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Attitudes of Canadian Pig Producers Toward Animal Welfare

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KEYWORDS

animal welfare, Canada, attitudes, pigs, qualitative research, values

ABSTRACT

As part of a larger study eliciting Canadian producer and non-producer views about animal welfare, open-ended, semi-structured interviews were used to explore opinions about animal welfare of 20 Canadian pig producers, most of whom were involved in confinement-based systems. With the exception of the one organic producer, who emphasized the importance of a “natural” life, participants attached overriding importance to biological health and functioning. They saw their efforts as providing pigs with dry, thermally regulated, indoor environments where animals received abundant feed, careful monitoring and where prospective disease outbreaks could be minimized and controlled. Emphasis was also placed on low-stress handling and agreeable working conditions which were believed to promote good animal care. The fact that pigs tend to respond to such conditions with steady growth reinforced the belief that good welfare was provided. Participants supported the use of sow gestation stalls, but with some reservations, and expressed concern about welfare problems that could occur if sows were grouped. Invasive procedures (castration, tail-docking, teeth clipping) were recognized as painful but were accepted because they were seen as: (1) necessary for sales or management; (2) satisfactory trade-offs to prevent worse welfare problems such as injury or infection; or (3) sufficiently short-term to be relatively unimportant. Participants were adamantly opposed to animal neglect and some welcomed actions of animal protectionists that expose poor care. Producers also welcomed natural-science-based approaches to improving animal welfare. The findings contribute to a broader effort to identify overlapping values among different stakeholder groups as a basis for formulating mutually agreeable, farm animal care and handling policies.

Introduction

Animal producers' views about farm animal welfare tend to receive less attention than the views of citizens and consumers (Kauppinen et al. 2010; Driessen 2012). Despite some notable efforts to reflect producer perspectives (e.g., te Velde et al. 2002; Vanhonacker et al. 2008)—plus a variety of more tangential “willingness to change” studies regarding producer preferences about traceability systems

(Schulz and Tonsor 2010), marketing contracts (Roe et al. 2004) and other programs (Norwood et al. 2006)—animal welfare policy responses have largely reflected the concerns of the non-producing public. Regulations on housing pregnant sows in the USA, for example, have largely reflected the views of voters (Centner 2010), not those of pig producers. Given that pig producers may have quite different concerns about proper care (e.g., Tuytens et al. 2010) they may not see such changes as necessarily good or even suitable for animal welfare.

In order to help remedy this imbalance, we have undertaken a comparative multisector study of how Canadian animal producers and non-producers view animal welfare and the animal welfare concerns that they hold. Our first study focused on western Canadian beef producers who use an extensive production system with animals raised on pasture for most of their lives, followed by a few months in outdoor feedlots (Spooner et al. 2012). In this paper, we present the contrasting case of Canadian pig production which is mostly based on confinement systems, following a transition from extensive mixed hog farming which characterized the Canadian pig sector through the early 1950s (Novek 2005; Statistics Canada 2011).

It was our intent to discover how people who are experienced in raising animals under these circumstances view animal welfare and how their views might differ from both non-producers and beef producers operating within the same geographic region. As in Spooner et al. (2012) we hoped to give voice to the producers by providing a detailed picture of their beliefs, values, and attitudes regarding suitable lives for animals so as to inform the public debate and to provide constructive input into animal welfare policy. It was anticipated that detailed Canadian stakeholder views about animal welfare—which have not been previously represented in the literature—would be nuanced and complex. Hence, this study—as with all others in the series—used a qualitative format with a relatively small number of participants. Methodologically, the research most closely resembles what Sandelowski (2000, p. 334) describes as “qualitative descriptive”; specifically, “an eclectic but reasonable combination of sampling, and data collection, analysis and re-presentation techniques”.

Methods

Interviews were conducted in 2009–2010 with 20 individuals directly associated with the production of pigs in Canada’s 5 most western provinces: British Columbia (3), Alberta (9), Saskatchewan (5), Manitoba (2), and Ontario (1). Seventeen were directly involved with confinement operations where animals were kept entirely indoors. Three producers—managing the three smallest operations—ran “extensive” systems with pigs outdoors for at least a part of their lives. Two of these (one certified organic) kept animals entirely outdoors, while the third kept groups of pregnant sows outdoors until farrowing. Eleven were involved in owner-operated, independent farms (sole proprietorships, family-operated or communal partnerships). Five were associated with pig production companies, either employed as management staff or producing pigs in their own facilities under an exclusive contract to one company. Three were co-owners of pig production companies and one of these was a former chief executive officer.

In Canada, many pig producers specialize in selected stages of production: “farrow-to-finish” (birth to slaughter), “farrow-to-wean” (birth to weaning), “grower-finisher” (weaning to slaughter) or a combination (King 2006). Provinces differ somewhat in their emphasis; for example, Manitoba has many farrow-to-wean farms, whereas farrow-to-finish operations are more common in Saskatchewan. Seventeen of our 20 participants were involved mainly with farrow-to-finish operations managing the entire life-cycle of pigs from birth to slaughter. Three of those 17 also produced breeding animals for sale to other producers, and four of the 17 also sold weaned animals to grower-finisher operators. Of the remaining three participants, one operated a grower-finisher operation, one managed a farrow-to-weaning operation, and one oversaw a consolidation operation. Given, in part, that participants were recruited through a sampling strategy that relied heavily on “key informants” (Hammersley and Atkinson 2007) knowledgeable about and well

recognized within the sector, participants reflected a diverse but non-representative sample of specialized producers. Specifically, the sample was over-represented with farrow-to-finish participants. Beneficially, perhaps, this allowed for more interviews with participants experienced in all stages of production. The number of animals associated with each operation ranged from 7 to 625 sows (mean of 265) for independent producers and between 350 and 50,000 sows (mean of 11,088, plus one unknown) for pig production companies. Of the 20 participants, 16 were working full time in pig production, one was semi-retired, one was entering into unemployment owing to a company closure, and two had moved from active production into other employment in the swine industry. Fifteen participants were at least second-generation producers.

Interviews

Initial interviews, which lasted 1–2 h, were conducted face-to-face (10) or by telephone (10). All initial interviews were conducted by two interviewers, with one interviewer leading and a second contributing supplemental probes and follow-up questions. All interviews were tape-recorded and transcribed (verbatim). Notes were taken during the interviews and reviewed in detail afterwards by both interviewers for evidence of emergent, preliminary themes. Immediately before each interview, participants were given a verbal summary of the study and its goals, and were asked to review and sign a consent form, approved by the University of British Columbia Research Ethics Board, stressing confidentiality and the right to withdraw from the study at their discretion, although none withdrew.

During interviews, participants were invited to respond to an open-ended, semi-structured schedule of questions that had been pilot-tested by three student volunteers involved in farm animal welfare and production. Initial questions covered demographic details, current farm animal operations, personal farming/production histories, and whether participants ate meat (all did). All subsequent questions sought the meaning of animal welfare in various ways. Respondents were encouraged to relate what “farm animal welfare” meant to them including any views on animal welfare beyond those specifically involving pig production. Participants were also invited to offer their views on (1) their understanding of “contented” or “happy” animals (a frequently stated goal of animal producers—see Spooner et al. 2012), (2) the emotional capabilities of their animals and the extent to which they or their industry typically sought to accommodate animal emotions, (3) any welfare-related concerns that they held or believed that the public might hold regarding pig production, (4) whether they had ever encountered questions or concerns from the public regarding pig welfare and, if so, how they responded, (5) the general nature of the relationship between producers and their animals, and (6) any animal welfare-related changes they may have introduced into their operations over their careers. Some were also asked if they would continue producing in the event of a major financial windfall, and if so, about any changes they might make in their operation, especially with regard to animal welfare. Most respondents answered all questions, usually in the same order. In some cases, participants were accompanied by life partners and/or business colleagues who offered contributory comments that were transcribed and treated as participants’ views.

Participants were invited to volunteer any additional comments relevant to animal welfare, and all were encouraged to contact the researchers to add any supplementary comments afterwards if desired, although no follow-ups were received. Participants were asked for permission for follow-up contacts, and all agreed. Participants were invited to receive copies of reports arising from the interview(s) and all accepted.

Follow-up interviews were conducted with a purposive sample of seven of the original participants to gain a more detailed understanding of producer views on three common invasive procedures: castration, tail-docking and teeth-clipping. All participants invited to re-participate agreed. Follow-up interviews were conducted by telephone in 2011 by one interviewer and lasted 30–60 min.

None of the interviews involved viewing of pigs because of concern over biosecurity and sensitivity to any producer concerns about animal-welfare-related research. However, producers sometimes showed photos of their animals and facilities.

Transcriptions were reviewed many times in conjunction with preliminary memos and field notes. Analysis was conducted using a “constant comparison” method (e.g., Glaser and Strauss 1967); i.e., participant comments were divided into segments and classified or “coded” before being compared and grouped with similar or related comments from other participants. This process continued until emergent patterns appeared within the data that were subsequently identified as themes and outlined below. Major themes reflected saturated responses. Analysis was assisted through the use of NVivo software.

After the analysis of the interviews, two additional methods were used to help validate or “triangulate” producer views of animal welfare. These were: (1) scanning numerous internet sites featuring producer on-line discussions about animal care and handling (i.e., seeking definitions of “animal welfare”); and (2) an informal review of two prominent Canadian pig producer magazines, namely *Western Hog Journal* (Fall 2001–Winter 2011) and *Better Pork* (February 2006–October 2012), again seeking discussions about “animal welfare”. None of these sources deviated in any notable ways from the findings of the interviews.

Results

Meaning of “Animal Welfare”

When participants were asked to describe what the term “farm animal welfare” meant to them, most indicated that they did not use the phrase. In fact, many associated the term with criticisms of production practices raised by those outside the industry:

242: Well, unfortunately to me, it’s sometimes used in a bit of a ... confrontational sense, in that it’s saying to us, as producers, that we are not looking after our animals.

Others regarded the term as indicative of a failure by non-producers to understand the integral relationship between adequate animal care and operational viability:

198: Well, the terminology certainly is one that brings to me the city versus others’ perception, because ... if you’re going to be able to be a reasonable livestock producer ... you have to have empathy for the animals and how they’re acting and how they’re growing and what their state of health is I wouldn’t call that welfare. That’s just kind of part of the business.

Definition of Animal Welfare

Participants were more inclined to use alternative terms such as “contentment”, “comfort”, “care” and “husbandry”. A few producers also referred to “happy” animals when describing the desired condition that they sought for their pigs; specifically, an animal that conveyed a discernible level of alertness and a healthy appearance:

242: Happy constitutes an animal that is perky, that has the right color, that the hair isn’t a little long and non-shiny.

Participants also appeared quite confident that their experience equipped them to assess animal welfare and/or distress:

242: You know, once you get to work with animals, you can see immediately that those eyes are bright and they're happy in their environment.

188: If you walk into your barn and ... if you're a herds person at all, you can tell if they're in discomfort—if they're uncomfortable or not.

In addition, participants clearly associated good animal care with biological health resulting in steady growth. Animals that were well cared for correspondingly “performed” best:

196: Animal welfare and productivity go hand in hand. So, good animal welfare leads to good animal practices—good animal husbandry—and leads to good productivity ... If an animal is happy ... it expresses it in its growth rate.

Requisites for Good Animal Welfare

Good animal care, according to most non-organic participants, included the following elements:

Proper Environment

Participants considered that rearing animals indoors enabled producers to provide appropriate climatic conditions which were almost unanimously regarded as superior to more “natural” conditions. Animals raised indoors were able to access dry areas, avoid insects and avoid overheating in summer through the use of sprinkler and ventilation systems, while remaining warm and sheltered during long, cold Canadian winters. Producers were also able to achieve suitable population densities:

242: You do want them to have enough space...an over-crowded facility is not ideal and usually leads...to problems of being too dirty as well...[but]...you need a balance of not too much space, because... pigs don't seem to like that.

Maintaining good environmental conditions was seen as beneficial for both workers and animals:

314: You want to have a good environment, for people and pigs...[A] big goal for us is to keep the air as fresh as possible.... It is very bright, it's painted, it's white inside, it's all fluorescent lighting, very very bright barns right? It makes the people feel better and I think it makes the animals feel better.

Proper Genetics

A few producers described efforts to select animals that were genetically or dispositionally suited to intensive operations—especially animals that were not excessively aggressive toward workers or other pigs:

300: [Genetically] ... feet and legs were important, but the personality of the sow was also really important ... We found that those [non-aggressive] sows were different. They were socially quieter and they were more ... interactive with people, in a more positive way.

Good Care and Handling

Many emphasized the importance of patient, low-stress handling of animals which was seen as leading to good rates of growth:

226: In my own operations ... you can walk in ... and the animals are always relaxed and walk quietly, and you know that even when you're not there, people are not poking and prodding them.

While most alluded to stipulated handling procedures that entailed little or no use of electrical prods, proper handling was also facilitated by hiring caring workers and insisting on proper handling techniques—which included removing workers who failed to comply. Participants also emphasized the need to respect sensitivities of animal staff for the mutual benefit of people and pigs:

314: If there's a concern with one employee—that someone's not treating an animal right—we come into this room and we talk about it. ... With a farm this big you have to be sensitive to those things.

Concern for staff sensitivities also extended to sparing workers from having to perform certain practices:

300: On-farm euthanasia ... can ... really have an effect on staff. ... There's some real depression issues that you can face...because they just can't handle that job. So we sometimes have our managers ... take over that responsibility ... for both the good of the pig and the person doing it.

Animal Welfare Versus Access to Natural Environments

Most participants did not equate good lives for pigs with outdoor or “natural” environments. Rather, they saw outdoor rearing as posing challenges to animal welfare including the risk of acquiring diseases and the ensuing suffering, the use of poor food sources, plus other natural adversities:

242: If you run your sows outside ... on a pasture ... [then come farrowing time] ... if it isn't raining ... you've got a beautiful litter of pigs. If it's ... raining, you come out to a litter of dead pigs.

314: If there's a problem we...treat that animal as quickly as possible to get her back to health...If they're out[doors], there's coyotes, there's ditches, there's whatever. They can get injured, and here [indoors] ... they're protected.

Some producers drew direct parallels between indoor facilities and hospitals and human health care:

314: We run it like a hospital as much as possible, right? ... Our main employees—we have 14 people working here—we have to trust that they're doing this as well. If they ... had to visit another farm, we ask them to stay away from our farm for 2 days because there's a risk of bringing in something we don't have. It's like people in hospitals right?

The two extensive, non-organic participants maintained that outdoor rearing entailed welfare benefits, but both acknowledged tradeoffs related to weather and nutrition. Hence, neither was opposed to indoor rearing on the basis of animal wellbeing per se. In fact, one extensive producer appeared to share the belief that indoor housing is better for the animals:

178: I was reading an article ... saying how nice these modern barns are ... and, you know ... he's got a point ... We've lost animals in minus-forty weather ... [so] ... how am I supposed to say the pig likes that better than in the barn on concrete?... At least the temperature was warm and he was dry the whole time.

The one organic participant, on the other hand, advocated a more small-scale, natural approach to pig production:

162: An animal was ... meant to be on the ground, in the grass. ... We think a pig should be a pig. They should be out rooting in the sun and the dirt and so on. ... That's where they prefer to live.

Views on Accommodating Natural Behavior

While confinement producers clearly favored rearing animals indoors, there were differing opinions about the importance of accommodating natural behaviors or providing animals with novel objects to improve the quality of indoor living. While one producer forcefully disagreed with the need to enrich indoor environments in order to reduce tail-biting, another maintained that:

312: Pigs are pretty intelligent ... We ... try to give them a little bit something different each day or something to look forward to ... We have chains, we have social holes in our pen walls so that they can stick their noses in and they can visit back and forth between pens.

Ultimately, though, efforts to provide more natural conditions were widely seen as involving trade-offs:

314: Honestly, probably, you could do it different. Let them wander in a big pasture, you know? Is that gonna make them a lot happier? Probably yes ... but ... it would cost too much, right? ... [And] ... there would be a lot of problems that went with it.

Views on “Family Farms”

Intensive producers frequently challenged the common belief that traditional family farming leads to good animal welfare, insisting, rather, that corporate farms attend more consistently to animal care and environmental issues. In particular, participants cited lower piglet survival rates on family farms resulting from crushing by sows and other accidental deaths. Participants also opposed the view that any large farm is a “factory” and any small farm promotes high welfare:

300: I've seen some real wrecks and they've usually been in the smaller, family operations ... [because] ... most of the time larger farms are better trained and more responsible and more diligent.

Views on Housing Systems

Gestation Stalls

Most participants regarded the use of sow gestation stalls or “crates” as consistent with good animal care, frequently citing their ability to curtail routine aggression plus domination by “boss” sows. Participants also noted that the simplicity of a stall system allows it to be operated successfully by less experienced staff:

308: To be honest ... I find the more stalls the better as far as how each individual pig can be taken care of. ... I generally like the fact that you have your own space, and basically ... they seem perfectly content to me.

Still, some expressed ambivalent views about the use of stalls:

188: I keep my pigs in a cage—in a stall. I would never have a bird in the house in a cage. ... You put a budgie in a cage and it's got all the food and water it wants ... but it's not made to be in a cage. In the same context, a pig ain't made to stand in a stall all day and yet they do. And would they be happier outside freezing their ears off?

322: I do struggle with sow stalls. I'll admit it I do. ... If we are truthful and we work with animals for the right reasons, we should always be challenging ourselves along the line of: are we really right in doing what we're doing? And I often don't have a full conversation with myself on that because I feel that I could talk myself out of a job.

Group/Loose Housing

Group housing was regarded by some participants as providing a potentially better option for sows, partly because it was seen as the best way of reducing lameness:

302: Well you go to loose housing: like I say, it's better on the animal, it's better on their feet and—it's just better.

Nonetheless, most were critical of group housing in some way. Concerns were largely associated with satisfactory feed intake often in light of experience with earlier, unreliable group-feeding technology. Concerns also included individual monitoring and health care plus control of aggression:

302: It's more work, loose housing. When you go into your records, you find a sow that doesn't eat. You have to go look for that sow, see where she is and why she's not eating. When she's in a stall, you walk past her, you notice right away in her food.

300: We've gone to large groups on straw and we've ... actually had probably more health challenges so, the mortality and the health concerns have been a lot higher and more challenging in the large groups.

Participants were clear, however, that group housing engendered a positive attitude in staff, which, in turn, was presumed to improve animal care and handling:

300: With deep-bedded sows [in groups], there's ... a very high level of satisfaction ... because people see the real social character of the sow ... and that interaction ... really makes people ... want to know more about stockmanship ... [and] ... I would say, stronger technicians, because of ... the compassion they have for the individual animal.

Farrowing

Participants emphasized the welfare merits of farrowing crates including protection of piglets and the ability of producers to conduct routine management practices in timely ways:

242: We used to farrow our pigs in open pens, and I would never want to go back there because of the welfare issues to the babies. I mean, just too many of them get stepped on and laid on and maimed or killed, and so to me a farrowing crate is one of the greatest animal welfare tools there is.

One extensive producer claimed that their outdoor farrowing resulted in late castration of piglets:

178: We physically can't get to our piglets for probably six to eight weeks. So we're castrating at eight to ten weeks ... and so our castration process is probably quite a bit more painful than it needs to be ... just because ... we're farrowing on the pasture.

Views on Invasive Management Practices

Castration

Castration, which was routinely conducted a few days after birth, was regarded as necessary for preventing boar taint in pork, but potentially upsetting for nonproducers:

324: I actually showed the castrations to the class [of visiting students] ... and it's shocking to see if you've never seen it before. But ... I grew up on the farm so that was just part of what's done, and you become accustomed to it.

While admittedly painful, most considered the discomfort from castration to be relatively short-lived as evidenced by the speed with which piglets typically resumed normal behaviors such as nursing:

324: I wouldn't say it doesn't affect them because some of them do sit or need a rest ... or I've even seen them vomiting from it, but ... that's a short-term thing, and then they're up and healthy and healed.

Early castration was seen as minimizing the pain:

328: It's done while they are young so the pain is minimum. ... It causes pain but it is for a short period.

Anesthesia was almost never used for many reasons including expense, effectiveness, additional restraint time and post-surgical grogginess. One producer likened castration to human circumcision which they understood as being typically performed without pain medication. One of two participants who acknowledged having attempted to provide medication reported poor results:

328: I did ... for about a year ... add ... a bit of an ... over-the-counter pain (medication). It gives them quite an anesthetic. It numbs them. It puts them to sleep and it puts them into a kind of docile state [but] ... I was getting death losses because [when the sow laid down] ... they would not get out of the way and then they'd die.

Participants were unanimous in their objection to the possible use of chemical (or "immuno") castration, citing worries about consumer acceptance, handler safety and pig well-being:

308: I wouldn't want to eat an animal that's been given that. ... From what I understand you give two needles, four weeks apart when they are 180 pounds or whatever, and that's way more labor intensive. And of course you don't want to stick yourself either, right?

Tail-docking

Seven producers were asked directly—and all affirmed—that they engaged in tail docking. Participants stressed that tail-docking was done to minimize the adverse effect of tail-biting and were adamant that docking represented a far lesser hardship. As one participant explained:

306: I think if I was a pig I would say, 'Take my tail off' because you leave tails on and the other pigs ... start biting ... and they don't stop ... and will chew right into the rectum. So tail-docking is more for the well-being of the pig.

Producers generally felt that the pain associated with docking was minimal—apt to cause no more reaction in an animal than receiving a needle, or according to one producer, losing a finger—again citing the rapid resumption of normal behavior:

328: You clip their tail...and right away they go and start suckling. If it was a huge pain and a lingering pain then, you know, they would be uncomfortable and they would not go straight into normal behavior.

Teeth-clipping

The once-routine procedure of clipping the “eye” teeth of young piglets (to prevent injuries to other piglets during competition for teats) was rarely practiced by the participants. Instead, participants typically clipped when tooth-related injuries were seen. Still, one participant felt that teeth-clipping should be practiced more frequently to prevent injuries:

264: Things like teeth-clipping—a lot of places have abandoned that, but you see a litter where pigs are hacked all to rat-shit. ... We’re not necessarily looking after welfare by not clipping those teeth.

On a more general level, participants saw some pain as a normal and acceptable part of life:

270: I’m in favor of animal welfare if it means actually providing more comfort and ... less stress and pain for our animals. I do draw the line ... if that means that animals never suffer pain. ... I ... as a human being, suffer pain quite regularly.

306: Unfortunately to a certain extent life is painful, and it’s not only painful for us, it’s painful for the animals as well, and that bothers some people more than it does other people.

Animal Welfare and Economics

Participants’ views about animal welfare were inextricably and unapologetically linked to economics in several ways. First, participants saw good animal welfare as essential for minimizing costs:

316: Everything we do is for a specific purpose for animal welfare, because animal welfare, bottom line, makes us money. If the animals are suffering in any-which-way, it costs us big bucks.

Second, participants saw market forces as requiring farms to be large and practices to be competitive with large-scale production:

316: We get questions about why can’t we get all the pigs running in the back and have them in the field? ... I’d love to raise them like that. I’d love to have just a handful of pigs, but you know what I have to sell a pig for? I wouldn’t make a living.

Consumer demand for low-cost food, however, was seen as ultimately dictating the move to larger farms and cost-efficient production methods:

178: The urban population has, for so long, demanded cheap food ... [It is] that demand for cheap food that has driven the necessity to modernize and become more efficient and get bigger.

Some participants saw animal welfare as an issue to be decided by individual consumers and expressed through market demand:

198: It's an individual choice, right? So, how do you write a law that says this choice is right for everybody? There is no such thing. ... Let's make sure the right information is there, the right categorization, auditable or certifiable, and then let the market determine whether it's right or not.

Moreover, participants were either ambivalent about or opposed to the hypothetical introduction of a government regulated supply-management system (similar to those that regulate Canadian dairy and poultry production). Managers or owners of large scale production companies in particular—speaking in terms of Canada's international pork trade—maintained that national supply-management systems would eventually be outlawed by world trading organizations. It appeared clear that most participants supported the dynamics, challenges and business opportunities associated with free-market competition.

Despite the economic constraints, however, participants expressed satisfaction over their management of their animals:

314: We treat them the best we can for the situation they're in.

Other Areas of Agreement and Disagreement

Pigs Versus Pets

Several participants drew a clear distinction between pigs, as a socially designated food animal, and pets. This distinction was reflected in their professed responsibilities to their animals:

270: The goal is not to have the animal suffer needlessly, but yet, they do provide a function of supplying animal protein to people that pay for that. And, there needs to be the right balance to make it work. You can't apply what happiness is for my pet dog, with what my animals have to do to fulfill their role in this world.

312: They're not pets ... and they're not people! They ... should not have the same human expectation as far as enriching them to their full potential.

Animal Welfare and Organic Production

While the organic participant in this study advocated providing animals with outdoor access, participants with intensive operations claimed that organic and extensive production could not produce enough human food. One producer predicted that organic-only production would lead to starvation. Another (commenting on a friend who raises pigs outdoors) agreed:

188: I guess these animals maybe have a higher quality of life than a confined animal. But, the reality is, he raises a few pigs for himself. ... Therein lies the question: ... Do you produce animals to feed the world?

In contrast, the organic producer considered his type of smaller operation capable of producing safer food:

162: As far as feeding the world, it'd be a lot safer food supply if we had a bunch of small farms like mine producing 100 pigs a year versus one big barn.

Views on Proper Care and the Need for Accountability

Participants frequently expressed resentment or disgust over cases where animals were abused or neglected:

300: Nobody's more embarrassed than a fellow pork producer when somebody abuses animals: where they've starved and where they've been maltreated. ... That's an embarrassment and there's absolute disgust with it, because we're all stock-people—we're all ... caring of animals and that's why we're in this industry.

While some producers called for increased industry accountability, proper care was thought to be safeguarded through the adverse economic effects of poor health:

306: Proper care goes hand in hand with performance. ... Every farmer's different: one person has more feelings, more care. But ... at the end ... the good news is that performance drags when things aren't taken care of properly.

Some participants saw animal advocates and others as potential allies in efforts to establish better self-policing of animal care:

270: There is legitimate questioning and opposition to what it is we do, absolutely. There are bad players ... and if it takes consumer groups to highlight that and embarrass us, so that we are more proactive, so be it.

Another participant saw advocacy groups as providing a "third-party" view:

324: I've been at this for 40 years—you got your head in it all the time, you don't always have that third-party perspective that can shed light on a situation. And if there's a better way to do things, then let's move in that direction.

Still, there were also criticisms expressed about advocacy groups including excessive or arbitrary demands for space allowance and disseminating false information:

328: Looking at a lot of PETA sites ... there is a lot of misinformation out there. ... They were saying ... that they [the producers] rip their teeth out with pliers. That was one of their comments—which is just absolutely false. ... It amounts to spreading basically propaganda.

198: It's pretty easy to jump to conclusions based on your own experience, and if you haven't got any of it, then it's even easier. Because, what you're relying on is public media for your information and there's clearly vested interest groups.

More broadly, producers were critical of members of the public who advocated excessively "natural" rearing systems or supported enforcement policies that were regarded as excessive:

316: As far as I'm concerned ... the general public thinks it's better for the animal to be free of everything. If an animal ... is sick or something, just like a person is, to give it antibiotics to make it better – it's a necessity. What are you going to do—let it die?

Views on Animal Science

Good animal welfare practices were also seen as arising from scientific research. One producer acknowledged that scientific advances had reversed his views on the humaneness of carbon dioxide gas stunning at slaughter plants. Another commented:

242: The Banff Pork Seminar is going to be on this week. I'm here to learn of the newest things, and always we've got animal welfare as one of the topics there. But I try to keep up fairly good

with a lot of the research that's being done and so where possible, you try to implement that into your own operation.

Discussion

Although participants were involved with different types of production, at different levels and on varying scales, our sample was not representative of the industry as a whole. Hence, we have largely refrained from making premature comparisons between the views of different types of producers within our sample. Instead, we have attempted to illustrate the range of views provided by our participants. Nonetheless, some general observations may be offered. First, there were few if any outright disagreements regarding definitions of animal welfare among participants involved in confinement production. Moreover, managers and senior level company officials tended to discuss animal welfare in broader, philosophical or more market-oriented contexts versus individual producers who tended to discuss welfare issues in more immediate or practical terms. Finally, an informal review of some on-line discussions by pig producers (Canadians plus some Americans) plus a review of two prominent Canadian pig producer magazines clearly reinforced our participants' definitions of farm animal welfare. Hence, this finding does appear to reflect a larger population.

More specifically, and as in our previous study of beef cattle producers (Spooner et al. 2012), participants reported not using the term "animal welfare", seeing it rather as a phrase used by critics of production practices. Participants preferred to discuss animal comfort, husbandry or care. Most participants clearly equated satisfactory lives for animals with good biological health and functioning—elements that are almost universally seen as fundamental to animal welfare (Fraser et al. 1997; Dawkins 2004). In this way, participants' views resembled those of many conventional European pig producers (Bock and van Huik 2007; Borgen and Skarstad 2007; Kling-Eveillard et al. 2007; Menghi 2007; van Huik and Bock 2007) and of American author and pork producer Kellogg (2005). In short, most favored providing animals with artificially controlled confinement environments that were properly outfitted, managed and maintained.

Broadly, participants viewed confinement systems as enabling them to protect animals against accidental death or serious illness including the use of farrowing crates to prevent crushing of piglets and gestation stalls to prevent aggression-related loss of embryos. More narrowly, artificial environments—which were seen as providing protection from harsh weather, predation, parasites and nuisance insects—were also seen as minimizing exposure to pathogens that could cause illness and suffering.

Significantly, some producers made direct comparisons to hospitals (where the goal of maintaining health routinely overrides the freedoms or desires of patients) as has Novek (2005). In turn, pigs were looked upon as animals that responded well—in terms of growth and reproduction—to diligent and systematic care within controlled environments. Hence, intensive operations were regarded as achieving this desired result, whereas outdoor production and traditional small farms were seen as less suitable.

With regard to small farms, distinguishing references were made at times to intensive, "professional" operations versus "family farms". Most of these comments were made by managers or owners of large scale production companies. It is presumed that "family farms", in this context, referred to small mixed or hobby farms—and not, for example, to small scale farms which were under contract to larger companies and which presumably operated in accord with stipulated production standards. Given that small scale operators typically did not discuss "family farms", however, it is unknown whether or to what degree they self-identified themselves as representing such.

Apart from the one organic participant, producers did not equate quality care with access to natural environments. Even the two non-organic participants who were engaged in extensive production

presumed that animals could live contented lives indoors. Thus, most participants exemplified what Fraser (2008a, p. 54) has described as an “industrial” world-view in which nature is regarded not as an ideal state but as “an imperfect state to be controlled and improved” (Novek 2005). According to Woods (2012), such views reflect a tradition evident in the history of intensive pig production which has sought to enhance animal flourishing through the eradication of adversities that reduce growth.

Nonetheless, some participants acknowledged deficiencies in indoor environments. Some producers were ambivalent about whether pigs are frustrated by living indoors and being unable to engage in natural behaviors. Others believed that pigs would prefer living outdoors—at least during favourable weather. Still others made efforts to enrich their indoor environments through the use of straw bedding and play items such as chains.

Good welfare for pigs was also associated with good care and handling by staff and with hiring empathetic workers—a view that is in keeping with the known effect on animal welfare and performance of stockpersons’ attitudes and behavior (Hemsworth et al. 1989). Good care was also associated with minimal use of electric prods to move animals. Furthermore, staff were seen as a valuable resource, and notable efforts were made to provide them with clean, bright, well-ventilated working conditions and to relieve sensitive staff from performing euthanasia. Animals were regarded as benefitting indirectly from such attention to the wellbeing of staff. At the same time, confinement systems were looked upon as being more manageable for relatively unskilled workers.

Farrowing crates were seen as important for animal welfare because the restriction of movement was regarded as more than acceptably offset by greater piglet survival. Alternatively, while most participants expressed support for individual gestation stalls for sows, most acknowledged drawbacks as well. Stalls were seen as allowing individual feeding and monitoring of feed intake, reduced fighting and efficient use of labor, but most participants recognized that stalls prevented natural behavior. Group housing of sows was acknowledged as compensating for some of the shortcomings of stalls while also engendering greater satisfaction among staff who could witness a wider range of animal behavior. This in turn was thought to inspire stockpersons to greater effort in animal care. Nonetheless, participants were concerned that group housing would introduce animal welfare challenges, especially sow aggression, uneven feed intake and difficulty in monitoring individual animals. These concerns may have been influenced in some cases by a lack of personal experience of group housing, and by early Canadian experiences of electronic sow feeding systems that did not function successfully. If so, then the growing familiarity of producers with successful non-stall systems may lead to a gradual increase in acceptance (see Tuytens et al. 2011; van Huik and Bock 2007).

Nonetheless, while most participants felt resigned to the eventual inevitability of group housing, opinions were mixed regarding anticipated outcomes. Given participant concerns, therefore, it would seem reasonable that efforts to facilitate or support a successful transition to group housing would be welcomed by individual producers (e.g., see de Lauwere et al. 2012). At the same time, given the importance that participants attached to first-hand knowledge or experience when assessing animal well-being, increased exposure to pigs in group settings may also eventually allay concerns about group housing.

Like other food-animal producers (Vanhonacker et al. 2008; Phillips et al. 2009; Wells et al. 2011; Spooner et al. 2012), participants generally accepted some invasive management practices as unavoidable. Castration was described as a consumer-driven necessity to avoid boar-tainted meat. Tail-docking, on the other hand, was regarded as preventing greater welfare problems from tail-biting; thus it may have been seen as necessary and the “lesser of two evils” (cf. Wells et al. 2011). In the same vein, one participant supported the once-routine practice of tooth-clipping newborns to prevent painful facial lacerations. Although two producers had made efforts to provide pain control during invasive procedures,

the pain associated with these practices seemed largely accepted, perhaps because of the cost of pain management, or because anesthetics were seen as increasing the risk of piglet crushing, or because pain management was seen as imposing additional piglet stress from handling and injections as claimed by some European producers (cf. Borgen and Skarstad 2007; Tuytens et al. 2012).

Economic considerations and animal care practices were inseparably intertwined for most participants. First, animal welfare—conceived mainly as biological health and functioning—was seen as supporting efficient production. Second, perceived consumer demand for low-priced pork was seen as reinforcing the need for intensive production systems. Third, many saw economic realities as dictating that pigs could not be provided with lives enriched to their maximum potential. Given that this study was undertaken during a period of low incomes for Canadian pig producers, this may have been a reality experienced by many participants in their personal lives. At the same time, there was widespread support for a market-based approach to animal welfare whereby consumers could create demand for specialized production methods. Thus, in contrast to regulatory approaches to animal welfare (e.g., as adopted in Sweden and Norway, see Kjaernes et al. 2009), many participants in this study seemed to favor a free-market approach predicated on consumers informing themselves about production methods and then signaling a demand for preferred methods through the market. However, animal welfare advocates and the public may look upon such market-based approaches as assisting relatively few animals and hence an inadequate approach to improving animal welfare (Webster 2001; Kjaernes et al. 2009).

Some participants favored a strict approach and tougher penalties in cases of animal abuse or failure to provide appropriate care. Some participants even welcomed efforts by animal protectionists to expose unacceptable practices as a means of reducing such behavior. In summary, of the different policy options for animal welfare assurance initiatives outlined by Fraser (2006), the participants appeared to support (1) a regulatory approach in cases of failed animal care, (2) a market-based approach, presumably facilitated by labelling (i.e., indicating specific production practices), so that consumers could create a demand for alternative production systems, and (3) audits or other means of ensuring adherence to standards upheld by producers themselves.

At times the views and values presented by producers appeared to defend their own production systems or to be influenced by the systems with which they were familiar. For example, those working with group-housed pigs expressed satisfaction at being able to see animals engaged in natural behavior. Further study is needed to explore how much producer views on farm animal welfare reflect (1) personal views versus widely held views in their sector, (2) the effects of working with specific production systems, and (3) economic or other business priorities. The qualitative results from this study could also provide a basis for survey studies to obtain a more quantitative measure of views through probabilistic sampling methods.

The views of participants suggest several actions that the pig production sector could consider. One is to support and participate in animal protection enforcement to deal with negligent producers. More generally, and rather than relying upon animal protectionists to publically embarrass the industry at times, producers might formally cooperate with animal protection authorities as part of a collective shift towards a more professional occupational model, involving self-regulation based on accepted standards (Hurnik 1988; Fraser 2008b). A third effort would be to create public dialogue and consensus-seeking involving a science-based approach to animal welfare practices and standards, as supported by participants in our study and broadly by the general public (Lusk and Norwood 2008).

Conclusion

Research on conflict resolution has shown that “deeper understanding by the parties of their own and each other’s perspectives, priorities, and concerns enables them to work through their conflict together”

(Friedman and Himmelstein 2006, p. 524). Unfortunately, public debates about the care and handling of food animals often fail to involve actual producers who play a vital role in animal welfare. Giving voice to the beliefs and concerns of producers, as we have attempted to do in this and other studies of stakeholder parties, could help strengthen animal welfare policy by identifying topics that are apt to engage producers, areas of broad social consensus, and areas of disagreement that need to be resolved. Moreover, as noted by Picard and Melchin (2007, p. 40), “developing insight about our values and interests can change how we experience conflict, which can shift the conflict situation from impasse to an attitude of openness to the concerns of the other party and to the possibility of resolution.” In-as-much as our studies help to engender self-awareness among stakeholders, our efforts may also facilitate dialogue and collaboration as an alternative to what Driessen (2012, p. 165) has called the “adversarial and entrenched oppositions” that have tended to dominate public discussion of farm animal welfare.

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