

Bioethics—Livestock and Poultry: The Ethics of Food Animal Production, Processing, and Marketing

The Ethical Aspects of Regulating Production

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ABSTRACT Polls and surveys conducted within the United States show general agreement that there is public support for the protection of farm livestock and poultry. Concurrent with the growing public sentiment is the recent adoption of socially responsible corporate policies by major food retailers relative to animal welfare. The animal welfare assurance and audit programs developed by the private sector are an attempt to assure consumers that best practice measures and independent oversight result in a reasonable quality of life for food-producing animals. These programs represent voluntary self-regulation and arguably a market-based approach to secure the welfare of food-producing animals. Animal advocacy organizations historically seek regulatory oversight of an-

imal care practice. Legislative routes that require government promulgation and enforcement of animal care regulations represent an involuntary form of animal welfare assurance. There are ethical considerations concerning the employment of voluntary or involuntary regulation of the welfare of food-producing animals. For example, degree of public endangerment, economic impact, viability of small to medium producers, food price, food quality, and food security are prominent among the ethical considerations in deliberating whether to impose regulatory mandates on production. In either regulatory approach, the public must be convinced that the welfare of food-producing animals can be secured in a transparent and convincing manner.

Key words: ethics, regulation, animal production

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INTRODUCTION

The regulation of food animal production has become part of mainstream life for European Union livestock and poultry producers (Moynagh, 2000). The transition was not without controversy and economic cost. The freedom that producers once had to produce animals as they saw fit gradually vanished by public command. In contrast, livestock and poultry producers in the United States have been relatively free of mandatory production standards. The primary federal regulation concerning the treatment of food animals is the Humane Methods of Livestock Slaughter Act (7 USC 1901 *et seq.*), which excludes poultry. State anticruelty laws use antiquated concepts of neglect, abuse, and cruelty (Rollin, 1995, 2004), and agricultural animals may or may not be covered by these laws. These laws are ill-equipped to deal with practices and technologies that are used in the name of food production (an honorable endeavor) but collide with socially evolving concepts of acceptable treatment of animals.

Today, there is a plethora of surveys and polls on public attitudes about different aspects of farm animal production. Growth in public interest also explains the moderate success of referendums and ballot initiatives by animal protection groups in specific states (Croney and Millman, 2007). Unfortunately, these legislative activities have left a cheesecloth pattern of state or local laws across the United States. Most actions are focused on banning a particular production practice such as the sow gestation stalls or serving local food delicacies like foie gras. Similarly, market induced pressure on producers by the food retail community has led to an array of self-directed programs and a variety of product claims (Mench, 2003; Thompson et al., 2007). These programs attempt to promote greater public assurance that livestock and poultry producers are raising animals under humane conditions and dampen impetus to regulate production.

What are the ethical considerations for deciding whether to regulate food animal production practice from farm to fork? What obligation do legislators have to commit to objective and fair deliberation to arrive at well-reasoned, supported, and enforceable policy?

REGULATING ANIMAL PRODUCTION

Thompson (1995) explains that the main objective of regulation in a democratic society is to control citizen

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behavior. The severity of the consequence of a behavior may determine whether voluntary or involuntary regulation is used. Involuntary regulation follows official legislative procedures which eventually lead to regulatory enforcement by an appointed government agency—there is no choice to comply; it is a public mandate to comply. For example, The Humane Methods of Slaughter of Livestock Act referred to earlier is part of our US Federal Code and has standards that are enforced by agents of the Food Safety Inspection Service. Voluntary regulation typically occurs when social forces generate pressure for change but have not met the threshold for mandatory regulation. However, the social imperative for change is strong enough to incite self-imposed standards of conduct. Essentially, it is a nongovernment form of regulation.

In recent years a combination of public concern, special interest groups, and market pressure have driven livestock and poultry producers to develop and comply with science-based guidelines/standards formulated to achieve improved levels of animal welfare (Mench, 2003; Croney and Millman, 2007; Thompson et al., 2007). Despite animal protection organizations recent use of market pressure, they have historically used legislative actions as their primary mechanism for promoting change in the status of farm animals (Garner, 1998).

To Regulate or Not Regulate?

Among the most frequent reasons given to regulate livestock and poultry production are 1) to control threats to human, animal, or environmental safety and welfare, 2) to level the playing field of compliance for all producers, 3) to provide public accountability and assurance without a conflict of interest, and 4) to deter practices found to be morally unacceptable to society.

Control of a Threat. Historically livestock and poultry producers have instigated or accepted regulation when a threat to their livelihood can not be controlled through voluntary efforts. Protecting animal health and human health has been a primary driver of extending regulation into the barnyard. For example, the federal ban on the inclusion of mammalian feed ingredients in ruminant feed products to prevent the spread of bovine spongiform encephalopathy (FDA, 1997). However, husbandry practices and general handling of livestock and poultry (outside of slaughter) have largely remained within the domain of self regulation. In some instances the failure of self regulation has led to legal action. For example, inadequate self policing regarding deposition of nonambulatory livestock led to emergency action by former US Secretary of Agriculture Ann Veneman to prevent nonambulatory animals from entering the food supply (USDA, 2003). In fact, several recurring “downed animal” bills had been circulating through Congress for over 10 yr but were written from an animal welfare perspective not food safety. In this case the concern about treatment of nonambulatory livestock progressed from an animal welfare issue (lower in legislative importance) to one of food

safety and required government intervention. Examples like this add impetus to arguments for regulating the care of food animals.

Uniform Application of Compliance. In theory, regulation would level the playing field for all affected producers. The idea is that the cost of compliance would be born by taxpayers, consumers, and retailers in a fair and just distribution. Mandatory regulation presents new public expectations, infrastructure, and administrative tasks for the regulator and the regulated. In a market-based society, it is more likely the producer will assume more of the cost of regulation than the retailer or a consumer for mandates to change production practice (McGlone, 2001; Appleby, 2005). However, there has been indication that the benefits of such legislation may in fact outweigh costs in terms of market response, returns to the producer, and consumer confidence at least in the European Union (Bennett and Blaney, 2003).

Public Accountability and Assurance. The old saying about the fox watching the hen house is problematic for voluntary forms of regulation. Industries that desire to self-regulate have the difficult task of setting up a mechanism that will be perceived as free of conflict of interest by the public. Public servants enforcing compliance are perceived as free of conflict of interest and preferred by animal protection groups (Garner, 1998). A precedent was set when the care of specific laboratory animals, public exhibit animals, and animals sold by dealers underwent regulatory oversight after the public and lawmakers perceived the need to account for and assure humane treatment under those conditions. The Animal Welfare Act (7 USC 2131 *et seq.*) provides regulatory oversight and enforcement of standards developed for species covered by this act. Livestock and poultry produced for the purpose of food and fiber are exempt. A personal observation is that the transformation of the food animal industries since this law was passed has produced a structure of animal use that is generally more similar in its business orientation to the biomedical industries that are regulated under the act.

Deterrence. The banning of certain practices by law coupled with fines or jail sentences for noncompliance is known as deterrence (Parker, 2006). Rather than a full-scale development of legal standards of best practice, the idea is to eliminate the use of specific practices deemed unacceptable. Historically, anticruelty laws have filled this role with respect to human behavior toward animals. As pointed out by Rollin (1995, 2004), anticruelty laws reflect an outdated public approach to securing animal welfare. With the advancement of technology applied to animals in the pursuit of food production, the social dynamic changed from a simple understanding of what is cruel to one that is more complex. According to Rollin, farmers and ranchers do not meet the definition for cruel behavior because they are engaged in a public-supported endeavor. What challenges do legislators face in working through the complex issues of food animal production and the emotionally charged pleas by animal protectionists to regulate and oversee on-the-farm care?

ETHICAL CHALLENGES FOR REGULATING PRODUCTION

Issue Polarization

Livestock and poultry organizations are currently at a loss to find purposeful and constructive dialog with the major US animal protection organizations leading farm animal welfare reform. It is the professional observation of this author that the climate between the 2 factions is at best described as arctic. For the moment, food retailers appear to be the primary conduit through which concerns are aired or change is motivated (Mench, 2003; Croney and Millman, 2007; Thompson et al., 2007).

During the mid 1990s, animal protection organizations temporarily redirected energy from legislative hallways into the chambers of chief executives, corporate boardrooms, and shareholder meetings. Applying pressure to food retail giants became the dominating strategy for the People for the Ethical Treatment of Animals. The change in strategy destabilized the footing of an allied animal industry that was well rehearsed in controlling agricultural legislative agenda (Garner, 1998). The food retail sector held more power potential in their purchase decisions to drive change and in much less time. Compared with the previous 20 yr, there has been a historic level of investment of time and effort in the construction of scientific guidelines, standards, assessment, and public assurance programs to identify and verify best practice (Mench, 2003; Thompson et al., 2007).

In spite of the progress by industry in self improving and assuring farm animal welfare, legislative and ballot strategies have reemerged with a vengeance. Legislators will be pushed to make decisions that can have sweeping impacts on the food system. Sorting through the polemic rhetoric will be difficult, but conscientious legislators can reach fair and just decisions if ethical road maps for legislative behavior are followed.

Regulatory Ethics

A healthy body of literature exists concerning the ethical practice and behavior of legislators. Recent work focuses on corrupt behavior. The intent of this paper is not to provide an exhaustive review of regulatory ethics. However, I will highlight the works of recognized authors to provide a brief overview of legislative ethics.

According to Dennis Thompson, of the Kennedy School of Government at Harvard University (Thompson, 1995), the most frequent mistake made by citizens and some legislators is to confuse personal with legislative ethics. Personal ethics involves managing the interactions of people across an array of social relationships. The purpose is to prevent society from falling into a personal relational chaos. Personal ethic can be derived from a theological, secular, or public mandate to behave well toward others. Legislative ethics, however, "...prescribes principles for action in public institutions" (p. 11). It is the emphasis on institutional conduct that changes the origin and appli-

cation of legislative ethics and distinguishes it from personal ethics. Thus conduct that is accepted in private life may be unacceptable in carrying out the duties of a public office. Thompson provides (p. 12) a simple example—the return of a favor. The reciprocation of a favor is considered a laudable personal ethic, but if practiced by a legislator it is likely in violation of legislative conduct. Although Thompson acknowledges that a fine line exists between personal and legislative ethics, astute legislators who engage in the practice of representative democracy will know the difference. Thus legislators may not be ethically robust in their private life but highly effective under conditions of institutional conduct. In an increasingly pluralistic society, it may be difficult for legislators to be perceived to act fairly on behalf of all citizens. How does this relate to issues of animal production?

Clearly complex differences exist in the ethical positions the public hold concerning farm animal welfare (Buller and Morris, 2003; Croney and Millman, 2007). Many of these differences represent personal attitudes, experiences, or feelings of moral responsibility for the humane treatment of farm animals. It is not unreasonable to expect legislators to possess similar personal ethics toward the treatment of animals. Animal treatment is arguably a highly emotional and personal topic. However, legislators are expected to conduct studied discourse and deliberation (Bessette, 1994) as a prerequisite for making sound public policy. Personal ethics are overruled, and the work toward reaching institutional agreement begins. There is a prescribed protocol and ethic in conducting the business of making public policy. Bessette contends that legislators must filter mass opinion through a deliberative process for effective decision making. However, staying true to an ethical democratic process does not mean that all citizens will be satisfied with the outcome. It does mean that legislators have upheld their public duty.

If legislators fail to create policy according to the prescribed ethical framework then the regulatory outcome may not match the will of the public or creates havoc for the regulated community. What are the consequences of passing well-intentioned but poorly formulated laws?

Gold-Plating. The term gold-plating refers to establishing exceptional or unreasonably high standards (<http://en.wikipedia.org/wiki/Gold-plating>). The term is most often used in the European Union by industry whose country produced regulation that far exceeds the European Council directive, placing them at a perceived disadvantage (Anonymous, 2006). In the quest to assure the welfare of animals, legislators run the risk of creating regulations that are stellar, popular, but largely unachievable or economically fatal to the affected industry. Gold-plating can also serve as a stimulus for cheating. Thus, the intent of the law to assure improved welfare misses its target.

Further Consolidation. Regulatory superstructure can select against small independent enterprise unless exempted, protected, compensated, or they capture a robust niche demand (O'Brien, 2005; Maxey, 2006). Absorbing

the cost of compliance can tax resources small producers may not have. If regulating the production of farm animals becomes a mandate, it will likely be levied across all livestock and poultry operations rather than a select subset of producers.

Unfunded mandates are not unusual for US farmers and ranchers. As regulatory superstructure builds, the costs of production typically rise. Under these conditions, consolidation creeps into the picture. Producers may find contracting with larger firms, selling, or expanding their operation as the only solution to economic survival (O'Brien, 2005). A recent Department of Agriculture Economic Research Service report (2007a) on the consolidation of dairy farms within the United States confirms that large dairies have a lower cost of production than small dairies. Larger dairies generate more capital; thus consolidation is taking place at a rapid pace. Any extra load smaller dairy farmers are asked to carry may hasten rather than protect them from demise. This may be the opposite effect desired by groups advancing reform to farm animal production practice.

Voluntary assurance may also place small producers at a disadvantage. Food retail firms are adopting social policy on production practice at an increasing rate. These policies often play out in supply chain purchases, in some cases directly due to demands by animal protection organizations. If a food retailer requires significant raw material to meet its day-to-day customer demand, then small producers are less likely to become the primary supply source. This begs the question of how voluntary regulation can change farm structure. For example, Chipotle restaurant purports to increase the integrity of food it serves by levying specialized demands on its supply chain (<http://www.chipotle.com>). Recent advertising and web information focuses on the ills of factory farming. Interestingly, Chipotle is a nationwide chain of "fast casual" restaurants that is corporate, has a chief executive and other officers, owns its operations, and employs a labor force that is not blood kin to its chief executive. The daily demand for its food products, based on 2006 financial reports available on the Web site, can be viewed as nothing less than an outstanding success. This produces an interesting dilemma. How do socially conscious but highly entrepreneurial retailers like Chipotle dramatically increase mainstream demand for their product without eventually affecting the size and structure of their supply chain? Wal-Mart size demands may inevitably require a supply chain that mimics the Wal-Mart structure. Can smaller independent producers survive when niche becomes a mainstream consumer demand?

According to Guptill and Wilkins (2002) advocacy groups must devote time to strategic thinking on how to avoid this problem by building special relationships with local rather than mainstream retailers. Small independent or local producers can be changed forever when their food product suddenly finds its way into the appetites of the mainstream or well-intentioned regulations implode their bottom line.

Defiance. When regulations levy uncompensated costs or lack moral imperative, producers are likely to become defiant, mount a resistance, or totally disengage (Parker, 2006). Disengagement can amount to moving production to a less regulated or unregulated environment. Unfortunately, ineffective policy that does not instill a moral imperative to change appears to challenge business loyalty to location. The result is collateral damage to employees, the economy, and under severe circumstances presents a threat to domestic-controlled food quality, which will be discussed in more detail later.

The Deterrence and Compliance Traps. Parker (2006) reviews in detail problems associated with passing laws that lack compliance commitment and enforcement capability. Parker uses 3 well-publicized business conduct cases to illustrate her point. Although none of the cases are specific to animal production, the basic premise is the same. Well-intentioned but ineffective law-making can lead to equally ineffective deterrence and compliance.

Regulations focused on deterring a business practice or behavior must be devised to effectively promote compliance. Parker describes 2 problems that erupt when regulatory intent fails. If the penalty for noncompliance is set too low and offenders are unconvinced to change, they may simply ignore the law and pay the penalty. In effect, the regulation has inspired industry to cheat, and the public will has not been served. The opposite condition occurs when penalties are set too high. Collateral damage caused to parties affiliated or dependent upon the offender can be devastating. Both conditions present a "deterrence trap." Parker (2006) notes:

"Simple deterrence often fails to improve compliance commitment because it does not directly address business perceptions of the morality of the regulated behavior—it merely puts a price on noncompliance..." (p. 592).

The "compliance trap" involves a more complex dynamic but is related to the deterrence problem. One collapses into the other. When industry perceives regulation as an insult, grossly unfair, and stigmatic, it seeks political routes to undermine the law and its enforcement. Laws can be repealed if enough weight can be pulled in the right political direction. Once legislators are convinced a law is ill-conceived, the enforcer becomes a lame duck. Legislators may fear being drummed out of office or enforcers face nonappointment. Worse yet, the regulator goes "soft" on enforcing the law.

Legislators who view animal production issues through the spectacles of simple deterrence do so at their peril. The policy and its enforcement can be politically undermined if industry remains unconvinced of the social imperative for change. Finally, regulation typically carries a cost that will most likely be absorbed by the system. In the case of animal production, collateral damage is born by consumers through an increase in the cost of meat, milk, and eggs.

Food Prices. The cost of food has been an important concern of the US government. United States policy has

historically funded agricultural research, which has led to citizens paying substantially less for food and investment return to various segments of the agriculture public and private sectors (Department of Agriculture Economic Research Service, 2007b). In the last 20 yr, western and US consumers have become active participants in determining the attributes they wish to see in the production and quality of their food supply (Newholm, 2000; Schweikhardt and Browne, 2001; Thompson et al., 2007). In some US states, regulation promoting bans on battery cages, sow gestation crates, and veal stalls have or will become a reality. New consumer demands tend to trigger increased production costs. For example the rising demand for organic food is delivered at a premium price (Department of Agriculture Economic Research Service, 2007b). With respect to animal production, consumers appear to be willing to pay a modest increase in food price to improve animal welfare (Appleby, 2005; Croney and Millman, 2007).

Appleby (2005) contends that even if animal welfare practices were imposed on existing production systems, the rise in price of food could remain relatively small. He argues that food is in fact too cheap and that “free-market competition should no longer be the main determinant of farm practices and food price” (p. E11). Appleby acknowledges that price may shift upward and that changes to production should not be ill-conceived or without economic address.

In fact, increases in food price may have a disproportionate effect upon citizens in low income brackets or living at the poverty level. It may also lead to a subtle form of food bigotry. For example, the taste and cost of a diet may limit food choices for the poor. One study shows higher than recommended intakes of energy-dense foods (which are cheaper) among the poor. This may contribute to greater prevalence of obesity among citizens of low income (Drewnowski and Darmon, 2005). The food for fuel debate is also causing concerns about the rising price of food. Higher fuel prices typically increase the cost of agricultural production. Couple this with a concurrent diversion of base raw material once used for food into fuel tanks (Department of Agriculture Economic Research Service, 2007c). Low-income consumers will be harder hit with food and fuel price increases than middle-class or high-income citizens.

Citizens waging campaigns for regulating specific production practice are often better equipped to pay more for food products produced with these attributes. Legislators have an ethical obligation to consider the food price impact on the disadvantaged and their ability to obtain a healthful diet at a reasonable price.

Food Security. In a discussion paper on animal welfare and societal issues, McGlone (2001) carefully factors farm economics, along with other variables, into his assessment of long-term sustainable farm animal production. Changes in production caused by consumer demand for animal welfare will have an impact on farm profitability. The lack of profitability of US farmers and ranchers leads to concerns of outsourcing food production and im-

porting products from countries where production costs are cheaper. British farm representatives contend that regulatory burden and gold-plating has reduced the number of farmers in the United Kingdom and has undermined the purchase of domestically produced products (Anonymous, 2006). They question the moral legitimacy of raising standards of animal welfare within the country while continuing to import animal-derived farm products from countries with lower standards. Will US consumers and food retailers behave in a similar manner?

A national mail survey conducted and supported by a regional project on rural restructuring (S-276 Multi-State Research Team, 2003) sought to assess US consumer attitudes about global food production. The results provide a snapshot of how US citizens perceive their food resources, food safety, and their concerns for food security post 9/11. Seventy-four percent of the respondents disagreed with the idea that if food could be bought cheaper from another country then the US should purchase it. Only 17% responded in the affirmative, with the remaining 9% undecided. Most interesting, is that the safety of meat products produced outside the United States raised the most concern. When given the choice of eating meat produced from a group of countries (United States, South America, England, and other European countries), 92% of the respondents selected meat produced from the United States with only 5% undecided. Relative to food price, as discussed in the previous section, fully two-thirds of the respondents indicated they would pay more for food grown in the United States.

Although survey respondents held domestic products in high regard, this did not translate into a lack of concern over US farming practices. Fifty-seven percent still worry about food production practice, especially with respect to meat. The survey results would be consistent with the observed growth in consumer preference for different attributes of animal production that has led to a proliferation of product and assurance schemes (Thompson et al., 2007).

RESPONSIVE REGULATION OR RESPONSIBLE ASSURANCE

The production of a safe, high quality and socially responsible food supply is of high importance to the public. When perception, or actual incidents, disrupts that value, then legislators may consider regulating production practice. Ethical legislators will aspire to deliberate how best to meet the will of the public without creating unreasonable hardship. There exists a body of literature reviewed by Parker (2006) that points to “responsive” regulation. Responsive regulation implements a strategy that works with the regulated industry to internalize and institutionalize change. If successful, responsive regulation avoids the deterrence and compliance traps because the moral imperative to change is in industry’s best interest. One feature of this approach is a dedicated avoidance by the legislators to stigmatize the regulated industry. The other distinguishing characteristic is the focus on outcome-

based performance standards. Finally, responsive regulation considers the interests of the public together with those of the regulated industry. Typically, the time scale for implementing change is much longer, and monetary offset is provided to compensate for added cost and to minimize collateral damage.

The alternative approach of voluntary regulation is more attractive to industry but also problematic in execution. As Thompson et al. (2007) and Croney and Millman (2007) point out private industry has responded with layers of assurance programs, marketing claims, and labels that can cause confusion. There is also an ethical obligation to ensure that the private development of production standards meet a “mutually agreed upon and defined level of integrity” (Thompson et al., 2007). Equally important is providing standards applied to the enforcement process. Transparency of process will assure that consumers understand voluntary regulation strategy and assurance outcomes.

Several questions should be entertained when deciding whether regulating production practice is in the best interest of the public and the industry. First, what is the collective harm caused by the industry practice? Is there moral or social endangerment if a practice is not changed? To what degree is the public convinced that regulation is the only answer to resolving the issue? Second, can a voluntary form of self-imposed regulation of practice accomplish a similar or better result as mandatory regulation? In this case the onus is on the self-regulator to clearly demonstrate to legislators that there is commitment, integrity, and transparency of process. Most important, the process must be effective in producing improved and sustained animal welfare. Finally, industry must set in place ethical codes of conduct, produce standards that define how best practice will be developed and enforced, and develop modes of public communication that allow disclosure of industry enforcement outcomes.

CONCLUSIONS

The livestock and poultry industry will continue to experience legislative activity with respect to certain production practices—most frequently state by state rather than at the national level. The imposition of regulation will depend on how legislators approach their ethical commitment to studied and deliberative democratic policy making, and the manner in which they choose to regulate. The industry has voluntarily expended considerable time and resources on developing self-policing efforts such as guidelines, standards, and companion assurance and audit programs to meet retailer and consumer demand. However, a key observation is made by Blandford et al. (2002) in their examination of animal welfare legislation and international trade in the European Union. Assumptions run high that legislation will set standards that actually improve animal well-being. Moreover, they point to evidence that the connections between published scientific indicators of well-being and legislated standards are at best loose. This is because

legislated standards are typically the result of a battle-weary compromise between public perceptions and science. The challenge in the United States is to develop a better model.

REFERENCES

- Anonymous. 2006. Challenges of regulating for animal welfare. *News and Reports. Vet. Rec.* 159:576–577.
- Appleby, M. C. 2005. The relationship between food prices and animal welfare. *J. Anim. Sci.* 83(E. Suppl.):E9–E12.
- Bennett, R. M., and R. J. P. Blaney. 2003. Estimating the benefits of farm animal welfare legislation using the contingent valuation method. *Agric. Econ.* 29:85–98.
- Bessette, J. M. 1994. *The Mild Voice of Reason: Deliberative Democracy and American National Government.* University of Chicago Press, Chicago, IL.
- Blandford, D., J. C. Bureau, L. Fulponi, and S. Henson. 2002. Potential implications of animal welfare concerns and public policies in industrialized countries for international trade. Pages 77–100 in *Global Food Trade and Consumer Demand for Quality.* M. Bohman, J. Caswell, and B. Krissoff, ed. Kluwer Academic/Plenum Publishers, New York, NY.
- Buller, H., and C. Morris. 2003. Farm animal welfare: A new repertoire of nature-society or modernism re-embedded? *Sociol. Ruralis* 43:216–237.
- Croney, C. C., and S. T. Millman. 2007. Board-Invited Review: The ethical and behavioral bases for farm animal welfare legislation. *J. Anim. Sci.* 85:556–565.
- Department of Agriculture Economic Research Service. 2007a. Profits, Costs, and the Changing Structure of Dairy Farming. ERS Report No. (ERR – 47), Department of Agriculture Economic Research Service, Washington, DC.
- Department of Agriculture Economic Research Service. 2007b. Economic returns to public agricultural research. ERS Economic Brief No. (EB – 10), Department of Agriculture Economic Research Service, Washington, DC.
- Department of Agriculture Economic Research Service. 2007c. Food Security Assessment 2006. Outlook Report No. (GFA – 18), Washington, DC.
- Drewnowski, A., and N. Darmon. 2005. Food choices and diet costs: An economic analysis. *J. Nutr.* 135:900–904.
- Food and Drug Administration. 1997. Substances prohibited from use in animal food or feed; animal proteins prohibited in ruminant feed; final rule. 21CFR part 589. *Fed. Regist.* 62:30935–30978.
- Garner, R. 1998. *Political Animals: Animal Protection Politics in Britain and the United States.* MacMillan, New York, NY.
- Guptill, A., and J. L. Wilkins. 2002. Buying into the food system: Trends in food retailing in the US and implications for local foods. *Agric. Human Values* 19:39–51.
- Maxey, L. 2006. Can we sustain sustainable agriculture? Learning from small scale producer-suppliers in Canada and the UK. *Geogr. J.* 172: 230 – 244.
- McGlone, J. J. 2001. Farm animal welfare in the context of society issues: Toward sustainable systems. *Livest. Prod. Sci.* 72:75–81.
- Mench, J. A. 2003. Assessing animal welfare at the farm and group level: A United States perspective. *Anim. Welf.* 12:493–504.
- Moynagh, J. 2000. EU regulation and consumer demand for animal welfare. *Ag Bio Forum* 3:107–114.
- Newholm, T. 2000. Consumer exit, voice, and loyalty: Indicative, legitimation, and regulation role in agricultural and food ethics. *J. Agric. Environ. Ethics* 12:153–164.
- O'Brien, D. 2005. Developments in horizontal consolidation and vertical integration. An Agricultural Law Research Article, The National Agricultural Law Center, University of Arkansas, Little Rock.

- Parker, C. 2006. The "compliance" trap: The moral message in responsive regulatory enforcement. *Law Soc. Rev.* 40:591–622.
- Rollin, B. E. 1995. *Farm Animal Welfare: Social, Bioethical and Research Issues*. Iowa University Press, Ames.
- Rollin, B. E. 2004. Annual meeting keynote address: Animal agriculture and emerging social ethic for animals. *J. Anim. Sci.* 82:955–964.
- S-276 Multi-State Research Team on Rural Restructuring: The Consequences of Globalized Agriculture and Natural Resources Systems. 2003. The globalization of food and how Americans feel about it. *South. Perspect.* 6:1–9.
- Schweikhardt, D. B., and W. P. Browne. 2001. Politics by other means: The emergence of a new politics of food in the United States. *Review Agric. Econ.* 23:302–318.
- Thompson, D. F. 1995. *Ethics in Congress: From Individual to Institutional Corruption*. Brookings Institution Press, Washington, DC.
- Thompson, P., C. Harris, D. Holt, and E. A. Pajor. 2007. Livestock welfare product claim: The emerging social context. *J. Anim. Sci.* 85:2354–2360.
- United States Department of Agriculture. 2003. Veneman announces additional protection measures to guard against BSE. USDA Release No. 0449.03. USDA, Washington, DC.