples, the proAction program requires dairy farms to have a Standard Operating Procedure for euthanasia, the Code of Practice for Dairy Cattle provides guidance on acceptable methods, Dairy Farmers of Canada is developing animal welfare training tools for farmers that will include euthanasia of calves, and a project in Quebec is studying perceptions on euthanasia and management of non-ambulatory cattle to better inform the development of effective tools. In addition, in Quebec some technicians who visit veal farms for other purposes are trained and equipped to perform euthanasia on request.

The Council encourages the sector to continue to promote effective euthanasia through training, protocols, and efforts to understand and overcome barriers to euthanasia.

9. The need for appropriate phase-in of the new Transport of Animals Regulations

The new Transport of Animals Regulations, scheduled to come into force in February 2020, include several provisions that will require major changes to current practices for the marketing of male dairy calves. Most notably, under the new regulations:

- The current, widespread use of auctions for calves aged 8 days or less will not be permitted.
- Dairy farms wishing to market calves through auctions may opt to keep calves on the farm until 9 days or more, but many farms may currently lack appropriate facilities and skills for raising calves to these older ages.
- Even after the age of 8 days, calves that are too young to be fed exclusively on hay or grain would be limited to a single trip not exceeding 12 hours.

The new regulations are expected to have some benefits for animal welfare including preventing the shipping of calves with unhealed navels, and long-distance transport and unnecessary co-mingling of very young calves. However, to meet the regulations without unintended harms to calf health and welfare may require considerable change to infrastructure and skills. Alternatively, the new regulations might lead to more on-farm killing of male calves which would likely be resisted by both producers and the public. Moreover, if enforcement of the new regulations is focused mostly on auction markets and commercial trucking stations, marketing might be shifted to less-regulated sales avenues.

In summary, it appears likely that the new regulations will cause major changes in the marketing of calves and could lead to new problems of calf health and welfare until investment occurs in appropriate equipment, facilities and human skills.

To protect both the sector and the welfare of the animals, it is recommended that the relevant sectors (dairy, calf-growing, auction and transport) work with the Canadian Food Inspection Agency to negotiate a schedule and planned process for the implementation of the new

Transport of Animals Regulations that apply to calves so that appropriate changes can be made to procedures and infrastructure.

Appendix 1. Findings of an expert panel on the marketing of male dairy calves in Canada¹

Introduction

In 2019, the National Farmed Animal Health and Welfare Council, after extensive consultation, undertook to continue reviewing animal welfare and biosecurity in the marketing of animals, especially vulnerable groups of animals.² Having already completed a review of the marketing of cull dairy cows, the Council next convened a group of experts to discuss the marketing of male dairy calves in Canada.

Meeting participants were recruited through national boards whenever possible (e.g., Dairy Farmers of Canada, Livestock Markets Association of Canada, the Canadian Association of Bovine Veterinarians, National Farm Animal Care Council) and otherwise through provincial associations (Veal Farmers of Ontario, Les Producteurs de bovins du Québec), or other relevant industry contacts of the National Farmed Animal Health and Welfare Council. An effort was made to have participants from all regions of the country and all sectors closely involved in the marketing of male dairy calves.

The discussions focussed on the current practices of marketing male dairy calves and opportunities to improve calf health and welfare and the sustainability of the industry. Participants were invited to share their views and knowledge which has been summarized into the following area:

- Current marketing practices for male dairy calves across Canada
- Animal health and welfare challenges in the marketing process
- Underlying problems and conflicts
- Assessing fitness for transport
- Biosecurity
- Antimicrobial use
- Practices warranting attention and possible adoption
- Auction regulations and traceability
- Educational activities
- Euthanasia
- The effects of Canada's new Transport of Animals Regulations.

¹ The National Farmed Animal Health and Welfare Council is very grateful to all participants. A list of participants appears at the end of this document, together with a list of the terms used.

² National Farmed Animal Health and Welfare Council, 2019. "A National Farm Animal Welfare System for Canada – 2019". Available at: [https://www.ahwcouncil.ca/pdfs/animal-welfare-system/NFAHW%20Council Recommendation National%20Farm%20Animal%20Welfare%20System%20for%20Canada_2019.pdf](https://www.ahwcouncil.ca/pdfs/animal-welfare-system/NFAHW%20Council%20Recommendation%20National%20Farm%20Animal%20Welfare%20System%20for%20Canada_2019.pdf)

The present document provides a summary of the information and opinions shared at the expert consultation. Some of the information is based on the personal knowledge and experience of the experts rather than systematic data collection.

Current male calf marketing practices

The marketing of male dairy calves varies widely across Canada. Examples of current practices and regional differences were described by participants as follows:

- In British Columbia, an estimated one third of calves are sold at an auction or assembly station, and most calves are transported to Alberta, a trip that takes 12-16 hours under good conditions. Calves from Vancouver Island, northern BC and other outlying areas can have considerably longer travel times. An estimated 75% of calves are sold at <8 days.
- In Alberta, almost all calves go directly from dairy farms to one of several calf growers who also receive calves from other provinces. Even calves from northern Alberta are likely transported for longer than 12 hours from the first pick-up until off-loading. In some cases, the trip is approximately 16 hours with up to 30 separate pickups.
- Many calves from Saskatchewan are also transported to Alberta in trips that will exceed 12 hours.
- Similarly in Manitoba, most calves are sold at less than a week of age and go directly to Alberta in travel typically lasting over 12 hours. Commonly, calves are picked up from multiple farms, fed and housed overnight, and transported to Alberta the following day.
- Ontario has a sizeable veal production that sources mostly from Ontario dairy farms, with travel times typically below 12 hours, but calves also arrive regularly from Quebec and the Maritime provinces. About 80,000 calves are sold through auctions each year, while direct sales (from dairy farm to calf producer) comprise the remainder (perhaps one-half of the transactions). Some of the calves sold at auctions in Ontario are then re-marketed at a second auction, and some are transported to Quebec with a total transport time likely exceeding 12 hours.
- Quebec raises roughly 170,000 calves per year. About 140,000 are sourced from Quebec dairy farms, virtually all via auction. Many are collected by a transporter who may visit multiple farms in a day and may also collect adult cows. Travel times are mostly below <12 hours, and most calves are > 3 days old. The remainder of the calves come from the Maritimes, Ontario and the US, often with long travel times, sometimes up to 30 hours including a rest period.
- Calves from the Maritime Provinces are mostly transported to Quebec in journeys lasting over 12 hours. Most are 1-7 days old. Most Maritime calves are picked up by a drover who may visit multiple farms in a day. Calves are typically fed and rested overnight before being transported to veal production facilities in Quebec.
- In addition to these general patterns, throughout Canada there are producers who purchase or raise a small number of calves locally.

While this is a high-level and incomplete summary, participants observed that many of these market processes will no longer be allowed under the new Transport of Animals Regulations (described below) that are due to come into force in February 2020.

The expert panel recommends that urgent action be taken (1) to outline in greater detail the marketing processes for male dairy calves in different parts of Canada, and (2) to identify how current market practices and channels are likely to be affected by the new Transport of Animals Regulations.

Animal health and welfare challenges of male dairy calves

Participants noted that young male dairy calves tend to be vulnerable animals because:

- many factors, particularly excellent colostrum management, are necessary for satisfactory immunity to disease,
- very young animals have limited body reserves to meet the exertion and possible thermal challenges of travel and handling,
- any stress associated with handling can lead to further immune suppression,
- direct and indirect co-mingling of animals from different sources – sometimes involving different age categories and different species – exposes them to new pathogens, and
- involvement of dairy herd veterinarians with male calves, or with calves in general, is variable and often minimal.

Some dairy producers keep calves on the dairy farm for a period of days to let them become established before shipping. The animal health and welfare implications of this practice will depend on the housing, management, nutrition and health status of the herd. On excellent farms with high health status, keeping calves for some days before shipping should lead to a more robust animal with good immunity to disease. On other farms, keeping calves longer may have negative effects, for example if nutrition is inadequate, if poor air quality increases the risk of respiratory disease, or if low health status of the herd exposes the calves to important pathogens.

In light of the challenges, it is not surprising that recent studies in Canada show significant health problems among male dairy calves at the time of shipping or upon arrival at veal farms, as evidenced by an appreciable incidence of wet or infected navels, diarrhea, dehydration, respiratory disease and fever. Evidence also shows some deterioration in the health of calves after long-duration transport.³

³ Renaud, D.L., T.F. Duffield, S.J. LeBlanc, S. Ferguson, D.B. Haley, and D.F. Kelton. 2018. Risk factors associated with mortality at a milk-fed veal facility: A prospective cohort study. *J. Dairy Sci.* 101:2659-2668. <https://doi.org/10.3168/jds.2017-13581>; Stojkov, J., Wilson, D., Fraser, D. 2018. Critical control points for farm animal welfare along the transport continuum: Management of cull dairy cows and male dairy calves in British Columbia. BC Ministry of Agriculture.

“Bench-marking”, which has been applied to dairy farms in several regions, has proven to be an effective way of motivating and guiding improvement. The process involves collecting basic data on a range of farms (data for calves might include stillbirth rate, survival rate, growth rate and serum total protein as a measure of colostrum management) and communicating to producers how their results compare with those of similar farms. Similarly, when dairy producers ship calves, they may receive no direct feedback on whether the price paid for the calves was high or low compared to other calves, nor on the health and survival of their calves at the grower. Such information might also motivate change.

The expert panel recommends that bench-marking of both male and female calves (for example, by herd veterinarians), along with feedback of other information on performance, be explored to motivate improvement and to monitor progress in the industry.

Underlying problems and conflicts

The health and welfare challenges noted above involve a number of problems and conflicts in the sector, described by participants as follows:

- Dairy farmers differ in the priority they assign to male calf management. Some regard calves as a valuable product and provide a high standard of care. Others see male calves as less important than the females that are likely to become replacement heifers. Yet others see male calves as a by-product that warrants minimal investment, for example if the price they will receive for the calf is lower than the production cost of keeping it.
- Conflicts between farmers and auctions can occur, as some farmers are believed to send poor calves to auctions rather than euthanizing them (see below).
- There can be similar conflicts between transporters and farmers if farmers pressure transporters to take poor calves that transporters do not think should be loaded.
- There can also be a conflict with calf growers, as many growers would like well-established calves with a dry navel (sometimes citing 8-14 days of age), whereas some farmers do not wish to produce, and/or are not skilled at raising, such calves.
- Farm infrastructure may also not facilitate good calf care as many farms – even new ones – are not designed with adequate or suitable space to keep male calves beyond a few days of age.
- The regulatory system for animal welfare varies among provinces, with some provinces relying on SPCAs for enforcement while others use government staff or police, and expertise in farm animal welfare varies among agencies.
- The economic value of calves, which varies widely over time, has an important influence on the condition of calves at the time of sale. Furthermore, some markets require groups of uniform calves which can be challenging to assemble. For such reasons, when prices are low, there may be no economically viable markets for male calves especially in remote regions, and some are euthanized on farm.
- Across Canada poor quality calves that have little to no commercial value make up a small but important portion of calf sales at auction markets. In addition, calves of some less common breeds (Jersey, Ayrshire) often have little or no commercial value.

- High calf prices may increase the likelihood of transporters picking up compromised calves.

The expert panel recommends that the dairy sector, through the Code of Practice, education and other means, encourage knowledge transfer and cultural change so that male dairy calves are viewed as valuable animals and no less deserving of care than other classes of animals.

Assessing fitness for transport

In the experience of participants, calves at the time of shipping range from healthy, vigorous animals through to weak, dull, dehydrated and feverish animals. The age of the calf is sometimes used as a simple proxy for fitness for transport; for example, the new Transport of Animals Regulations use the cut-off of 8 days to determine whether calves may be transported to an auction. There is some logic to this approach, as a calf that has been well fed and managed for several days should be more robust than a newborn and can be expected to have a dry navel, but its condition will also depend on the quality of care it receives. Indeed, recent research suggests that the health status of calves at the time of shipping is either uncorrelated, or only weakly correlated, with age. A more accurate but still simple way of scoring fitness for transport is required.

The expert panel recommends that research be supported and undertaken to identify simple but accurate methods of scoring the fitness of young calves for transport.

Biosecurity

Participants suggested that calf buyers/truckers can pose a biosecurity risk to dairy farms. A few farms have a specific location, away from the herd, where calves are collected; others restrict buyers/truckers to the calf barn; but most do not limit the truck's entry into the farm. Trucks that carry different classes of animals may pose a particular risk.

The expert panel recommends that appropriate attention, perhaps through the dairy sector's ProAction program, be given to recognizing and minimizing the biosecurity risk from trucks collecting calves.

Antimicrobial use

In the opinion of the experts, stress caused by shipping calves can contribute to health problems after calves arrive at the grower facility. Some calf growers respond to health problems by significant use of antimicrobials including those of Category I that are considered of very high importance in human medicine. However, because of the alarming increase in resistance to antimicrobials, there is now great pressure to reduce the use of antimicrobials – and to eliminate the use of Category I antimicrobials – in animal production. Protecting animal

health through good animal management rather than antimicrobial use can also lower the cost of medication for growers.

Quebec has already eliminated Category I antimicrobials in calf production for preventive purposes, and therapeutic use now requires strong justification. After an initial adjustment this is now successful. However, complete elimination of Category I could create animal health and welfare problems because of the growing prevalence of multiresistant strains of Salmonella and other pathogens that are sensitive only to Category I antimicrobials.

The expert panel recommends that good management practices to maintain calf health be promoted through education and awareness to help reduce the use of antimicrobials, and to eliminate the use of Category I antimicrobials as much as possible, in line with responsible use guidelines and applicable regulations.

Practices warranting attention and possible adoption

Participants identified a number of promising management practices:

- In Ontario and elsewhere, there is an emerging market for pre-conditioned calves that are vaccinated, weaned and well established. These are sold for higher prices. Some buyers seek those animals specifically and pay a premium for them. These may constitute 15% of calves sold at auction in Ontario.
- Quebec has recently introduced an electronic passport system using an official tag. The record for each calf has 4 essential elements (age, date of birth, sex, breed (dairy vs beef)), but can also be used to record other features such as vaccination status that may be useful for calf growers. As this passport becomes more widely adopted it should also help facilitate Quebec's mandatory traceability requirements for recording all animals entering auction markets.
- Some buyers have had good success in using meloxicam at the time of loading.⁴
- Dairy Farmers of Ontario cooperates with provincial enforcement staff by visiting farms that have shipped inappropriate animals to auction. While this is done mostly for cull cows, the same model might be used more widely to correct inappropriate shipping of calves to auction.
- Although many herd health veterinarians are focused on reproduction, some also do a very good job of encouraging good calf management.
- The use of beef semen in the dairy herd may improve profitability and vitality of calves destined for the veal and dairy-beef industries.
- Some calf grower operations use methods (e.g., a refractometer) to measure colostrum success and provide dairy farmers with feedback on calf performance.

The expert panel recommends that the industry promote adoption of beneficial practices for the welfare of calves and biosecurity as noted above.

⁴ In accordance with a veterinary-client relationship

Auction regulations and traceability

Ontario is unique in having mandatory provincial inspection of auctions through the Livestock Community Sales Act. Inspectors or veterinarians can also designate compromised animals (e.g., with navel infection or severe weakness) for treatment, euthanasia or prompt local slaughter. Furthermore, the dairy industry in Ontario has worked with regulators to provide valuable feedback to its producers when a problem arises. After an initial period of adjustment, the situation is now seen as having a positive effect by greatly reducing inappropriate animals being sent to auction. However, as the Act applies to auctions but not to dealers or buying stations, it may also have shifted poor animals into direct farm-to-farm sales or uninspected markets that can create challenges for traceability.

The expert panel recommends that the regulatory system used in auctions in Ontario be considered by other provinces for auctions, assembly yards and other forms of livestock sales.

Educational activities

Participants noted that numerous educational initiatives are occurring across the country with respect to male calf management.

- Les Producteurs de bovins du Québec (PBQ) has created a forum with representatives from the veal, beef and dairy sectors to help improve communication and discuss strategies to improve calf health.
- The PBQ recently developed educational materials including videos, leaflets and a decision tool for deciding whether to ship calves. The decision tool includes parameters such as umbilical condition, age and rectal temperature which have been shown to be associated with disease at veal farms.
- Veal Farmers of Ontario (VFO) has hosted the Healthy Calf Conference in Ontario every second year since 2004 and is working to develop a wide array of educational tools for veterinarians regarding calf health management.
- The Ontario Veterinary College offers a Dairy Health Management Certificate course for veterinarians which includes a 3-day module on calf health and production.

The expert panel recommends that educational activities be provided for both veterinarians and producers across the country. This could include the use of conferences, webinars, videos, and other means of communication to document the health status of the male calves leaving dairy farms and highlight the journey that these calves could undertake.

Euthanasia

Participants noted that a small but important fraction of calves sent to auction sell for very little or do not sell at all and have to be euthanized. Some of these cases may reflect farmers using auction as a way to dispose of poor animals because other options are limited and they may not

be willing, trained or equipped to perform euthanasia. Appropriate use of euthanasia could greatly reduce the number of very poor calves that are shipped.

Important steps are being made toward appropriate use of euthanasia:

- In Quebec, some technicians who visit veal farms for other purposes are trained and equipped to perform euthanasia on request.
- ProAction requires dairy farms to have a Standard Operating Procedure for euthanasia.
- The Code of Practice for the Care and Handling of Dairy Cattle lists acceptable methods of euthanasia and provides guidance.
- Dairy Farmers of Canada is developing animal welfare training tools for farmers; these will include euthanasia of calves.
- In Quebec, Les Producteurs de lait du Québec, Valacta, Les Producteurs de bovins du Québec, the University of Montreal and Dairy Farmers of Ontario are working on a project on euthanasia and management of non-ambulatory cattle. The project involves focus groups and surveys to better understand dairy farmers' and other stakeholders' perceptions of these topics. The findings will inform the development of effective tools for farmers.

The meeting participants support the on-going progress through industry-led directives on understanding barriers to euthanasia and transfer of knowledge.

The new Transport of Animals Regulations

From the information provided by experts, it appears that the new Transport of Animals Regulations, scheduled to come into force in February 2020, include several provisions that will require changes to current practices for the marketing and production of male dairy calves. Most notably, under the new regulations:

- Calves aged 8 days or less cannot be sold through auctions and can be transported for a maximum of 12 hours, measured from the time of loading the first calf until unloading the last.
- Calves >8 days of age that are not fully fed on grain and hay can be sold at auction and then re-loaded, but the same 12-hour maximum total journey applies.
- Calves with an unhealed or infected navel are regarded as unfit for transport and cannot be loaded.

On the positive side, the new regulations could prevent the shipping of calves with unhealed navels, the co-mingling of very young, vulnerable calves at assembly points, and long-duration transport of very young animals. The regulations might also encourage farmers to keep more calves to 9 days of age before shipping to auction or assembly points; if combined with good management and feeding, this could make a better match with the interests of calf growers, auctions and transporters.

However, many experts at the meeting considered that the new regulations could have major effects on both the industry and on the welfare of animals, and that this impact is not widely

understood within the calf and dairy sectors. Furthermore, enforcement of the new regulations may be limited to auction markets and commercial trucking stations, whereas transport of calves marketed directly or through other avenues may prove difficult to regulate. Participants attempted to outline the likely effects.

- In BC, virtually all the current marketing would cease except perhaps calves in the central and eastern part of the province. Even if calves are kept on dairy farms to 9 days so that auction sales are allowed, typical travel times to Alberta would exceed the maximum.
- Within Alberta, growers would be unable to source a large fraction of the calves they buy from other provinces and also some that are sourced from northern Alberta where stops at multiple farms are likely to cause the total trip to exceed 12 hours.
- Saskatchewan and Manitoba would have little outlet for calves because the 12 hours of travel would be exceeded in most cases.
- In Quebec, many calves could not be sourced from within and outside the province because travel times are certain or likely to exceed 12 hours.
- The Maritime Provinces would lose their major market for calves.
- Ontario would be less affected as travel times are mostly under 12 hours and auctions are not the major method of selling.

Meeting the new regulations could require major changes in infrastructure and major investment. In time, for example, the following might be possible:

- In Quebec where auctions currently play a crucial role, calves could be kept to 9 days on the farm of origin. However, to do this while protecting animal welfare would require considerable improvement in the calf-rearing facilities and abilities of some producers.
- New calf-growing facilities might be developed in some dairy farming areas to allow more local sales as currently occur in Ontario. However, this would require time and investment.
- The use of sexed semen is expected to gradually reduce the number of male dairy calves, and the use of beef genetics could allow production of cross-bred calves of greater commercial value which might support investments of the type noted above.
- The system for the local slaughter of bob calves might conceivably expand, as seen in New Zealand, although this would be resisted by the veal sector.

In time, the above actions could allow the sector to adapt to the regulations; however, without the kind of significant changes in infrastructure and skills noted above, many male dairy calves are likely to become a waste product that is destroyed on the farm, as occurred in parts of Canada some decades ago. To make this transition without jeopardizing animal welfare would require many dairy farmers to be trained and equipped for euthanasia or to have access to prompt euthanasia services. Killing healthy calves would, however, be strongly resisted by many farmers and likely by the public.

In summary, the meeting anticipated that the new regulatory environment would lead to major disruption of current practices in much of Canada, and that short-term adaptation without significant investment could lead to significant problems in calf welfare.

To protect both the sector and the welfare of the animals, the expert panel recommends that a satisfactory period of adjustment be negotiated between regulators and stakeholders regarding the implementation of the new Transport of Animals Regulations that apply to calves.

Meeting Participants

Derrick Canning (Nova Scotia): Dairy Farmer, former Member of the Board, Dairy Farmers of Nova Scotia

Nathalie Côté (Quebec): Quality Management and Environment Advisor, Les Producteurs de bovins du Québec

David Fraser, CM, PhD (chairperson, British Columbia): University of British Columbia, Animal Welfare Program

Terri Giacomazzi (British Columbia): Senior Policy Analyst, Ministry of Agriculture, Government of British Columbia

Craig Jacklin (Alberta): Board member, Livestock Markets Association of Canada.

Kendra Keels (Ontario): Industry Development Director, Veal Farmers of Ontario

Reny Lothrop, DVM (Ontario): Dairy and calf veterinarian, member of the Canadian Association of Bovine Veterinarians

David Renaud, DVM, PhD (Ontario): University of Guelph, Department of Population Medicine

Nicole Sillett (British Columbia): Assistant Director of National On-Farm Programs, Dairy Farmers of Canada

Dave Taylor (British Columbia): Dairy farmer and Member of the Board, Dairy Farmers of Canada and the BC Dairy Association

Henry Van Huigenbos (Alberta): Calf grower

Devon Wilson, DVM (British Columbia): University of British Columbia, Animal Welfare Program

Larry Witzel (Ontario): Member of the Board, Livestock Markets Association of Canada

Rick Wright (Manitoba): Executive Administrator, Livestock Markets Association of Canada

Bob Wynands (Quebec): Veal producer and President, Canadian Veal Association

Dave Zeust (British Columbia): Canadian Food Inspection Agency (Retired)

Unable to attend:

Ed Friesen (Manitoba), Dairy farmer, Member of the Board, Dairy Farmers of Canada

Marie-Eve Paradis, DVM (Quebec): Scientific Advisor, Association des Médecins Vétérinaires Praticiens du Québec

Meeting Observer:

Caroline Ramsay: Code Manager, National Farm Animal Care Council