Results of a national survey of US veterinary college faculty regarding attitudes toward farm animal welfare

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Objective—To examine attitudes toward farm animal welfare among veterinary college faculty.

Study Population—157 US veterinary college faculty with large animal or food animal emphasis.

Procedure—Veterinarians from 27 US veterinary colleges were contacted via e-mail and asked to complete a 7-page survey relating to farm animal welfare issues. Thirty-one percent of those contacted responded.

Results—71% of respondents self-characterized their attitude toward farm animal welfare as "we can use animals for the greater human good but have an obligation to provide for the majority of the animals' physiologic and behavioral needs." An additional 19% of respondents were more concerned about animal welfare than was indicated by that statement, and 10% were less concerned about farm animal welfare than was indicated by that statement. Significant relationships among demographic variables and attitude scores were observed, including more concerned attitudes among females, those with more liberal political views, and those who cited lower religiosity. No relationship between attitude and age was observed.

Conclusions and Clinical Relevance—Veterinary college faculty have the opportunity to impact many stakeholders within the animal agriculture industries (eg, future veterinarians and policy makers looking for a veterinary science perspective). Results indicated that a considerable level of concern toward farm animal welfare is present in this population. Although the process of change may not be rapid, it is likely that the influence of these respondents will factor heavily into enhancing farm animal welfare. (J Am Vet Med Assoc 2005;226:1538–1546)

Animal welfare scientists have spent the past several decades producing a rich base of research information related to behavioral and physiologic indicators of animal welfare. In many instances, common housing practices or husbandry methods negatively impact animal welfare, as judged on the basis of multiple measures (eg, pig castration without anesthetic, dehorning without anesthetic, and confinement housing for sows). However, long intervals may pass between the time when results of research are published and pertinent change is implemented at an industry level.

There are several possible reasons for the delay or failure to implement changes based on findings from pertinent welfare science research, some of which were explored by Dawkins. The reasons for delays may be multifactorial, but the main reasons are likely to include the following: welfare scientists have not adequately informed agriculture stakeholders about their findings, there is a perception that consumers will not support the cost of welfare-enhancing changes, and influential stakeholders have not been optimally receptive to the welfare science literature. To better understand attitudes toward farm animal welfare, we surveyed 2 groups with the most influence on US animal production decisions: veterinary college faculty and animal science faculty. Veterinary college faculty are involved with teaching veterinary students about issues related to animal welfare, disseminating information to producers, serving as consultants to legislative and policy-making groups, and serving on grant agencies that select proposals for funding; therefore, understanding their attitudes toward farm animal welfare is fundamentally important.

We expect that the attitudes of those who influence farm animal production decisions are important to the implementation of animal welfare science research findings. Veterinarians, via the collective voice of the AVMA, play an important role in developing an animal welfare position statement and are one of the most influential groups affecting animal treatment issues in the United States. According to 2002 AVMA statistics, more than 15,000 US veterinarians play some role in treating large animals or farm animals in the United States. Further evidence of the potential impact of veterinarians in the United States is provided by results of a 1998 public opinion survey conducted by the Animal Industry Foundation, which revealed that 94% of consumers place the most trust for farm animal well-being with farm animal veterinarians. United States veterinary college faculty instruct more than 4,000 incoming veterinary students each year. Many of these students will ultimately graduate and, as practicing veterinarians, play an important role in disseminating research findings to producers. Few would argue with the potential impact veterinarians have in shaping views toward the treatment of farm animals.

Eagly and Chaiken define attitude as a psychological tendency that is expressed by evaluating a
particular entity with some degree of favor or disfavor. Despite a wealth of literature on attitudes and their measurement, relatively few studies have been published that specifically investigated attitudes toward farm animal welfare. Although a number of studies have examined attitudes toward general issues of animal use and treatment, comparatively few have looked at attitudes toward farm animal welfare. To the best of the authors’ knowledge, no published articles exist that report the attitudes of US veterinary faculty toward farm animal welfare.

There is much evidence that attitudes influence behavior. Therefore, we believe that understanding faculty attitudes toward farm animal welfare can help in the understanding of their potential behavior with regard to the dissemination of farm animal welfare concerns.

The reason for pursuing this study was a conviction that veterinary faculty substantially influence animal production decisions made in the United States and abroad. The purpose of the study reported here was to examine attitudes toward farm animal welfare among veterinary college faculty.

Materials and Methods

Survey instrument—The survey consisted of 46 items related to farm animal welfare and 13 background questions. A copy of the 7-page survey may be obtained from the authors. Responses for each question were primarily Likert-scale choices (eg, strongly agree, agree, neutral or unsure, disagree, strongly disagree). The first section asked for respondents’ level of agreement with the following statement: the predominant methods that are currently used to produce animal products provide an appropriate level of animal welfare in the (beef, dairy, layer chicken, meat bird, sheep, and swine) industry.

The second section asked respondents to express their level of agreement with those values classically referred to as the 5 freedoms, along with several related values such as freedom from hunger, thirst, unnecessary pain or discomfort, injury and disease (or prompt treatment should they arise), and others.

The third section asked respondents to identify their level of agreement with several belief statements, such as the following: if animals are producing (eg, gaining weight or producing eggs), that means they have good welfare; agricultural animals have individual temperaments; agricultural animals can experience something akin to boredom; and it is important to meet the majority of behavioral needs possessed by agricultural animals.

The fourth section was devised as a reliability check and asked a similar question to that posed in the first section, as follows: for the following industries (beef, dairy, layer chicken, meat bird, sheep, and swine), please identify whether you think no changes, minor changes, or substantial changes to their current production practices or outcomes that represented welfare concerns to them. For the survey reported here, respondents were asked to indicate their level of agreement with those student-identified concerns. The following 15 practices or outcomes were included: branding of beef cattle, dirty conditions on beef feedlots, dehorning without local anesthetic, flooring effects on lameness in intensively farmed animals, poor or indifferent stockmanship, and methods of transportation to slaughter.

The sixth section asked respondents to make a prediction about some of their potential responses or actions, such as the following: animal welfare should be enhanced only if it can be done without increasing costs of production; as a consumer, I would be willing to pay slightly more for products coming from facilities that are enhancing welfare beyond current industry-common levels; acute interventions that cause pain (eg, castration) should be performed under local anesthesia (or general, if an animal’s age suggests that); and as a consumer, I would be willing to pay slightly more for products coming from facilities that provide anesthesia or analgesia when performing potentially painful procedures.

The seventh section asked respondents to prioritize the use of veterinary science of research dollars, time spent teaching, or number of outreach programs for the following contemporary topical areas: animal welfare, environmental issues, food safety, and sustainable agriculture. Respondents were asked to rate these topical areas as high, medium, or low priority, and they were not limited as to how many times they could use each category.

The eighth section asked for a qualitative, open-ended response to the following question: if you feel that changes related to animal welfare are needed, what do you see as the major obstacles to affecting changes in our current production systems?

The item in the ninth section served as another reliability check and asked respondents to rate themselves as follows: please mark next to one of the letters on the scale below where you would categorize yourself in terms of your attitude toward animal use and care. At one end of the scale, the letter A corresponded to the statement: I take a strong animal rights position; that is, I believe that a human, a dog, and a rat all have comparable rights, and each individual’s desires should be respected equally. At the midpoint of the scale, the letter G corresponded to the statement: I believe in using animals for the greater human good (in regards to food production, for providing work, for recreation purposes, etc), but we have an obligation to provide for the majority of their physiologic and behavioral needs. At the opposite end of the scale, the letter D corresponded to the statement: I am not at all concerned about animal welfare issues; animals were put on this earth for us to use in whatever possible way can benefit us the most and in the least expensive way possible.

The following demographic questions were asked: species emphasis area, the state lived in the longest, the importance of having a pet, religiosity, political viewpoint, nature of their appointment (eg, clinical service, extension, research, or teaching), gender, year born, and ethnicity.

Survey implementation—To contact our target population, e-mail addresses were obtained for veterinary college faculty that appeared to have a large animal or farm animal emphasis on the basis of information from 27 national veterinary college Web sites. The survey was approved by the Michigan State University Committee for Research Involving Human Subjects and the Association of American Veterinary Medical Colleges. Recommendations for survey protocol advocated by Dillman were used. An e-mail prenotice was sent in September 2003, informing faculty of the forthcoming survey. Several days later, an e-mail cover letter with an embedded text copy of the survey was sent. Ten days later, a second e-mail cover letter and survey were sent, thanking individuals who had already responded and reminding others to respond. As of early December, the response rate was only 26%, so a fourth contact was made in an attempt to encourage more responses. After the fourth contact, final response rate was 31%. Despite the duration between the third and fourth contacts, results...
Attitude scale score—Because attitudes are most appropriately measured with multiple items rather than a single item,\textsuperscript{26} an overall attitude scale was developed to measure general concern for farm animal welfare. Those items that appeared most valid (having face validity means responses chosen make sense to experts familiar with the area) and for which there was a range of variability in the answers were incorporated into this scale (eg, the item, animals should be free from thirst most of the time, was not included because all respondents either strongly agreed or agreed). The final overall attitude scale score consisted of the sum of the following responses: all 6 items related to comfort level with present production systems; 2 items from the values section (freedom to have normal behavior and room to move around freely); 2 items from the beliefs section (high levels of production mean good welfare is present and it is important to meet farm animals' behavioral needs); all 15 items under the husbandry practices or outcomes section; all 4 items relating to whether, as a potential consumer, respondents would be willing to pay slightly more for products from enhanced-welfare facilities; and the response to how high or low the area of animal welfare should be prioritized in terms of resource allocation. All items included in the overall attitude scale were coded so that higher numbers reflected greater concern for animal welfare; therefore, higher values on the overall scale reflected more concern for animal welfare and lower values reflected less concern.

Missing data were handled in a standard manner used by attitude researchers.\textsuperscript{35} If a respondent answered at least 75% of the questions, missing answers were replaced with that individual's mean response for other questions in that survey section. Those respondents who did not meet this criterion were not included in the data pertaining to calculated overall attitude scores (140/157 [89%] respondents met the criterion).

Qualitative analysis—In an effort to more thoroughly understand participants' responses, a qualitative analysis was performed on the responses to the following subjective question: if you feel that changes related to animal welfare are needed, what do you see as the major obstacles to affecting changes in our current production systems? Of the 157 respondents, 105 (67%) wrote a response to this question. Answers were entered into a software program,\textsuperscript{7} and 15 topic area themes were developed\textsuperscript{10} after compiling and reading the responses.

Statistical analyses—Data were entered into a software program\textsuperscript{2} commonly used for survey analysis and double-checked for accuracy. The program was used for calculating frequencies, means, SDs, and SEMs of responses; correlations, comparisons of means, and \( \chi^2 \) analyses of relationships between variables; attitude scale scores; and factor analysis and reliability results for the attitude scale. In some instances, proportions of respondents were ranked from highest to lowest, then compared by use of Bernoulli comparisons\textsuperscript{2} and pairwise \( \chi^2 \) test statistics. Values of \( P < 0.05 \) were considered significant.

Results

Seven hundred ninety-five e-mail addresses were initially obtained from the directories of 27 US veterinary colleges. An e-mail message asking faculty members to complete the survey was sent to each address. One hundred fifty-seven responses were returned. After correcting for incorrect targets (eg, a survey being sent to a small animal vs a large animal faculty member) and messages returned automatically because of incorrect e-mail addresses, this represented a 31% response rate. Ninety-one percent of the respondents returned their surveys via e-mail; the remaining 9% returned their responses via postal mail.

Demographic variables—There were approximately twice as many male respondents as female respondents. Most of respondents were Caucasian (Table 1). Most of our respondents were engaged in combination...
appointments (ie, some combination of clinical service, research, teaching, or extension). Survey participants were asked to identify their species emphasis area and had the option to list more than 1 emphasis area. One third of respondents identified horses as one of their emphasis areas (of these, approx half listed a food animal species in addition); others identified dairy, beef, swine, small animal (but also listed a large animal species), sheep, and poultry. Other species listed occasionally were llamas, goats, aquaculture species, nonhuman primates, and humans.

Regarding regional diversity, we asked respondents to list the state (or non-US country) where they had spent the greatest portion of their lives. Nearly one third listed a Midwestern state; the next most commonly cited was a New England state, followed by a country other than the United States. In regards to what extent faculty considered themselves religious or spiritual, one third of the respondents chose moderately and less than one fourth chose very, with the remainder choosing somewhat, slightly, or not at all. In terms of political views, nearly half of the respondents identified themselves as primarily or somewhat liberal and nearly one third as primarily or somewhat conservative.

In response to the question, as a child, was having a pet(s) important to you, nearly three fourths of respondents chose very much so, with only 1% choosing not at all. Regarding the importance of having a pet as an adult, more than half chose very much so and only 2% chose not at all.

Current production systems—Participants were asked to respond to the following statement with a Likert-scale response choice: the predominant methods that are currently used to produce animal products provide an appropriate level of animal welfare in the (beef cattle, dairy cattle, layer chicken, meat bird, sheep, and swine) industry. Results indicated that respondents were most confident that animal welfare is appropriate in the sheep and beef industries (70% agreed or strongly agreed), followed closely by the dairy industry (Figure 1). There was a significant ($P = 0.01$) difference between the perceived welfare of these species versus swine in production systems for which 55% agreed or strongly agreed, which was, in turn, significantly ($P = 0.01$) different, compared with the perceived welfare of meat birds and layer birds (33% agreed or strongly agreed).

Values—Respondents were asked to express their level of agreement with the importance of the 5 freedoms and other related values that influence farm animal welfare (Figure 2). Results indicated that respondents agreed most strongly with the following statement: agricultural animals should have freedom from thirst most of the time. Nearly three fourths of respondents strongly agreed with the following statement: agricultural animals should have freedom from unnecessary pain or discomfort. More than half strongly agreed with the following 3 statements: agricultural animals should have freedom from hunger most of the time, ...should have freedom from injury and disease (or prompt treatment should they arise), and ...should have good ventilation and good air quality provided in their environment. The 2 value statements with the lowest levels of agreement were as follows: agricultural animals should have the freedom to express a majority of their normal behavioral repertoire, with approximately one fourth strongly agreeing, and agricultural animals should have room to move around freely, with 23% agreeing. Perceptions of these various value statements did differ significantly in some instances.

Beliefs—When asked to express a level of agreement with certain belief statements, faculty responded as follows: 40% agreed or strongly agreed with the statement, if animals are producing (eg, gaining weight or produc-
ing eggs) that means they have good welfare; 93% agreed or strongly agreed with the statement, agricultural animals have individual temperaments; 63% agreed or strongly agreed with the statement, agricultural animals can experience something akin to boredom; and 50% agreed or strongly agreed with the statement, it is important to meet the majority of behavioral needs possessed by agricultural animals. Behavioral needs were defined as those behaviors that animals have evolved to perform and are highly motivated to engage in.

**Husbandry practices and outcomes**—After combining the percentages of respondents who agreed and strongly agreed, concern regarding husbandry practices and outcomes was ranked in descending order as follows: flooring effects on lameness in intensively farmed animals, poor or indifferent stockmanship, the level of lameness in dairy cattle, and cage space for layers (Figure 3). On the lower end of the range of concern were early weaning in pigs and lack of foraging substrate for pigs.

**Changes in production systems**—Faculty responded to the following item: for the following industry systems, please identify whether you think that no, minor, or substantial welfare-related changes are needed for (beef,
dairy, egg, meat bird, sheep, and swine) production. The layer bird industry was ranked highest for needing substantial changes, whereas the sheep industry was ranked lowest for needing substantial changes (Figure 4).

Predicted behaviors—Respondents were asked to express level of agreement with the following statement: as a consumer, I would be willing to pay slightly more for products coming from facilities that are enhancing welfare beyond current industry-common levels; 22% percent of respondents strongly agreed with that statement and 44% agreed. Respondents were asked to express agreement with the following statement: acute interventions that cause pain (eg, castration) should be performed under local anesthesia (or general, if animal's age suggests that); 21% of respondents strongly agreed and 35% agreed. When asked to express level of agreement with the following statement: as a consumer, I would be willing to pay slightly more for products coming from facilities that provide anesthetic or analgesic when performing potentially painful procedures, 17% of respondents strongly agreed and 35% agreed.

Prioritizing contemporary issues—The percentage of respondents who prioritized 4 topics regarding how they would suggest veterinary colleges allocate resources (eg, funding and time commitment) was determined (Figure 5). Food safety was the highest ranked topic, and environmental issues (eg, manure management) were ranked second. Sustainable agriculture was the third highest ranked issue, and animal welfare ranked fourth.

Visual scale for self-assessment—As another way of assessing the validity of the attitude scores, respondents were asked to self-rate themselves on a visual scale with top and bottom anchors (statements at either end of the scale) that were characterized by attitude descriptions and a midpoint attitude description. Seventy-one percent of respondents agreed with the midpoint of the scale, I believe in using animals for the greater human good…; 1% of respondents agreed with the uppermost anchor point, I take a strong animal rights position…; and 1% identified most closely with the alternate anchor point, I am not at all concerned about animal welfare issues…. Eighteen percent of respondents chose a point between the midpoint and the uppermost anchor, and 9% chose a point between the midpoint and the bottom anchor. A significant ($P = 0.01$) correlation was detected between the 2 measures (self-assessment on visual scale and calculated overall attitude score) and in the correct direction; that is, self-assessments of greater concern toward farm animal welfare were correlated with higher attitude scores obtained by use of multiple item measures.

Overall attitude scale—Factor analysis, a technique for reducing data, revealed that the overall attitude scale was unidimensional (ie, responses tended to cluster around 1 dimension). The Cronbach standardized $\alpha$ statistic equaled 0.86, which indicated a high level of reliability for this attitude scale. One hundred forty-four respondents answered enough questions to permit determination of an attitude scale score (mean $\pm SE$, 90.22 $\pm$ 4.90; range, 42 to 150).

Correlations or comparisons of means were determined between the overall attitude scale scores and background variables that have been linked

Figure 4—Percentages of respondents stating that substantial (solid bars), minor (shaded bars), or no (striped bars) welfare-related changes are needed for various animal industries. Data from respondents who stated they were not familiar enough with that industry to form an opinion were not considered in calculation of the percentages. Values indicated by bars with different superscript letters are significantly ($P \leq 0.05$) different among various animal industries (substantial changes only).
with attitudes toward animal treatment21-27,38-40 or that were
surmised would have an impact. Gender was significantly
(\(P = 0.002\)) related to attitude scores; females (mean
score, 99.74) expressed a greater degree of concern for
animal welfare than did males (mean score, 85.99).

A significant (\(P < 0.001\)) relationship was detected
between political views and attitude scores; scores that
indicated strong support of animal welfare were associ-
ated with liberal views (\(r = –0.336\)). Although the rela-
tionship was modest (\(r = 0.165\)), there was a significant
(\(P = 0.05\)) relationship between religiosity and overall
attitude toward farm animal welfare; higher religiosity
was correlated with lower support for animal welfare
concerns. No significant relationship was detected
between age and attitude score (\(P = 0.35\)). Of the 139
respondents who answered the question on ethnicity,
only 6 were non-Caucasian, so the relationship
between ethnicity and attitude score could not be
examined. Furthermore, a significant relationship was
not detected between appointment (clinical service,
extension, research, teaching, or combination) and
attitude score. However, 57% of respondents had com-
bination appointments, which resulted in small sample
sizes regarding testing for significance among the pri-
mary appointments (clinical service, n = 22; research,
18; teaching, 9; extension-outreach, 6).

A positive relationship was expected between the
ranking of the importance of having a pet and attitude
scores, but because 73% of respondents reported that
having a pet as a child was very important to them and
an additional 20% said that it was somewhat important
to them, there was insufficient variability to test this
relationship (only 2 respondents reported not having a
childhood pet, and only 1 respondent reported that
having a childhood pet was not at all important).

In evaluation of species emphasis area and overall
attitude score, respondents with dairy emphasis had
lower scores (mean, 83.7) than those with nondairy
emphasis (mean, 93.1; \(P = 0.03\)); similarly, respondents
with swine emphasis had lower attitude scores (mean,
79.2) than those with nonswine emphasis (mean, 92.3;
\(P = 0.02\)), and respondents with beef emphasis had
lower attitude scores (mean, 79.4) than those with
nonbeef emphasis (mean, 94.3; \(P = 0.001\)). Higher atti-
tude scores were reported by respondents with small
animal emphasis (mean, 111.5) than those with
non-small animal emphasis (mean, 87.7; \(P < 0.001\)).
No significant differences were detected between
respondents with sheep, horse, or poultry emphases,
compared with respondents without those emphases,
although in some categories, small sample size may
have hindered analysis (sheep, n = 16; poultry, 4).

Although no significant difference was detected in
overall attitude score among regions of the country in
which respondents spent the greatest portion of their
lives, those who had spent most of their lives outside
the United States had significantly (\(P = 0.012\)) higher
attitude scores than did their US counterparts (non-US
mean, 103.5; overall US mean, 88.33; Great Plains
mean, 100.5; New England mean, 96.3; West Coast
mean, 91.7; mid-Atlantic mean, 87.0; Midwest mean,
84.9; Southern mean, 83.6; Southwest mean, 82.3).

Qualitative assessment—One hundred five (67%)
respondents chose to write a response to the following
open-ended question: if you feel that changes related to
animal welfare are needed, what do you see as the
major obstacles to affecting changes in our current pro-
duction systems? Fifteen topic themes were developed
in response to the answers; themes that were cited > 20
times were as follows: economic issues (n = 80), per-
ceived lack of consumer support (33), producer atti-
tudes (29), lack of understanding of what comprises
appropriate animal welfare (27), political issues (22),

Figure 5—Percentages of respondents who rated various issues as high (shaded bars), medium
(striped bars), or low (solid bars) priority regarding allocation of departmental resources. a-cValues indi-
cated by bars with different superscript letters are significantly (\(P = 0.005\)) different regarding respon-
dents who indicated a high priority. Respondents were not limited regarding how many options could
receive a high priority ranking.
Regarding e-mail, a review of e-mail surveys found a also been suggested to the authors that most veteri-
anances of confidentiality. Although less plausible, it has pants cautious about responding despite our assur-
ally and politically charged, making potential partici-
reaching this population, or the topic is too emotion-
parative high stocking densities. Space to move around freely is the exception rather than the rule. Because 55% of respondents agreed or strongly
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towards animal welfare. A minority of this population may express their attitudes in a very vocal way. If resistant attitudes are held by a small percentage of the population, but those persons are involved in making policy, such atti-
uedness, the gender distribution (68% male, 32% female) was similar to that of veterinary college faculty in the United States (70% male, 30% female). At least 2 factors may have played a role in causing the low response rate: e-mail may not be a good mode for reaching this population, or the topic is too emotion-
the AVMA position statement on gestation stall housing in 2002, the appointment of an AVMA Task Force on the Housing of Pregnant Sows in April 2004, and the fact that the 2004 AVMA Animal Welfare forum was focused on the specific topic of sow housing.

Another possibility is that, although most of our respondents had concerned attitudes toward farm ani-
mal welfare, a minority of this population may express their attitudes in a very vocal way. If resistant attitudes are held by a small percentage of the population, but those persons are involved in making policy, such atti-

Results of qualitative analyses indicated that when asked what stands in the way of enhancing farm animal welfare beyond present levels, the most common response was economic factors. The number of times that this response was expressed warrants fur-
ther examination into how much of a role this factor is playing.

One report indicates that, in general, education within veterinary colleges that relates specifically to animal behavior and animal welfare is limited. Our data regarding specific husbandry practices revealed that for 6 of the 15 practices, 20% to 45% of respondents were not familiar enough with a given practice to form an opinion. In our opinion, this lends support to the notion that even veterinary college faculty are not fully aware of modern production practices that may be associated with welfare concerns. Enhanced dissemina-

Veterinary faculty is only one of the important stakeholder groups regarding farm animal welfare. Related survey research should be conducted on US veterinary students and field practitioners. Further studies should evaluate the attitudes of producers and consumers, both of whom play key roles in how farm animals are managed—the former in a direct way, the latter in an indirect yet crucial way.

Discussion

Although there was concern with the low response rate in our study (31%), especially given the likely importance of this topic for the target population, the gender distribution (68% male, 32% female) was similar to that of veterinary college faculty in the United States (70% male, 30% female).

At least 2 factors may have played a role in causing the low response rate: e-mail may not be a good mode for reaching this population, or the topic is too emotion-
ally and politically charged, making potential partici-
pants cautious about responding despite our assurance of confidentiality. Although less plausible, it has also been suggested to the authors that most veterinary faculty are simply not interested in this topic. Regarding e-mail, a review of e-mail surveys found a mean response rate of 37% over 31 studies; in another study, it was reported that survey responses for all modes (eg, telephone, mail, and e-mail) are generally on the decline. With regard to our study, a nearly identical study of US animal science faculty obtained a response rate of 45%. The reasons for the different response rates were unclear.

Results regarding opinions on animal production systems suggested an interesting pattern regarding the order of comfort or concern that respondents have for the various agricultural animal industries. This same pattern was observed in an earlier study of national animal science faculty. The explanation for this pattern that seems most plausible is that public perception of production animal well-being is inversely related to the level of intensification of husbandry practices. Beef and sheep, for example, are still largely kept on pasture or in large uncrowded enclosures, especially at the cow-calf phase of operations. Although dairy cattle are more intensively managed, they tend to be housed in free-stall facilities with the option of open sides on the building. The cows are allowed free movement and interaction with conspecifics. Pigs and fowl, conversely, are typically reared in highly intensive systems with comparatively high stocking densities. Space to move around freely is the exception rather than the rule. Because 55% of respondents agreed or strongly agreed that room to move around freely is an important value for agricultural animals and 64% agreed or strongly agreed that the freedom to express most of an animal’s normal behaviors is important, the level of industry intensification appeared to be the most likely explanation for the patterns observed in the present study. It is also possible that swine and poultry have received more media attention, making respondents more sensitive to these issues.

Overall, respondents indicated considerable concern regarding farm animal welfare, especially regarding global concepts versus specific issues. Therefore, results did not indicate a great deal of resistance toward farm animal welfare concerns, as initially anticipated. However, the fact that < 50% of respondents expressed concern for certain specific practices (eg, gestation crates for sows or gilts) that many welfare scientists would identify as a concern may reflect resistant attitudes toward altering specific practices. It could also be, however, that faculty simply feel more strongly that health care is easier to provide and aggression is easier to manage in individual housing systems, and the predominant production systems are already set up for individual housing of sows and gilts. Evidence of the controversy surrounding this particular issue is indicated by the AVMA position statement on gestation stall housing in 2002, the appointment of an AVMA Task Force on the Housing of Pregnant Sows in April 2004, and the fact that the 2004 AVMA Animal Welfare forum was focused on the specific topic of sow housing.

Another possibility is that, although most of our respondents had concerned attitudes toward farm animal welfare, a minority of this population may express their attitudes in a very vocal way. If resistant attitudes are held by a small percentage of the population, but those persons are involved in making policy, such attitudes may have powerful effects.

Results of qualitative analyses indicated that when asked what stands in the way of enhancing farm animal welfare beyond present levels, the most common response was economic factors. The number of times that this response was expressed warrants further examination into how much of a role this factor is playing.

One report indicates that, in general, education within veterinary colleges that relates specifically to animal behavior and animal welfare is limited. Our data regarding specific husbandry practices revealed that for 6 of the 15 practices, 20% to 45% of respondents were not familiar enough with a given practice to form an opinion. In our opinion, this lends support to the notion that even veterinary college faculty are not fully aware of modern production practices that may be associated with welfare concerns. Enhanced dissemination of welfare science literature by welfare scientists would likely have a favorable impact on farm animal welfare.
References