

Certification and Education Programs: Current Status of Farm Animal Welfare

One in a Series of Educational Programs Presented by the

Future Trends in Animal Agriculture

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Preface

Richard Reynnells
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The Future Trends in Animal Agriculture (FTAA) organizing committee is Co-Coordinated by David Brubaker, Agri-Business Consultant, Michael Appleby, World Society for the Protection of Animals (formerly with the Humane Society of the United States), Kay Johnson, Animal Agriculture Alliance, and Richard Reynnells, United States Department of Agriculture (USDA), Cooperative State Research, Education and Extension Service (CSREES), Plant and Animal Systems (PAS). The FTAA organizing committee is comprised of representatives from several animal welfare and industry organizations, universities, USDA, and others. These individuals represent various views on animal production and work together to bring about positive benefits for animal agriculture and society.

The FTAA has provided a series of educational meetings dealing with current and emerging animal well-being issues and concerns. Animal well-being and production may be associated with: questions of ethics; environmental and food safety issues; consumer demands; regulatory needs; rural infrastructure considerations; public health; and other concerns. These examples are thought by some to be simply directly and negatively related to today's intensive confinement commercial agriculture, while others recognize a greater complexity of these issues. The latter demands more than a simplistic regulatory approach to dealing effectively with these interconnected issues.

The purpose of this symposium is to present the perspectives of persons in advocacy and industry organizations, academia, and government, on animal welfare auditing and certification programs and educational efforts in food animal production. Presentations include discussions on: the costs and benefits of certification programs on food animal production and product distribution; implications of policies discussed at international and national meetings; ethical issues related to animal production; relationship of laboratory animal care relative to food animal production; educational programs by a coalition of government, university and animal advocates, an advocacy group project, and selected university programs; and, an evaluation of animal welfare auditing programs for poultry. Presentations will stimulate audience discussion and help agency policy makers and personnel, activists, industry, and the public have a clearer understanding of animal welfare issues.

The proceedings include speaker contact information, which is provided as Appendix A. The primary audience members are: agency decision makers and other government personnel, representatives from animal advocacy organizations, universities, the agricultural industries, and congressional staffers. The public is welcome to attend all FTAA events.

Regulations and de facto regulations (i.e., follow the "guidelines" or not market your product) impose standards that society can not otherwise ensure everyone follows, or standards they are not willing to encourage be followed by producers through their market demands. Conversely,

society's market preferences currently overwhelmingly demand that cheap food and any additional animal welfare or other added expenses generally should be borne by the entity that in the end must do so (the farmer, given their position as price taker). The crux of most auditing and certification programs is that they ensure the animal welfare demands of purchasers of food animal products (e.g., corporate retail food distribution outlets and restaurants, stimulated by animal activists) which were codified by a panel of animal scientists, animal advocates, and others, are followed by the production and processing components of the animal industries. Not mentioned in the public relations scenarios is the impact of these programs on small and medium size farmers, which will be touched on in this symposium.

Niche markets differ from these purchaser mandated "guidelines" in that the consumer has indeed "put their money where their mouth is", and these true market demands create and maintain observed and measurable market choices. This market demand is met by producers, including some in association with animal welfare organizations, using different types of certification or assurance programs.

Solutions to welfare and rights issues in large part revolve around whether or not to regulate the production of animals used for food or food products...and if so, to what extent. Some in the animal rights community tell the world they are primarily interested in animal welfare and downplay their ultimate goal of the elimination of all animal use (exploitation). Therefore, they would be expected to favor regulations that can be modified over time to suit their goals. Protectionists have the goal of animal welfare and many see regulations as a means to ensure that their visions of welfare are enforced. Many animal producers, who practice good stewardship within the economic and other confines of societal demands, would undoubtedly see regulations as excessive, unnecessary, and perhaps the result of incomplete information being presented to the public and government decision makers.

We should all recognize a personal potential for bias. We also should attempt to set aside egos, closely held philosophies, what peers, television stars or other influence peddlers tell us to think, or is trendy, in favor of the truth. A search for truth may well last a lifetime, but often leads to a balanced and holistic approach to issues because the many factors that influence a situation or system are considered. Such a search also should lead to a respect for other's opinions, with the recognition that one may not have all the answers and that there may be several acceptable or good answers. The latter may be especially true given the constraints imposed by society.

It should be understood there is a low probability that society can have it both ways. That is, it does not seem feasible to expect an extensive confinement system (dispersed, smaller scale animal production) to provide the same advantages to society as intensive confinement animal production. While advantages to some people exist, it is important to recognize there are also many distinct disadvantages of highly competitive intensive confinement facilities (e.g., loss of rural infrastructure, farmer to neighbor conflicts, and the potential for concentrated environmental contamination). Our current system demands for food products include that they be: cheap; consistently safe; convenient; high quality; of uniform appearance; provided in sufficient quantity for single shipments to corporate fast food restaurants or bulk food outlets; and available in sufficient quantity to allow us to continue to use food as an important export. Extensive systems demanded by some may be unrealistically expected to: minimize the severity and health concerns associated with manual labor (labor is also often an availability

issue); have a high level of protection, health and nutrition of the animals; have a capacity for national or international distribution; and ensure a consistently high level of food safety. To one having grown up on, and been a partner in, a diversified extensive farm that evolved into inclusion of intensive confinement of table egg layers, it appears that meeting these multiple and conflicting demands for our entire food supply and for export is unlikely. Niche markets exist to meet these demands for extensive confinement production facilities to the extent there are consistent consumer demands in the marketplace.

Our search for truth also may lead to a recognition that we all contribute to (and have a responsibility for) our current agricultural system through our individual consumer, and auditing or regulatory, demands. The search may also result in the recognition that respect for life, good stewardship and dominion (as defined in the Bible, not the animal rights led interpretation of equating dominion with abuse), will require a balanced and responsible approach to animal husbandry.

This search for an objective approach for making personal and policy decisions, and a greater understanding of the issues are reasons we are here today. We have several experts who have provided exceptional papers. You may wish to use ideas in these presentations to consider the validity of your current beliefs as to how we should interact with animals, and each other, and how best to accept personal responsibility for creating changes in our agricultural system if, in your opinion, change is warranted. These papers provide an opportunity to honestly evaluate current situations of animal management or use, and interactions to improve our understanding of the complexity of our food production system and related supporting infrastructure. With that understanding, we may move toward collaboration (a higher form of cooperation) to improve the well-being of animals, farmers, and the rural infrastructure.

We hope that you find the proceedings enjoyable and educational. Feel free to contact any committee member (Appendix B) for details of future programs. Contact me at 202.401.5352 for additional copies of the proceedings from this or previous years.

FTAA Mission, Vision, Goals

The **Mission** of the FTAA is to foster and enhance balanced and enlightened public dialogue on topics related to the nature and future of animal agriculture.

The **Vision** is: to develop programs that are inclusive and national in scope, with the committee consisting of individuals from organizations representing academia, agribusiness, animal welfare, environment, university, government and others. The FTAA seeks to present timely issues in a balanced, innovative and thoughtful manner. The Committee also seeks to enhance public dialogue and understanding about the nature and future direction of animal agriculture, and the impact of their personal decisions on this process.

FTAA **Goals** are: 1. To facilitate genuine collaboration and the ability of farmers to produce food for society, while improving animal well-being. 2. To provide opportunities for dialogue and understanding of animal well-being, environmental and other issues in an atmosphere of mutual respect of consumers, farmers, advocates, commodity organizations, and others. 3. To provide information to identify critical animal production issues and enhance greater understanding of societal desires and trends that impact production agriculture.

Introductory Comments

Richard Reynnells
National Program Leader
Animal Production Systems
USDA/CSREES/PAS

On behalf of the organizing committee for the Future Trends in Animal Agriculture, I welcome you to the 2005 symposium, "Certification and Education Programs: Current Status of Animal Welfare". We will look at some overall concepts related to animal welfare auditing programs, certification and accreditation programs, ethical issues, and educational efforts by industry, activists and academia. These topics include the current status of these programs, and their impact on the ability of small and medium size farms to compete and on society.

The need for everyone to understand animal welfare issues is clear, but this has been complicated by the numerous animal welfare and rights philosophies. The Future Trends in Animal Agriculture continues in our tradition of attempting to define issues of concern and then develop programs to allow persons to cooperate in discussions of the issues and to define potential alternative solutions to problems. The Mission, Vision and Goals of the Future Trends committee are outlined in the proceedings.

Please remember to fill out your evaluation form. We require your ideas to improve programs in the future. If you want additional copies of the proceedings from this year or from previous years, please call me at 202.401.5352.

Please note we have to adhere to a strict schedule to ensure all speakers have their allotted time. Therefore, please limit your questions to 30 seconds or less. Speakers will likewise stay within their time limitations and provide complete yet concise answers to questions. We appreciate your cooperation.

The organizing committee gratefully acknowledges support from several entities that allowed the symposium to take place. Several activist groups, coordinated by the Food Animal Concerns Trust, provided financial support that allowed us to pay some speaker expenses. The groups are: Animal Welfare Institute, Food Animal Concerns Trust, Humane Farm Animal Care, Humane Society of the United States, and the Leopold Center for Sustainable Agriculture. The Humane Society of the United States also provided the coffee break and room set up fees. We also gratefully acknowledge the contributions of speakers for their significant time and effort. Financial support was provided by the US Department of Agriculture, Animal and Plant Health Inspection Service, with other support coming from the Cooperative State Research, Education and Extension Service, Plant and Animal Systems. All of these inputs facilitated our ability to provide this important opportunity for improved networking and understanding.

Deputy Secretary of Agriculture, Charles Conner, will provide the welcoming comments. Before his current assignment, Mr. Conner held numerous positions of importance, including several key leadership staff positions on the Senate Agriculture, Nutrition and Forestry committee. He

was also a Special Assistant to the President for Agricultural Trade and Food Assistance. Perhaps of greatest significance is his farm background, where he gained first-hand knowledge of the proper treatment of animals and the complex symbiotic interrelationship between animal and crop production, and societal demands. His brother still operates the family farm in Benton County, Indiana. His strong agriculture background resulted in his deep respect for the land, the people who work it, and the animals. He has generously agreed to spend a few moments to welcome you and to share his thoughts on today's topic. Please welcome Deputy Secretary Conner.

Panel: Weighing the Costs and Benefits of Certification Programs

Economic Analyses of Certification Programs

Jim MacDonald, Chief
Agriculture Structure Branch
USDA Economic Research Service

Introduction and Background

In the last decade, we've seen widening interest in the use of government certification and labeling policies applied to food products and agricultural commodities. Examples include mandatory country-of-origin labeling for food products, certification and labeling programs for organic products, nutrition labeling on processed food products, and labeling for non-biotech products. Economic analyses of certification and labeling proposals focus on two elements. First, economic theory is used to identify the conditions under which government intervention in labeling and certification can be justified. The term "justified" implies several ideas, including "will it work?" as well as "will it work better than alternatives?". Second, economic analyses are used to evaluate the likely effects of specific proposals on market outcomes, such as prices, output, and profits, often with a view to assessing the effects of intervention on specific stakeholder groups.

In this paper, I describe those two elements of the application of economics, drawing especially on two recent ERS publications (Golan, et al., 2001; Krissoff et al., 2004). Since those publications and their references give a comprehensive overview of the issues, I'll frame my analysis in terms of a series of key questions drawn from that work.

This symposium is focused on Certification and Education Programs, as they relate to farm animal welfare, and the panel has been assigned the broad task of "weighing the costs and benefits of certification programs". For purposes of discussion, I will presume that there are a set of practices that improve animal welfare, that those practices will increase production costs, and that a farm's use of those practices can be assessed and certified. I will refer to those practices as "humane production practices". The policy questions to be addressed are:

1. Should the government mandate the use of humane production practices, with certification then serving as the regulatory audit?
2. Should the government mandate labeling of animals and animal products, with labels stating whether or not the animals have been produced under certified humane practices?
3. Should the government provide certification services to producers who seek certification?

4. How will the introduction, certification, and labeling of humane practices affect market prices, market output, grower returns, and industry structure?

The sequencing of the above questions illustrates an important principal that informs all of applied microeconomics: that there are usually a lot of different ways to organize an activity, and arguments for government intervention must isolate the reasons why private markets fail to provide the good or service in question. The issue in question (1) implies a relatively heavy-handed and inflexible regulation, requiring the use of certain production practices, that would also require the government to invest in evaluating practices and ensuring compliance. In contrast, the issue in question (2) suggests that the market may fail to provide adequate information for consumers to make informed choices, and the regulation would require firms to provide specified information. Finally, question (3) suggests a more precise and limited type of information failure—that consumers may not trust private providers of information. My purpose in this paper is not to provide specific answers to any of the questions, but to illustrate how economists would go about developing answers.

Where's the Market Failure?

The first step in economic analysis is to identify the nature of the market failure, both as a way to determine if there should be government intervention, and what type of intervention ought to be undertaken. In economics, proposals for certification and labeling start from the three common presumptions: 1) buyers are interested in the product attributes that are to be certified; 2) buyers would respond (alter their purchasing behavior) to accurate information on product attributes; and 3) there is a market failure that prevents buyers from receiving accurate attribute information. By “attributes”, I mean physical and sensory characteristics of the product, such as size, elements of taste, texture, and shelf-life, as well as aspects of how the product was produced. In what follows, I discuss the issues associated with certification and labeling aimed at improving the information that consumers receive.

Buyer Behavior and Product Attributes

What factors limit buyers' ability to obtain useful and accurate attribute information? After all, firms already provide considerable amounts of information about many attributes of their products through advertising and their own labeling. We start with elements of the attributes themselves. Economists typically distinguish among search attributes, experience attributes, and credence. *Search* attributes are things that one can determine prior to purchase—things like size, color, and price. Because buyers can obtain accurate information prior to purchase, sellers have little reason to lie about search attributes, and buyer preferences should be quickly transmitted to sellers through marketplace decisions. With regard to *experience* attributes, buyers cannot determine these attributes prior to purchase, but can determine them accurately through experience with the product. Experience attributes include factors like flavor, mouth texture (for food products), consistency, and durability. For low-priced consumer products, like most food products, consumers can obtain accurate information about experience attributes at low cost through consumption. Again, buyer preferences among experience attributes should be transmitted quickly to sellers, through repeat purchase behavior, and buyers should be able to identify misleading advertising.

Credence attributes cannot be ascertained through prior inspection of the product, or through experience with the product. The classic example of a credence service is automobile repair—most buyers cannot evaluate the quality of work provided, and they often cannot evaluate whether service was even needed. In the food sector, many types of product ingredients are credence attributes—that is, buyers cannot determine the presence or absence of specific ingredients through experience or pre-purchase evaluation. Similarly, production practices are credence attributes; the buyer cannot determine, through inspection or experience, whether the seller took the steps necessary to ensure limit pathogen contamination, and in the case of interest here, buyers can't determine, through inspection or experience, whether producers used production or processing methods designed to enhance animal welfare.

Since buyers can't evaluate seller claims concerning credence attributes, sellers have strong incentives to provide misleading information to buyers. Moreover, since buyers can't evaluate the truth of seller claims, they have no reason to believe them. With no reason to believe any particular seller's claims, buyer will not react to accurate claims. Consequently, if a seller does provide a credence attribute (such as improved animal welfare), and if provision of the attribute is costly, sellers will not be able to induce buyers to pay a higher price for products with the attribute, since buyers won't have any reason to believe that the product carries the attribute. In this way, markets for products with desired attributes will fail to exist.

Why Does Anybody Produce Credence Attributes?

The story outlined above is a widely used parable in economics, known as the “lemons story”. If higher quality costs more, and if buyers can't easily evaluate quality, then they won't pay more for products that are in fact of higher quality, and sellers will have no incentive to produce high quality products; in short, the lowest quality “lemons” will come to dominate the market. But in fact we often observe products of different qualities being sold in markets, and receiving prices that are tied to quality.

In some cases, sellers are able to obtain third party certification for their production practices—that is, a respected outside organization provides information that is believable to buyers. Third-parties (independent of buyer or seller) may provide a series of services, such as standard setting (defining practices that improve animal welfare), testing services (objective tests of product attributes, where possible), certification (often through inspection), and enforcement.

Third-party services can be provided by many different entities, including consumer groups, producer associations, specialized third-party testing and certification organizations, national governments, and international organizations. For example, Underwriters Laboratories (UL) a private non-profit entity, provides standards and certification, primarily for electrical appliances; the Good Housekeeping Institute sets product standards and provides consumer guarantees for a wide range of products; the United States Department of Agriculture's (USDA's) Agricultural Marketing Service (AMS) works with producer groups to establish standards and provide certification services for many different agricultural commodities.

When Is Government Certification Effective?

Many different types of organizations provide certification services for credence attributes, and public provision is not the rule. Two factors seem to drive public provision. First, for any sort of certification service to affect consumer demand, it must be credible to consumers. In some cases, government provision may be the only source that is credible to buyers (although one can't simply assume that any government provision will be credible—surveys indicate, for example, that many European consumers do not find government certification of food safety attributes to be credible).

Second, some credence attributes are quite complex, and can be very difficult to test for. In the case of food products that are to be certified as non-biotech, for example, complex standards for non-biotech must be established, and suitable scientific tests must be designed. Competing standards, offered by different organizations, might serve only to confuse consumers and defeat the goal of offering useful market information. In this case, USDA's Federal Grain Inspection Service offers standards for nonbiotech labeling, designs tests for identifying ingredients in food products, and certifies third party laboratories who can perform the tests.

Government standard-setting and certification is not without risks, even if consumers view the information as credible. If product designs and relevant attributes are changing rapidly, standards may need to be redesigned over time, and alternative certifications may be desirable. Government-set standards tend to be inflexible, and government standard-setting may not respond quickly to changing industry conditions.

Certification, Information, and Labeling

A certified product will have no impact on consumer behavior unless consumers know about it. Under voluntary certification, firms can advertise the certification, and they can design certification labels for their products. Another challenge arises here: should sellers of the certified product rely on a uniform certification label, or should each seller design their own label? A uniform label reinforces the message of certification through many repetitions, but creates a "public good" problem, in that one seller's labeling and advertising benefits not just that seller, but all sellers of certified products. So, if individual sellers can't reap all the benefits of their ads, information may be underprovided.

Even if effective standards are in place, and even if effective systems for certifying compliance are in place, labels must still provide that information to consumers, and they may fail in that function. Consumers see a lot of product information. They may notice advertisements, they may read about products in newspapers and magazines, they may receive advice from acquaintances, and they see brands and labels on the products themselves. Labels and brands convey a lot of information, some of it fairly technical. Some labels are effective in conveying information that is sought and understood by buyers, while some labels are poorly designed to convey information, or convey information that is not well-understood by buyers. Certification and labeling strategies can fail because the information presented on labels simply isn't used by consumers. There has been some serious analyses of those label design and information issues, summarized in Golan et al (2000).

Should Certification and Labeling Be Mandatory?

Under voluntary certification, firms could choose to obtain certification for animal welfare practices, and then would advertise that certification to potential consumers. Government agencies could design standards, and could either provide certification services or could develop standards for third party certifiers. Voluntary certification services could also proceed without government involvement. Certified providers could charge higher prices for their products, and might also realize expanded volumes. Program costs would be borne by those who benefit—consumers of products produced according to humane standards.

Mandatory certification is quite different. All providers would have to obtain certification of the types of production practices that they followed, and standard-setting would have to differentiate among various practices, instead of simply certifying the use of humane practices. Government agencies would have to ensure enforcement. The costs would be considerably higher, and they would be spread among all buyers, not just those who prefer products produced according to humane standards. Moreover, mandatory labeling would spread information about animal welfare, by applying the message to all products sold to all consumers; in that sense the “public good” nature of advertising would allow humane providers to benefit from the advertising provided by the mandatory label attached to non-humane sellers. However, mandatory labeling and certification would also involve non-humane sellers in the process of designing certification and labeling standards.

Is the Problem One of Certification for Information?

Standards to effectively identify credence attributes like production standards may be in place, testing and certification systems may effectively identify products that meet the standards, and labels may effectively inform consumers about certified products. Yet market outcomes may not change. We have so far assumed that the economic problem stems from one type of market failure, one of “asymmetric information”. That is, we presumed that buyers care about animal welfare, and were willing to pay higher prices for products of animals that were treated humanely, but that they were unable to obtain credible information on humane production standards. They were unable to obtain such information because they couldn’t personally check sellers claims (the attribute is a credence attribute) and because sellers could easily lie, rendering all seller-provided information suspect. In that case, bad sellers (low costs, low prices, bad treatment of animals) would drive out good sellers (high costs, high prices, good treatment).

We’ve presumed, so far, that there are a significant number of buyers who would value humane treatment of animals if they were properly informed about it, and who would therefore respond to effective information. Their market response (increased demand for higher-priced meat produced using humane methods) would then increase the number of animals who were treated with humane methods, if increased demand were passed through in the form of higher prices for products from humanely treated animals.

But suppose the problem isn’t one of bad information, but rather stems from an externality. In economics, an externality is said to occur when one’s actions impose uncompensated costs or benefits on an outside party. Air and water pollution are classic externalities. My (unregulated)

activities in disposing of waste into a river imposes costs on downstream users of the water resource, and if I am one of many polluters in a complex river basin, I likely will not have to compensate those that I've harmed. In this case, I will likely choose waste intensive methods of production, and my products, selling at prices that do not reflect all the costs of my choices, will be consumed in greater quantities.

Animal welfare may be an externality problem, rather than an asymmetric information problem, if inhumane production methods impose costs on people other than consumers. Vegetarians are an obvious class. But our example so far, if it works, would only establish a market for meat from animals that were humanely treated; there might still be a very large market for animals treated in nonhumane ways, by those meat consumers who were indifferent to animal welfare. In this case, certification and labeling might have only a modest impact, in the aggregate, on animal welfare. The problem, then, would not for the most part be one of asymmetric information. Rather it, looks more like a consumption externality--some people's consumption choices impose psychic costs on others. In that case, certification and labeling would have only a modest impact on the problem.

In the case of an externality, providing that the externality imposed substantial costs on society, typical interventions to remedy the externality include taxes, bans, and direct regulation of production processes. Gasoline and cigarette excise taxes are examples of taxes aimed at remedying externalities. But those are taxes imposed on consumption externalities associated with retail products, and are not focused on externalities associated with a production process. In that case, the most likely intervention would be direct regulation of production, where certification would serve as a regulatory audit.

Direct regulation is likely to be far more expensive, as it would require increased costs, and an audit strategy, at a very large number of farms.

Who Pays For Certification?

Economists have considerable experience, and a detailed theoretical framework, for analyzing the impact of new regulatory requirements on prices, outputs, and profits. The theory suggests that the chain of effect can, under certain circumstances be quite complex, so we start with the most straightforward case.

The first important principle is that the extent to which changes in cost are passed through to buyers depends upon the *price elasticity of demand*. As demand becomes more insensitive to changes in price—that is to say, the less elastic is demand—a greater share of any cost increase will be passed through as a price increase. In turn, the price elasticity of demand depends upon the nature of substitutes for a product—the ease with which consumers can change among products. The demand for products of a single firm is considerably more elastic than is the demand for an industry's product, because other firms are good substitutes for the single seller. By the same principle, the demand for broadly defined products, such as beef, is less price-elastic than is the demand for narrowly defined products, such as a choice steak. Technical elements of substitution also matter—copper has more good substitutes for its uses than oil has for oil's uses.

The *price elasticity of supply* also matters. If supply is elastic—that is to say, if quantity supplied changes substantially when price changes—more of the cost increase will be passed to buyers as price increases. In the extreme case of perfectly elastic supply, all of the increase will be passed to buyers.

In economics, we define price elasticities as a ratio—the percentage change in quantity divided by the percentage change in price. A value of a price elasticity of demand of -0.3 (a 3 percent fall in quantity demanded associated with a 10 percent increase in price) would be quite inelastic, while a value of -5.0 would be quite elastic. Similarly, a supply elasticity of 0.3 would be relatively inelastic (unresponsive to changes in prices), while one of 5.0 or 10.0 would be quite elastic.

Perfectly elastic supply will arise under the following conditions. As costs are increased, producers initially try to raise the price to buyers. As buyers react to the price increase, quantity demanded falls, and falls more if the demand for the product is price-elastic. As the quantity demanded falls, producers reduce the quantity produced, and with that they reduce their own demand for inputs—labor, energy, materials, and capital. For some inputs, like energy, reduced demand by one industry will have no impact upon the input's price, because that input is widely used in many applications and a single industry usage is very small, relative to the whole market for energy. Similarly, people in some occupations (truck drivers, accountants) work in a broad variety of industries. Changes in the broiler industry's demand for truck drivers or accountants will likely have no impact on the salaries that workers in those occupations earn. In short, declines in industry demand for an input will affect returns to that input only to the extent that the input is *immobile and specific* to an industry.

Time matters here. Many inputs are relatively immobile over short periods of time. Over the long run, capital becomes more mobile through entry to and exit from an industry, and supply curves may often start to look more nearly horizontal. In a competitive industry in the long run, if it is also a “constant cost” industry (a horizontal supply curve in the long run), cost changes are fully passed through to buyers in the form of higher prices. In his presentation to this symposium two years ago, Gardner (2003) presented a series of charts that strongly suggested that this view applied to agriculture, in the sense that sharp long term declines in costs (increases in productivity) appeared to be fully passed through to consumers in the form of lower prices.

In agriculture, land (particularly cropland) is the input that is often viewed as specific to the industry, so supply may be inelastic with respect to prices, even in the long run, and changes in the demand for agricultural products do trace through to impacts on land prices. However, the effects may be more important in crop than in livestock industries. Industrialized livestock enterprises, such as modern confined feeding operations for dairy, poultry, hog, and fed cattle operations, use relatively little land. Moreover grazing operations use a variety of land types that may not be particularly specialized. As a result, livestock producers may have supply curves that look nearly horizontal in the long run, with the result that the costs of certification would be borne by consumers in the long run, and not by livestock producers.

To summarize, initially the extent to which a cost increase in a competitive industry will be passed through buyers (as price increases) or to input providers (as price decreases) depends on the price elasticities of demand or supply—the more inelastic, the greater the pass-through.

In turn, elasticity depends to a great extent on mobility—the ease with which inputs can be shifted to other uses, and the ease with which buyers can shift to other products. The extent that cost increases cannot be passed through to buyers or input providers, they will be borne by producers' stockholders, in the form of reduced profits.

But suppose markets aren't competitive. In the poultry and livestock industries, many producers have only a few potential buyers. Furthermore, some of those packer buyers may have some monopoly power in markets for meat. How does pass-through work when a firm has some market power? The answer here is considerably more complicated. The common perception that there is no pass-through under market power has very weak support in economic theory and in empirical analyses. In theory, cost increases will generally lead to some product price increase (and cost declines will lead to some price cuts). Under some circumstances, price pass-throughs can even exceed the competitive amounts, although the most likely outcome is less pass-through than would occur under competition.

What does the empirical evidence show? At least in terms of the pass-through of changes in agricultural prices to wholesale food product prices, and in particular pass-through in livestock and meat industries, the evidence looks pretty close to competitive predictions (Morrison-Paul and MacDonald (2003); Mathews et al.(1999)). That is, we expect that most of the costs of certification, labeling, and compliance to be borne by consumers.

Market responses are a little more complicated under an effective voluntary certification program. Figure 1 summarizes the issues. In figure 1, we assume, that there are constant per unit costs of production, C_p , and higher costs of production, certification and labeling (C_{ph}) for producers who use humane practices. We further assume that some buyers are indifferent to production practices, while other buyers care about humane practices.

Effective certification and labeling will serve to notify buyers about the sellers and brands who use humane practices. As a result of the improved information provided by the certification programs, demand for meat raised according to humane methods rises from d_{H0} to d_{H1} . In a competitive industry, price will reflect marginal costs, which are C_{ph} for these producers, so prices will rise to C_{ph} and the quantity of humanely produced product sold will increase from Q_{H0} to Q_{H1} .

The nonhumane part of the market will be affected, since demand will shift to the certified humanely produced product and away from the nonhumane product. Nonhumane prices will remain equal to C_p , since nonhumane producers face no certification costs, so quantity falls from Q_{I0} to Q_{I1} . If nonhumane producers have some fixed costs, they will lose some profits in the short run; in the long run, some producers will leave.

I have drawn the demand curves so that humane demand is only a small part of the market (Q_{H1} compared to Q_{I1}) to illustrate my prior point; if the problem is largely an externality, a certification program will solve only a small part of it.

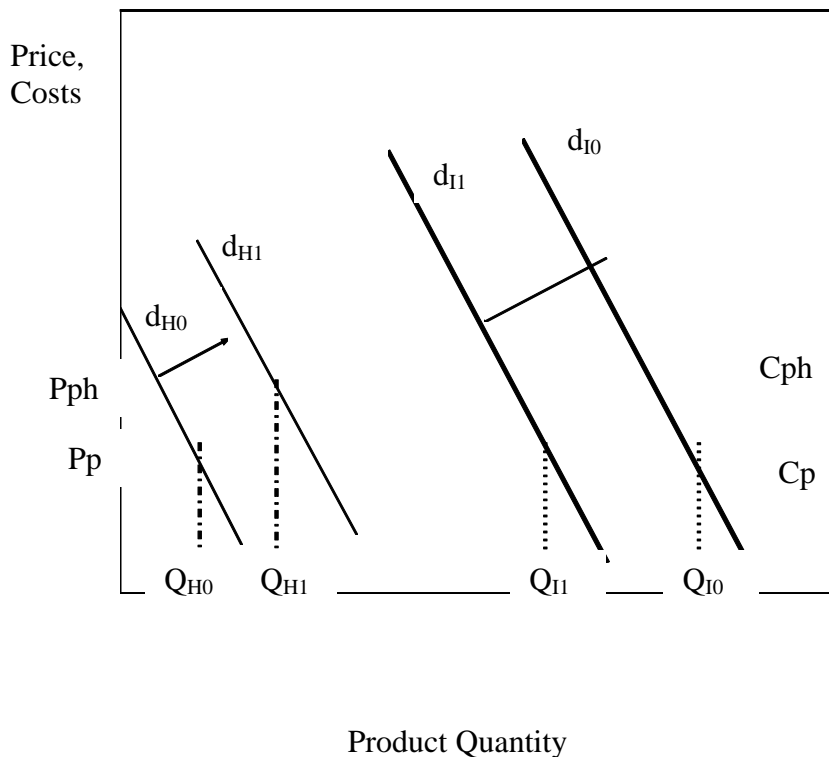
The specific shifts in demand may matter crucially, if there are important fixed costs associated with marketing certified products (I do not emphasize these in production, because I think they're relatively unimportant). Specifically, retailers carry only a few brands of a product, and

hence require demand to be beyond some threshold before any units of a product will be carried and sold. Moreover, retailers require a steady flow of product to maintain in-store inventories, and such steady flows requires a large scale wholesaling network. Finally, consumer demand growth may depend in part on frequent product reminders, either through visual observation in retail outlets or, failing that, heavy advertising. If those types of marketing fixed costs matter, products may need some substantial minimum levels of demand, and production, to be viable in a market at all.

Conclusion

Do voluntary certification programs have a role in promoting animal welfare? The answer depends in part on the sources of the animal welfare problem to be addressed. If there is a latent demand for products derived from humane production methods, and demand remains latent because sellers have information that buyers can't access or can't verify, then certification can help to create or expand a market for such products. In turn, the long run viability of such markets depends on the extent of that latent demand.

Figure 1: Market Responses Under An Effective Certification Program



References

Gardner, Bruce. "The Economic System of U.S. Animal Agriculture and the Incidence of Cost Increases." in *Sharing Costs of Changes in Food Animal Production: Producers, Consumers, Society, and the Environment*, Richard Reynnells, ed. September 17, 2003.

Golan, Elise, Fred Kuchler, and Lorraine Mitchell. *Economics of Food Labeling*. With Contributions by Cathy Greene and Amber Jessup. Economic Research Service. U.S. Department of Agriculture. Agricultural Economic Report No. 793. December 2001.

Krissoff, Barry, Fred Kuchler, Kenneth Nelson, Janet Perry, and Agapi Somwaru. *Country of Origin Labeling: Theory and Observation*. Economic Research Service. U.S. Department of Agriculture. Electronic Outlook Report No. WRS-04-02. January, 2004.

Mathews, Jr., Kenneth H., William F. Hahn, Kenneth E. Nelson, Lawrence A. Duewer, and Ronald A. Gustafson.. *U.S. Beef Industry: Cattle Cycles, Price Spreads, and Packer Concentration*. Economic Research Service. U.S. Department of Agriculture. Technical Bulletin No. 1874. April, 1999

Morrison-Paul, Catherine, and James M. MacDonald. "Tracing the Effects of Agricultural Commodity Prices on Food Costs". *American Journal of Agricultural Economics* 85 (August, 2003): 633-646.

Panel: Weighing the Costs and Benefits of Certification Programs

What Certification Means to Consumers

Adele Douglass, Executive Director
Humane Farm Animal Care

Certification Categories

Certifications are often referred to as “first-party,” “second-party,” and “third-party”. These terms refer to the organization that is issuing the label:

1. First party
 - a. issued by the manufacturer without independent review and are also known as "self-certified" labels
2. Second party
 - a. issued by industry, trade or membership associations. The standards are developed and verified by representatives of the industry
3. Third party
 - a. issued by organizations that are truly independent from the product that they certify and the manufacturers and retailers of the product. The decision-makers within these organizations (such as the board of directors), do not have any ties to the industry

The Challenge

1. Consumers are increasingly skeptical of labeling claims:
 - a. Only 21% of environmentally conscious consumers trust environmental claims of manufacturers
 - b. 58% rated certification by a non-profit organization as extremely or very important

(Source: The Hartman Group, Food and the Environment: A Consumer's Perspective (Phase II), 1997)

2. “Some labels are highly meaningful, while others are misleading or even deceptive,”
Urvashi Rangan, Ph.D.,
Director of the Eco-Labeling Project for Consumers Union

What makes a Good Label?

The best certification programs are those which consist of an independent organization verifying that a product meets a set of meaningful and consistent standards for animal care.

Requirements: The Standards

1. Meaningful and verifiable
 - a. The label should have a set of meaningful standards for animal care, based on current, relevant and sound scientific evidence.
 - b. These standards should be verifiable by the certifier or another independent inspection organization.
2. Consistent and clear
 - a. A label used on one product should have the same meaning if used on other products.
 - b. Standards should be written in a way that can be verified in a consistent manner so that the label is consistent in meaning among different products.

Requirements: The Certifier

1. Transparent
 - a. The organization behind a label should make information about organizational structure, funding, board of directors, and certification standards available to the public.
 - b. If such information is withheld, it is difficult to determine the meaning and clarity of the standards or the independence of the certifying organization.
2. Independent
 - a. Organizations establishing standards and deciding who can use a logo should not have any ties to, and should not receive contributions from logo users beyond fees for certification.
 - b. Employees of companies whose products are certified, or applying for certification should not be on the board of directors of the certifier (and no one affiliated with the certifier should be on the board of directors of the organization being certified).
 - c. Some certifying organizations have explicit conflict of interest policies prohibiting such affiliations.

Certified Humane Raised and Handled

1. Meaningful and verifiable
 - a. Animal Care Standards developed by a 21-member committee of internationally renowned animal welfare scientists and veterinarians

- b. Species-specific management and husbandry requirements for 9 different farmed species
 - c. 20+ inspectors with expertise in animal behavior, veterinary science or animal production conduct on-site inspections to verify compliance with HFAC standards
2. Consistent and clear
- a. **All** producers must comply with **all** HFAC standards for a particular species, in order to be certified
 - b. Inspectors are assigned to inspections based on their specific species knowledge
 - c. **Certified Humane Raised and Handled is the only animal welfare certification program in North America to be ISO Guide 65 accredited**
3. Transparent
- a. Website www.certifiedhumane.org carries detailed information regarding:
 - 1. Staff
 - 2. Committee Members
 - 3. Board of Directors
 - 4. Funding Sources
 - 5. Animal Care Standards
 - 6. Policy Manual describing the certification process
 - 7. Certified Producers, etc.
4. Independent
- a. Non-profit organization
 - b. No industry affiliation
 - c. Independently-contracted inspectors
 - d. Conflict of interest policy for all staff, committee and board members
5. Accredited Certifier
- ISO Guide 65 specifies requirements for organizations operating third-party product certification systems. HFAC is one of 16 organizations in the U.S. to have met the requirements of the USDA ISO Guide 65 Assessment program. The other 15 organizations are organic certifiers.

For more information, contact:
 Humane Farm Animal Care,
 PO Box 727, Herndon, VA 2072

or visit our website:

www.certifiedhumane.org

Panel: Weighing the Costs and Benefits of Certification Programs

[What Certification Means to the Industry \(Dairy\)](#)

Click link above to see Powerpoint presentation.

Dennis V. Armstrong
Professor Emeritus, Extension Dairy Specialist
University of Arizona, Tucson
Consultant, Validus

Briefing on Animal Welfare Conferences:

- A. “From Darwin to Dawkins: the Science and Implications of Animal Sentience”, 2005 meeting in the United Kingdom; and,**
- B. “Animal Welfare Initiatives, Needs, Regulation and Communication: Building on the Past, Preparing for the Future” the 2005 Animal Agriculture Alliance meeting**

Meetings A and B: Two Perspectives, Two Approaches, and One Topic of Concern

Gail C. Golab
Assistant Director, Communications
American Veterinary Medical Association

During the spring of 2005, and within days of each other, Compassion in World Farming (CIWF) and the Animal Agriculture Alliance (AAA) each hosted symposia addressing animal welfare challenges. Although considerable commonality existed in issues of interest to the two organizations, their perspectives and approaches to exploring these issues and conveying information were quite different. Differences in approach are not surprising, given the respective missions of the two organizations.

CIWF indicates in its vision statement¹ that “CIWF seeks to achieve the abolition of factory farming and the adoption of agricultural systems which meet the welfare needs of farm animals in the belief that this will also benefit humanity and the environment.” CIWF works to achieve this aim by “hard-hitting campaigning, public education, and vigorous political lobbying.” The AAA, on the other hand, has a mission² “to support and promote scientifically proven practices that ensure and enhance the long-term viability of animal agriculture” and seeks to be “a positive and informed voice communicating reliable, science-based information on key agricultural topics ranging from animal welfare to biotechnology to environmental ethics.” The AAA hopes to fulfill its mission by “providing a unified voice for those involved in the animal agriculture and food industries to communicate science-based information to a broad-based audience of consumers and media.” Different missions, but their common goal is effective communication with stakeholders.

Because conferences are one means by which organizations provide information to their membership and/or work to influence other publics, a careful examination of the topics, speakers, attendees, and media coverage associated with each of these meetings is akin to a snapshot of what is important to the sponsoring organizations and how they communicate with their stakeholders. Such an analysis also hints at how perception and misperception can affect what messages are actually sent and received.

¹www.ciwf.org, accessed August 29, 2005

²www.animalagalliance.org, accessed August 29, 2005

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Meeting A:

International Conference on Animal Sentience: *From Darwin to Dawkins: The science and implications of animal sentience*, London, England, March 17-18, 2005. Organized by Compassion in World Farming Trust, with support from the World Society for Protection of Animals, Tesco PLC, Sheepdrove Organic Farm, and the New Scientist magazine.

Marlene Halverson
Animal Welfare Institute

Sentience – the ability to perceive by the senses.

Overview

This international conference brought together over 600 participants from around 50 developed and developing countries to consider the moral, political, and practical implications of both scientific findings and popular conceptions about animal sentience and how these can and should influence how humans relate to animals. Speakers included scientists, ethicists, animal advocates, farmers, policymakers, and consumer representatives.

Animal welfare scientists related what is known about how animals relate to each other, their environments, and the humans in their lives. They also described animal capabilities and how these are influenced by domestication and farming practices. For example, stresses associated with farm practices that some might consider routine nevertheless adversely affect memory and encourage forgetfulness in farm animals.

Ethicists discussed how the growing evidence for animal intelligence should influence humans' actions regarding animals. Animal advocates, policymakers, and farmers discussed how to implement animal handling procedures throughout the food system that explicitly accommodate animal capabilities while preventing and alleviating pain and suffering. Particular attention was given to the global initiative on animal welfare initiated by the OIE, the World Organization for

Animal Health, and the implications of international trade rules as regards ensuring animal handling procedures that reflect current scientific understanding of animal sentience. Consumer representatives described consumer expectations for ethical food production.

Finally, participants were invited to visit Sheepdrove Organic Farm, a leading British organic farm raising sheep, pigs, broiler chickens, and beef, and dedicated to educating the public about organic farming.

Highlights of Presentations

Dr. Marion Dawkins of the University of Oxford Department of Zoology opened the conference with an overview of animal sentience. She emphasized how important it is to take animal sentience seriously, while still recognizing that there remain many unanswered questions about which behaviors and abilities imply sentience. Asking why, centuries after Darwin's discoveries, people still debate the existence of animal sentience, she noted that science cannot tell us even today, how the brain gives rise to the richness of subjective experience in humans or animals and this uncertainty contributes to the people's sense of controversy over animal sentience.

Although sentience is not the same as consciousness, Dawkins noted that there are concepts of consciousness distinguished by philosophers that are relevant to defining sentience. These include phenomenal consciousness or sensation – i.e., seeing colors, hearing sounds, feeling pain – and access consciousness – i.e., a much more complicated form of consciousness in which one is able to think about or report on one's own thoughts.

Dawkins stated that it is phenomenal consciousness – the most basic form of consciousness -- that is most relevant to consideration of animal sentience and its implications for human actions regarding animals. As well, she emphasized the importance of thinking of animal welfare not simply in terms of what humans would like to see for animals but also and most importantly in terms of what the animals themselves want, as revealed by their own choices and actions.

For what reasons might phenomenal consciousness be the most appropriate form of consciousness on which to base animal sentience and our moral obligations to animals? Dr. Donald Broom, University of Cambridge, asked how bad is pain for humans as compared to fish. Humans have more complex brains than fish and one consequence may be that humans can deal better with pain than fish. Simpler animals may be less equipped or able to deal with pain than animals with more complex brains. Pain stems from phenomenal consciousness.

Dawkins described a study of broiler chickens designed to answer the question whether lame broiler chickens feel pain or are just limping. In this study, the lame chickens were given the choice between foods of two different colors, one containing an analgesic and one untreated. They quickly learned the difference and preferred the food that contained the analgesic.

Dr. Jane Goodall provided the keynote address for the conference and opened with the voice of a chimpanzee proclaiming his presence. She described chimpanzees as ambassadors of the animal world to humans. Bringing the animals' voice into these gatherings, she said, is important because it is what we should learn about and go away pondering.

Discussing “the changing concept of animal sentience,” the paper by Dr. Ian Duncan of the University of Guelph, described the evolution of human attitudes toward animal feelings through the centuries, noting that, while many people of the time treated animals as though they were sentient, from the Renaissance through much of the 18th century, philosophers generally denied it. But in the 19th century, the crucial question “Can animals suffer” had been asked and, with the exception of a setback occasioned by the rise of “behaviorism” in the 20th century, progress toward understanding of animal sentience has been made. Duncan stated that decisions concerning animal sentience should not be made on the basis of cognitive abilities but on the basis of their emotions -- how animals are feeling – from well to good.

Dr. Donald Broom described the evolution of moral attitudes towards animals. He suggested that collaborative behaviors – helping others rather than harming them – are effective strategies applied by not only by humans but by animals, including cooperative grooming arrangements among cattle, and care of the weak. Like humans, socially living animals, if they want their societies to be stable, act so as not to injure others and this is the commonest way animal societies exhibit altruism and is an important part of the moral code of animals in socially living groups. Socially living animals take great care not to injure each other – in herds of cows with long horns, eye injuries are rare despite the proximity of horns to other cows’ faces. Animals also show abilities indicating awareness.

Broom related an experiment he and colleague Kristin Hagen conducted in which heifers who learned to press a panel to open a gate and obtain food were more likely than those that did not learn the task to experience a leap in heart rate and to gallop and jump. The excitement behavior was shown at the point where they learned it and not on subsequent occasions of performing the same task to get food, indicating an awareness of what is going on in their own brain and their own learning. This excitement response he and his colleague referred to as the “Eureka effect.” Animals must assess risk in order to act in this way and show an awareness of their own environment. Pigs also exhibit such awareness.

Broom suggested that humans have moral obligations toward all humans and to the animals with whom they interact. That is, if humans use animals, they have an obligation toward them. He agreed with Duncan that for the purposes of formulating laws and policies, it was necessary to draw a line concerning what species should be protected and the line should be drawn to include all animals that are sentient, which include all vertebrates and cephalopod mollusks.

Having drawn the line, there is still the question of how bad things are for the individual that is sentient. We should not assume that pain is less for a pig than a person. Generally, if an animal has a more complex, sophisticated brain, the animal may be better able to deal with problems including pain so that pain for the fish is experienced more acutely than pain for humans. Broom also suggested that “cost-benefit” analysis, in terms of determining what humans should or should not do to animals, is not appropriate because there are acts that are always wrong. He recommended acting on attitudes we have as a consequence of the biological evolution of morality in humans and other species by extending altruism and increasing the size of the group humans think of as “us” to include all people and to some extent individuals of other sentient species.

Some presenters, including Drs. Ed Pajor, Purdue University and Dan Weary, University of British Columbia, discussed how to obtain information about animals' feelings and recognize and quantify pain in animals. Dr. Per Jensen, Linköping University Department of Biology, described how domestication and artificial selection have modified behavioral strategies in animals to some extent but how, nevertheless, domesticated animals still basically behave in a manner that was functional in the environment of evolutionary adaptation. For example, prior to farrowing sows build nests in a manner similar to that of their ancestor the European Wild Boar. Dr. Marek Spinka, of the Research Institute for Animal Production, Czech Republic, noted that not all natural behavior patterns enhance the welfare of animals but described how important capabilities and behaviors that do enhance animal welfare can be accommodated in the farm environment through environmental enrichment. Dr. Joy Mench, University of California, Davis, described how domestication has affected the behavioral repertoire of modern-day chickens, which remains remarkably similar to the behavioral repertoire of their wild ancestors, and discussed outcomes of mismatches between the behavioral characteristics of chickens and commercial selection and management programs.

In discussing sentience in fetuses and newborn animals, Dr. David Mellor of the Animal Welfare and Bioethics Center at Massey University, New Zealand noted that both sentience and consciousness are necessary for individuals to suffer. If sentience is capacity to perceive by the senses, the brain must be able to transduce sensory inputs into perceived sensation. That is, for an event or experience to have an impact on the animal, consciousness is necessary.

Presenters also discussed the implications of animal sentience for how humans handle fish and other wildlife and animals bred for fur. On the practical side, other presenters, such as farmer Roland Bonney, described practical research and applications of farming techniques that respond to the realities of the new food marketplace where consumers are demanding more and more attention to how the animals that produce their food are raised.

While most presenters stressed the need to study animals to know what they want, others suggested a certain degree of anthropomorphism is permissible, presumably if it does not contravene evidence from new scientific efforts showing what animals prefer. Similarly, while most presenters spoke in terms of human obligations to animals, some discussed animal sentience in terms of recognizing rights of animals.

The conference also revealed the "state of animal sentience" – with speakers describing how human acceptance or non-acceptance of animal sentience is affecting animal welfare in countries around the world. Some of the most dramatic presentations discussed the changing attitudes toward animals in China, South Korea, and Vietnam, where recent surveys commissioned by the International Fund for Animal Welfare indicated that 90% of those surveyed believed humans have a moral duty to minimize the suffering of animals. This contrasted with current practices in China, which Dr. Song Wei of the University of Science and Technology of China said legislation is being sought to curtail, including the feeding of live cows and pigs to tigers in zoos.

The conference concluded with a discussion of international policy issues in which Dr. David Wilkins presented a history of animal protection in Europe and Dr. David Bayvel of the OIE Permanent Animal Welfare Working Group described the new animal welfare initiative of the World Organization for Animal Health.

Compassion in World Farming has made selected papers from the conference available at its new website dedicated to tracking scientific, legislative, and other developments relating to animal sentience: <http://www.animalsentience.com/>

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Meeting B: “Animal Welfare Initiatives” Animal Agriculture Steps Up to the Plate on Animal Welfare Issues

Don Butler, Chairman
Animal Agriculture Alliance
Director, Government Relations & Public Affairs
Murphy-Brown LLC

Over the past few years the term ‘animal welfare’ has been bandied about in some circles as if it were some sort of new, revolutionary concept in the livestock industry.

In reality, caring for animals has been a time-honored way of life for livestock producers, who have long understood that their very livelihood depends upon doing all the things that ensure the continued well-being of their animals. It’s just that in the past many of them never thought of these daily activities as having a specific name or label—it was just the right thing to do, and made perfectly good economic sense.

In fact, I can think of no area that is more critically important to livestock producers than making sure the animals under their care are safe, comfortable and healthy. And the impact of sound animal welfare practices extends far beyond each producer’s operation—maintaining a high level of animal well-being has a direct impact on stakeholders all along the food chain.

While farmers and ranchers have always implemented best practices to provide for the well-being of their animals, during the past 20 years or so producer groups have worked to develop and implement formalized, specific practices and guidelines for their industries to ensure that all producers have access to the best possible science supporting animal well-being.

Farming Has Changed

For example, based on my experience the biggest differences in how animals are raised today versus 50 years ago are the systems used to house farm animals. Both of my grandfathers, and I suspect some of your grandparents as well, kept farm animals for food and as a means of

providing income for their families. Typically, swine and cattle were kept in outdoor lots, pastures, wooded areas or some combination of these.

One of my earliest memories of visiting my grandfather's hog farm was helping him look for sows that had farrowed down in the woods behind his house. I recall finding sows and their newborn piglets in shallow depressions in the ground that the sows had made by rooting out the dirt into a crude bed. Sometimes there would be some straw or leaves in these beds but mostly it was just soil. A sow would give birth to 10 to 12 piglets, all of them essentially hairless and with delicate pink skin.

During the winter months we would find these babies shivering in the freezing cold, or rain. Adding to this stressful situation was the ever-present 400-pound sow, sometimes crushing the piglets when she shifted her position or returned to the bed. In this environment, newborn pig mortality was often as high as 50 percent due to the extremes of weather and death by crushing. And you can add to this the threat of being eaten by a variety of wild and domestic carnivores that lived in the area.

By dramatic contrast, today's modern livestock farms look very different from the American Gothic image many people still cling to. During my lifetime, new management concepts, facilities and practices have been developed to protect livestock from the extremes of weather and other numerous outdoor hazards. These practices help ensure the availability of adequate food and water, facilitate daily observation of the animals' health and provide medical treatment in a timely and effective manner to protect animals from threats of all kinds.

Management Systems Implemented

For example, a number of livestock operations, such as my company, Murphy-Brown, the livestock production subsidiary for Smithfield Foods, have developed and implemented what we call Animal Welfare Management Systems. These are formalized systems that take a comprehensive approach to ensuring the well-being of farm animals. Our management system identifies all significant animal welfare aspects of our production system and ensures that we have adequate and effective practices, procedures and processes to manage each of these aspects.

Despite these innovations, many well-meaning people are under the misguided impression that today's modern livestock production practices are actually bad or harmful to the animals. They use the term "factory farming" to vilify modern production farms, implying that animals in these facilities are subjected to cruel and unhealthy conditions.

Often, the people making such claims have no real first-hand knowledge of these facilities, their design or function. These people refuse to believe that modern facilities are designed to maximize the comfort and minimize the stress on animals.

Contrary to the claims of animal rights activists, producers who follow the latest scientific recommendations for Animal Welfare Management Systems and follow specific animal-care guidelines are actually providing surroundings that are better for the animals, better for the producers, better for the environment and, in the end, provide consumers with higher quality and safer food products than 50 years ago.

Communication is Key

If that is the case, then why does it seem we are constantly on the defensive, fending off attacks on our modern livestock production methods? To borrow a line from the old Paul Newman movie, *Cool Hand Luke*, “what we have here is a failure to communicate.” While farming and ranching, as well as food safety, have improved continuously over the years, agriculture’s biggest shortcoming is not doing a very good job of communicating to the public what we do, and how well we do it. Until fairly recently, we did not see a need to tell our story because we wrongly believed that people would just somehow understand our commitment to our animals and our land.

What we have failed to understand is that fewer and fewer people are exposed to farms today, and as a result they have little knowledge of where their food comes from—sometimes I think many people believe meat products originate at the grocery store. Consequently, consumers can be susceptible to activists’ messages about livestock production, much of it either inaccurate or intentionally false.

Consumers tell us they want to be assured that animals raised for food are treated humanely and with respect. The take-away message is loud and clear: In order for livestock production to sustain its future success we not only must ensure the well-being of our animals, we must also effectively communicate this information to the public. There are a number of key messages we need to convey to our audiences.

Attacks Will Continue

Animal agriculture will continue to be attacked by activists who are opposed to the use of animals for food or any other purpose. Their weapon of choice often includes claims of animal abuse and cruelty, most of which have no basis in fact.

Producers need to stress that in production agriculture, as in all businesses, science and technology are vitally necessary to increase efficiencies and provide more consistent and better quality products to feed a hungry world. We employ technologies today that were not available 50 years ago, and we should be proud that agriculture is an innovative and professional business, and one that provides for humane treatment of the animals under our care.

Yes, farms are larger today. Yes, they look different from the farms of our grandparents. Yes, we use science and technology to enhance our businesses. And yes, we use machines and equipment to make our businesses more efficient. Like all good businesses, farming is an enterprise whose future depends on efficiencies in order to ensure its survival. We are finding these efficiencies, but it is not—and should never be—at the expense of our animals. Good animal husbandry is essential to the future of animal agriculture, and I firmly believe the vast majority of producers understand that.

Our key audiences need to know that on today’s modern farms, most farm animals are not exposed to predators, rain or freezing cold temperatures in winter, or the sweltering heat on 95-degree days in the summer. Other than cattle and sheep, most farm animals live in

temperature-controlled environments where they are protected and better cared for than those on my grandfather's farm. Likewise, the harvesting systems used today to process them for food are much more humane than systems that were generally employed on farms 50 years ago.

Science, technology and credible and workable animal-care guidelines are among the tools that producers and ranchers, along with veterinarians and scientists, have developed to enhance the production practices and systems used today. Through research, information sharing and understanding the benefits of new programs or practices, producers and ranchers are constantly striving to improve the care of their animals.

Striving to Improve

At the same time, I'm certainly not saying our industry is perfect. Like any industry, we have flaws and areas in need of improvement. We continually work on strategies for doing things better in the realm of animal welfare. We all know that agriculture must be diligent in our animal-care practices but we must also provide credible evidence to stakeholders that we are doing the right things to ensure animal well-being.

Producers and ranchers, probably more than any other business people, have recognized this reality. To that end, the Animal Agriculture Alliance, a national multi-species organization focused on animal welfare issues, began hosting its annual Stakeholders Summit four years ago. The Summit's goal is to provide a forum for sharing information about animal welfare initiatives among leaders throughout the agriculture and food industries. At the 2005 Summit, the first half of the program was dedicated to providing updates from nine species groups on their animal welfare programs. While they all differ, they are all science-based and developed over a period of several years by experts in each of their respective fields. Each group discussed its current animal welfare programs, as well as the initiatives they are working on for the future.

The keynote speaker at the 2005 Summit was Dennis Treacy, Vice President of Environmental, Community and Government Affairs for Smithfield Foods. Treacy emphasized the need for all stakeholders in the food production chain—producers, ranchers, processors, restaurants and food retailers—to talk to each other, generate trust with consumers, focus on solving problems and, most importantly, to be reasonable.

Treacy emphasized that producers and food companies should continue to demonstrate compassion by establishing and abiding by proactive animal welfare programs. Treacy also provided advice on how to establish common ground with animal welfare advocacy and activist groups. He suggested working on a person-to-person level to open dialogue early in the process.

Much of the remainder of the 2005 Summit focused on how agriculture should, and could, improve communications to provide our key audiences with a better understanding and appreciation of our industries. Speakers agreed that developing stakeholder coalitions to work together to find solutions to common problems, educating the public and finding opportunities to talk to the public are critical elements in ensuring the public's perception and understanding of our industry are not based on the claims of activists.

On the issue of animal welfare, most of our key stakeholders understand the important role that livestock production plays in sustaining the food supply for this country and the world. What they want from us is reasonable assurances that producers are taking the necessary steps to ensure that our animals are raised in a manner that provides for their safety, comfort and good health.

Our task, then, is to do a better job of communicating our long-held commitment to the basic tenets of animal welfare, and I am confident the leaders in today's modern livestock production industry stand ready to effectively communicate our assurances to our stakeholders.

Ethical Considerations for Production Agriculture and Activist Groups

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Introduction

We live in a world in which most people agree that human beings have ethical responsibilities or moral duties toward nonhuman animals. As philosophers debate over whether these duties are based on animals having moral rights or animals being sentient, and scientists try to determine the various states constitutive of animal “well-being,” animal producers face growing pressure from animal activist groups who apparently believe that animal producers do not believe they have moral duties toward animals. Even if producers do believe they have moral duties toward animals, and even try to act on them, some activists do not seem to believe them.

In this paper, I will try to explain how the answer to the question of whether farmers believe in (and act on) moral duties to animals is not really “yes” or “no,” but instead “what do you mean by moral duties?” We need to consider whether (as some activists claim), animal producers have duties toward their herds or flocks that they are not fulfilling, therefore entitling us to blame or shame them for being immoral. If animal producers’ actions are grossly immoral, then it is incumbent on others in society to try to impose or enforce these moral duties when an individual farmer chooses to not act on them. If they are not acting immorally, then the activists are mistaken, and have no right to demand that society “legislate morality” in this regard. In fact, I will argue that for the most part producers are acting on their moral duties, and the issue is really that producers understand their moral duties in different ways than activists do. The practical upshot of this concerns the question of whether or not producers are under some moral obligation to adopt and abide by standards established by the various groups identified in Reynnells’ (2002) compendium of “codes” crafted by various animal producer, animal science, and animal welfare activist groups.

Animal Ethics Revisited (Briefly)

Given the extended history of the philosophical discussion of our duties toward animals, and the extensive literature this discussion has produced, I only briefly want to touch on these matters. I want to suggest initially that philosophers may have done a disservice

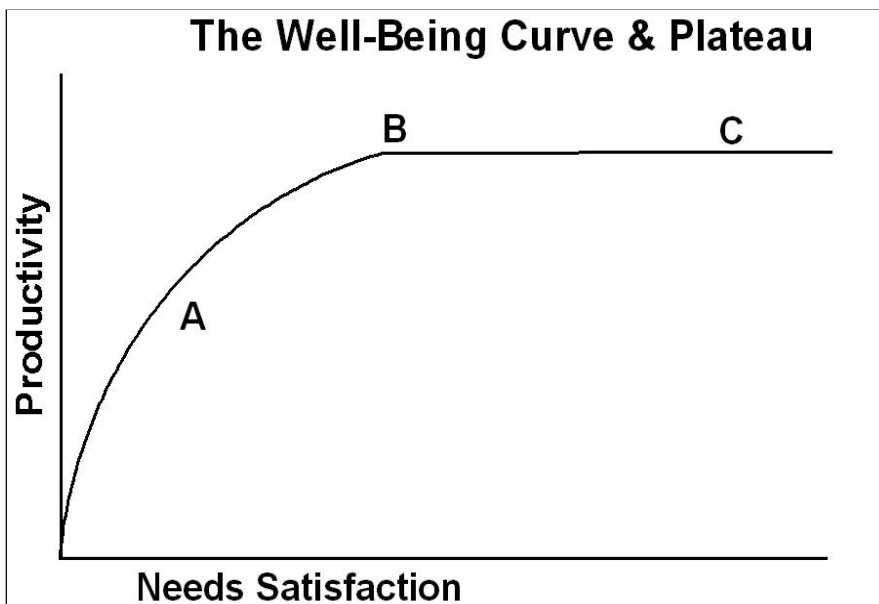
to the discussion of moral duties toward animals, by framing the discussion in terms of the traditional ethics language of “rights” and “welfare.” (See Thompson 2004 for a good discussion of this language.) I say this because the attempt to impute rights or welfare to nonhuman animals seems to assume that we know the basis for imputing rights or welfare to *people*. And, there is no settled agreement on what it means for people to have rights, or what we are talking about when we talk about people’s welfare. For example, for Regan (2004) or Singer (2002) or whoever to say that animals have rights or welfare is to assume that we know what “having rights” means or “having welfare” means, neither of which are unanimously agreed to by philosophers or others.

I believe the better concept on which to base (or at least think about) our moral duties to animals is the concept animal scientists and producers who research and think about these issues have used for decades, namely, well-being. I think this is to be preferred because it doesn’t require anthropomorphizing animals or what is called “extensionism” – the extension of moral rights or moral consideration on the basis of some characteristic (consciousness, sentience) that humans possess which we also find in animals. (Rejection of extensionism underlies the charge that Regan is really a “mammalist” in so far as his extension of “subject of a life” to animals as the basis for rights actually extends only to higher order animals, especially higher order mammals.) Instead of seeing morally relevant similarities between humans and nonhuman animals, or extending moral duties, by using the concept of well-being we can find the specific moral duties we have to animals on the basis of characteristics that the animals themselves possess, individually or by species. Swine are not chickens, so our moral duties to swine will differ in many respects from our duties to chickens. This parallels Rollin’s (1995) notion that animal species have “teloi” – natures and purposes – that are distinct from one another as they are distinct from ourselves.

The fact is that even in the animal welfare literature produced by animal scientists, “welfare” really means “well-being” as determined by the physical, physiological, behavioral and cognitive characteristics of an animal under a given set of circumstances. In this respect well-being is objective and measurable, unlike welfare, which, as Thompson (2004) notes, was proven by Kenneth Arrow to be unmeasurable and impossible to compare among individuals. Stricklin (2003) is correct that, following Hume, we cannot derive our moral duties directly from what science shows us to be the case – this being the domain of ethicists or individual judgment – but we can at least base our duties to animals on how we affect their states of being.

Stanley Curtis (1993), following Fox (1984), characterizes well-being in terms of the fulfillment of needs. Curtis simplifies Fox’s typology of needs, identifying three major categories: (1) basic physiological needs, (2) safety needs, and (3) behavioral (sometimes called “psychological”) needs. Physiological needs include adequate nutrition, good health and a liveable environment; safety needs include freedom from accidents and predation; and behavioral needs include natural social relationships and relative freedom from stress.

The idea therefore is that if animals have these needs, then because in production agriculture animals are under human control, producers have duties to animals. This is attractive from the point of view of practical ethics, because we can either avoid “rights vs welfare” talk altogether, or coopt the rights/welfare ideas: needs are the basis for rights, satisfied needs are constitutive of welfare, etc. The reason Curtis, and subsequent thinkers (e.g., Thompson *et al.*, 1994) put needs-satisfaction in the “welfare” camp is political and partly conceptual. Politically, since “animal rights” has been associated with PETA and anti-animal agriculture activists, talk of satisfying farm animal needs as respecting rights makes (and probably should make) animal producers skeptical at least if not plain nervous. Does “respecting rights” mean satisfying every need an animal might have? The conceptual point is, however, more important. If animals have a variety of needs in each of the three categories, a rights approach might demand that we satisfy *all* of the needs simultaneously in order to perform our moral duties to animals. Welfare, to the contrary, might be met by satisfying some of these needs. It is more clear, nevertheless, to talk of moral duties toward animals in terms of contributing to well-being.



Where this approach takes us next is to consideration of the fact that needs can be satisfied to different degrees, or more needs can be satisfied rather than fewer, so that we can talk of “levels of well-being” (Lay, 2003). This is also consistent with animal scientists’ studies on the subject. What is interesting to consider at this point is whether

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there is a “welfare plateau” as represented in Figure 1. Curtis (1993) states that British scientist D. C. Chardwick hypothesized a “well-being curve” that eventually reaches the “well-being plateau” (though no writings on this by Chardwick was cited nor could any other references be found in recent literature). Still, this notion is worth pursuing.

As should be apparent, the idea is that needs satisfaction runs along a continuum. Given the number of different needs animals have, in those different categories, farmers are in the position of being able to satisfy more needs or satisfy existing needs to a greater or

lesser extent. What is interesting is that despite Fox's (1984) claims to the contrary, there does seem to be a causal relationship between satisfying some of the needs of their herds or flocks and improvements in animal productivity. Certainly this is true in the case of physiological needs and safety needs (Reynnells, 2003). Healthy animals, free from predators, are keys to a productive cow-calf operation, layer facility, or horse farm. Where behavioral or cognitive needs fit in the picture I will discuss shortly.

I am not sure if there is sufficient empirical evidence to prove that the plateau exists. However, even if there is not, this is still a useful concept in that it illustrates that at the very least, there can be "movement" up or down the curve (e.g., consider the section labeled "A"). Thompson *et al.* (1994) have echoed earlier observers' empirical claims that a good many producers in American agriculture, and probably an even greater number in other countries, are "behind the curve," so to speak, in not recognizing how improving the well-being (satisfying needs) of their animals will positively impact productivity. Perhaps the henhouse is too hot; the horse barn is filthy and dangerously close to fostering disease; or the cattle need a better nutrition regimen. As a result, these producers are somewhere below point B on the curve. The idea here is that, in a happy coalescence of self-interest and morality, improving animals' conditions under some circumstances may not only fulfill producers' moral duties to their animals, but can contribute to the bottom line as well. The point is to identify those areas of improvement, to bring all producers up to point B, where maximum productivity is achieved, and where the curve begins to plateau.

It is at point B where the implications of the curve become interesting from a moral point of view. The argument here is that there are some things that could be done – some actions that could be taken – that would increase well-being even more, without any gains in productivity to be sure, but *without any losses in productivity* (and by implication, decreases in profit). Although it is not clear in the literature I am aware of, I assume that gains in well-being (Point B to Point C) would come from satisfying additional safety needs (e.g., careful choice of appropriate technology systems) or more likely, satisfying "higher" behavioral or cognitive needs (e.g., reducing stress to the lowest level compatible with the production system). Again, it is an empirical matter what specific actions may lead to the move from B to C. And, although it is not on the graph itself, what happens after well-being levels reach Point C? Intuitively, after C we should probably see a drop in productivity, since there are some actions that are possible but likely would be costly or too intrusive. I am not sure, but I can imagine an extreme animal welfarist argument that after C is a "profound state of well-being," something beyond "contentment" to "ecstasy." While that can be imagined, it is hard to see how this would fit in an animal ethic that is supposed to be, above all, practical. Let us leave the matter of "beyond C" for speculation. To summarize, if the Well-being Curve and Well-being Plateau have any empirical (or even hypothetical) validity, we have a fruitful way of addressing the question posed at the beginning of this paper. Assuming a producer's animals are generally at some level or point on the curve, at what level or point are

farmers' actions toward their animals satisfying their moral duties to the animals? Do farmers have moral duties to the animals beyond that point they are not satisfying? Specifically, is it a producer's moral duty to take actions to move their animals from A to B, or from B to C as well?

Moral Duties Toward Animals

The first matter is whether fulfilling needs (say, to Point B on the curve) is a moral duty farmers have. The second is whether this moral duty extends to moving the animals along the curve ultimately toward point C. A third issue is whether others, i.e., not farmers, have any moral duties in this regard.

Do farmers have moral duties to satisfy their animals' needs? Certainly there is incentive to do so, at least to Point B on the curve, again self-interest also suggests this as a reasonable course of action. But I think the answer to the ethical question is also yes, based on two things: First, the *fact* that the animals have needs and are under the producer's care means that without the producer providing for those needs they would not get satisfied. (I won't distinguish here between owner or herd manager: whoever makes decisions about general level and kinds of treatment and acts on those decisions is "the producer" for all practical purposes). Second, consider the nature of moral duties generally. If the fact that "X has needs that Y can satisfy" can provide grounds for establishing a moral duty on Y's part, then we have a clear case of moral duty here.

Borrowing from the structure of Singer's (1972) "Relief Argument," the argument proceeds thus:

1. Pain is bad wherever it is found
2. Poor health, physical suffering and deprivation, and an intolerable environment are painful
3. If an agent is in a position to prevent/remedy pain & suffering, and can do so without costing him or herself anything of moral significance, s/he must act to prevent/remedy that pain/suffering. It is a moral duty.
4. Farm animals on the A section of the well-being curve experience some pain/suffering.
5. Producers are in the position to prevent pain/suffering, and can do so (at least to B) without costing anything of moral significance.

Therefore,

6. Producers have moral duties to move their animals at least to Point B on the well-being curve.

Singer's original argument concerned nations' duties to alleviate starvation in famine-stricken areas, but the logic, especially of premise 3, is essentially the same. The ability to "help," without sacrifice (and in our case with actually benefits also accruing to the

producer), establishes the moral duty. Note that rights or deservingness or any of the other criteria typically offered as a justification for duties to someone are absent. The only things that matters are a value judgment (pain and suffering are bad), and the idea that things that have needs that are not met experience this bad thing.

It might be argued here that producers' duties in this regard are cases of "special duties," duties that fall on one because of one's circumstances or role in life. In some respects this is true, in so far as the objective relationship (i.e., ignoring emotional aspects) of a farmer to his animals is similar to the paradigm case of special obligation, i.e., parental duties. In both cases (i.e., farmer and parent) one has other beings with needs under one's charge, is responsible for their well-being, and in both cases, the being under one's charge is unable to provide for his or her own needs. Hence, someone else must do it, as both a practical and moral matter. It seems that on the basis of Singer's argument and the nature of "special duties," producers have a moral duty to get their animals to Point D on the curve (in addition to a good self-interested reason to act on this duty). The key point to remember, however, is that at this point we are talking only about "minimal" needs satisfaction: we have not considered whether additional needs (past B) morally must be met, just as we have not considered whether a parent's special duties demand buying a car for the 16-year old son (although the sacrifice part may have play in this case).

But do producers have moral duties to extend "well-being" beyond B, to C or some point in between? I think the answer here is that, "it depends." First, there is the matter of the Plateau itself. As a quasi-empirical construct, one issue is whether it is really a plateau: are increments along the route from B to C really cost-free? Are there hidden costs? Are the animals really better off in some demonstrable way? For example, Grandin (1989), and Curtis and Stricklin(1991), among others, have presented evidence over the years that swine health is affected by several environmental and behavioral stressors. Is removing these stressors simply a move up the A section or the curve, or is this post-B? USDA's and NIH's various rulings on providing toys and social stimuli for research primates: are these based on pre-B or post-B considerations? Suffice it to say that while it is may be true that producers have moral duties to act so as to move their animals beyond B, we cannot make a firm judgment about that at this juncture.

But what about other people, i.e., not producers? What moral duties do they have in this regard?

Ever since Kant, philosophers have notes that moral duties are "universalizable," that is, their logical structure is such that if they are moral duties, they are duties everyone has. On the face of it, this might suggest that non-producers do not have the needs-based duties described above, since non-farmers can't act on producers' special duties. Special duties, recall, are not "universal": they apply only under special circumstances. The way out of this problem, of course, is to recognize that "universalizable" and

“universal” are not the same: While not everyone can act on farmers’ duties, IF one were a farmer, and IF one could prevent/remedy pain/suffering without sacrificing anything of moral significance, THEN one would have the kinds of special duties farmers have. This is just the same as saying that, even though I am not a parent, IF I were, I would have the special duties toward my children that actual parents have toward theirs.

But let us go one step farther. While we have been discussing duties toward animals, we must not forget that people have moral duties toward each other as well. And, along with the typical duties such as doing no intentional harm to persons or their property, not lying, caring for the sick, etc., there is a moral duty we have to support and encourage others when they perform their moral duties, and blame and chastise them when they fail to act morally. This would imply, then, that non-producers have a moral duty (and right, for that matter) to support, encourage, and even praise producers when producers act on their moral duties toward animals, and conversely, blame and chastise producers when they do not. It has unfortunately been the case that much of the ethical talk about farm animal production by “outsiders” to the industry has been of the latter variety: blame, chastise, and ultimately, try to get legislation passed to force producers to act on what some outsiders perceive to be producers’ moral duties toward animals. Certainly, giving credit or praise for individual producers or sectors of production agriculture for having worked to improve farm animals living conditions – satisfying more of their needs – has been scarce. I would argue that it is non-producers’ moral duty to give such credit when it is due. For many, this may mean actually learning something about farm animal production.

Effort

In philosophical ethics, actions are judged to be right or wrong (or permissible). Since permissibility is rarely discussed, philosophical ethics has been locked in a what seems a binary mode, good/bad, right/wrong, black/white. Only recently have philosophers begun exploring alternatives to this framework. Returning to ancient Greek philosophical roots, thinkers such as MacIntyre (1984), Oakley (1996) and Trianosky (1997) are now exploring notions of virtue, or “excellences of character,” to see whether these ideas actually fit our real-world moral experience better than the black-or-white, right-or-wrong orientation. As a result of these virtue explorations, many philosophers now think about a continuum of good actions and good character traits, all of which are “good” although some might be better than others. Possessing a virtue is a matter of degree. Most people can be truly described as fairly virtuous (and certainly better than those who are dishonest, self-centered and greedy). But virtuous people still have their blind spots -- little areas where they do not act for the reasons one would expect. Thus, although one may pursue “the virtuous life,” few – we would call them saints – ever achieve it. Nevertheless, this does not undermine the fact that we might have a moral duty to try.

The resurrection of “virtue theory” has highlighted the fact that conceiving of morality in terms of character traits has both its strengths and weaknesses, however. Among its strengths are the idea that moral actions can not all be “codified” in rules specifying right/wrong, indeed, that there are some actions that are judged to be morally praiseworthy on the basis of how they improve one’s character or the quality of life of a community. The notion that “the good life” is more than simply a life of following rules (e.g., respect rights, maximize well-being) is another positive feature of virtue ethics. There are weaknesses, nevertheless. As even MacIntyre admits, virtues – what is conceived as conducive to achieving the good, ethical life – are culturally relative. “Excellences” are always framed in terms of community values, and since communities vary over values, these excellences vary as well. This appears to violate the “universalizability” condition that everyone similarly situated has the same moral duties, although the case can be made that “similarly situated” might imply “being a member of culture X with Y set of virtues.” We need not pursue this further here.

What virtue ethics can bring to our discussion of moral duties to animals (and duties to humans) is the notion of “moral effort.” As noted above, part of virtue ethics is “practicing the virtues” as we strive to be saint-like. Striving is a key element of that system. I want to suggest here that one of the ways we can answer the question concerning how far animal producers and others must go in satisfying animals’ needs (and move along farther along the well-being curve) is to focus on the “morality of striving” or morality of effort.

Before pressing any farther with this notion, a caution needs to be heeded: effort is not the same as intention. There is a branch of ethics which holds that it is the intention of an actor that counts in judging whether the actor’s actions are morally praiseworthy or blameworthy. Only “pure” (or perfect) intentions to act morally make an action a morally praiseworthy one. There may be morally good actions to perform, but if an agent performs them for show, or out of self-interest, etc., they do not count as truly moral actions.

In contrast, effort means intention *plus* actually doing something to make something happen. In the case we are discussing, it means *trying* to meet animals’ needs along the well-being curve (enhancing well-being). And it may imply that there are morally good things to do that are, strictly speaking, not moral duties, but actions which have moral significance, are praiseworthy, and even which, over time, might become moral duties. The concept of supererogation, that is, acting “above and beyond the call of duty” may be relevant here. Certainly supererogatory acts cannot be duties; they are, however, actions that we praise, emulate, and in some cases tangibly reward (e.g., Medals of Honor). In the current context, the actions I am describing may not be supererogatory in a strict sense – e.g., uncommon acts of extreme courage or kindness. But with some weaker sense of “above and beyond the call” in the background, I believe we are now in

a position to begin to identify some of these actions and the effort level/activities and the practical philosophy (or philosophy of action) they represent.

Table 1

Practical Moral Philosophy	Effort Levels/ Activities
Moral Leadership (ML)	Concerted effort; careful attention to actions and consequences on animals; active implementation of high well-being standards; substantial experimentation; proactively anticipating possible lapses; proactively anticipating “new” social demands; educating by example
Moral Progressivism (MP)	Some effort to lead; attempts to grapple with full range of issues beyond minimal well-being requirements; proactively anticipating possible lapses; anticipating new social demands
Moral Minimalism (MM)	Attention to requirements; act on requirements; advance planning for possible new requirements
Moral Obstructionism (MO)	No action other than defensive action re: actual and possible requirements; legal resistance if necessary

Adapted from MacAdam, 1973

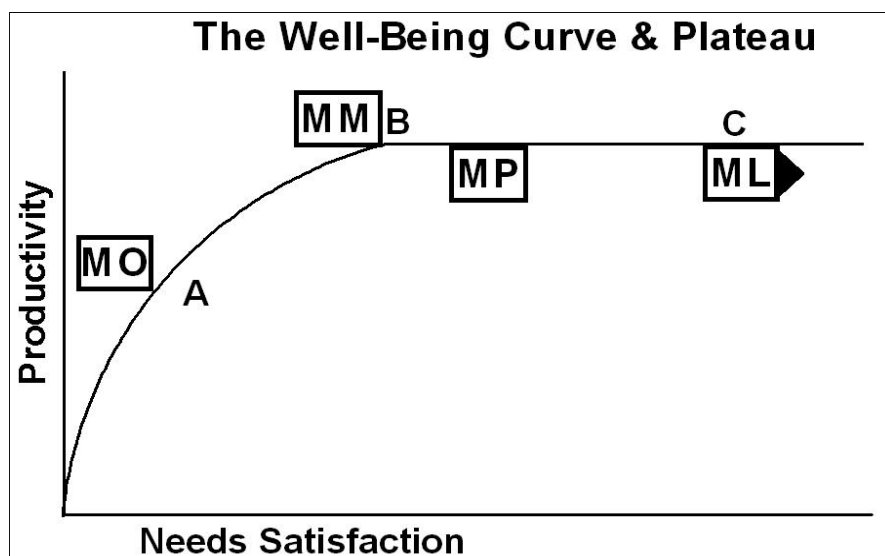
In Table 1, I present a rough categorization of a practical philosophy of effort levels that can be useful in thinking about how farm animal producers (and others, for that matter) might regard such things as current legal requirements regarding treatment of farm animals, and other possible scenarios which might imply adopting Humane Production Standards, requiring Federation of Animal Science Societies (FASS) Certification, or other well-being-enhancing management guidelines or new technologies.

As we can see, Moral Leadership is the category most “saintly,” if we were to use virtue language. Conversely, Moral Obstruction represents the philosophy or resistance to strengthening farm animal well-being measures, resistance to current farm animal protection laws and regulations, and perhaps even rejects altogether the notion that humans have moral duties to animals. If we were to chart these categories against the graph representing the Well-being Plateau, we could, I believe see the implications for animal well-being itself from these various effort levels. Consider Figure 2. Moral Obstructionism might find itself placed on the up-sloping line indicated by Point A, Moral Minimalism at the point where the line begins to flatten

out, Progressivism at Point B and moving to the right, and Leadership at C and perhaps even experimenting with going beyond C. Perhaps this placement represents only where along the curve those who would consider themselves Leaders or Progressives are trying to be, that is, the effort level and well-being consequences toward which they are targeting their efforts. Nevertheless, this mapping can again be useful. If, at a given effort level, producers can affect their animals' "place" on the curve, then even if explicit and direct moral duties toward farm animals stops at, say, Point B, there are still morally relevant reasons why someone might want to aspire to engage in Progressive or Leadership efforts. It is, after all, a matter of meeting more of animals' needs or even or better meeting needs already being minimally met.

Choices

One can imagine several reasons an individual producer might choose to adopt one of these practical moral philosophies. In the case of the Obstructionist, perhaps the perceived costs of complying with even current standards are higher than perceived benefits. Perhaps the individual lacks sound scientific information regarding the possibility that well-being enhancements might correspond to increases in productivity. Perhaps the Minimalist fears that additional requirements will drive up costs, as regulators impose standards and reporting requirements that appear to be beyond the individual's capacity to meet. In both of these cases, it may be that the way in which the producer manages his/her animals is the way in which they have always been managed, and there appears no good reason to change – resistance or begrudging acceptance just traditional responses to rules and regulations imposed from without.



Why, however, might a producer choose to adopt a Progressive or even Leadership philosophy regarding the treatment of his/her animals? This reflects the question, "Why should I be moral," though now with the added dimension of "Why should I do more than what minimally morally required?" Philosophers have long sought to establish that there are, ultimately, self-interested

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reasons for acting on moral duties. The standard argument has been that I do not abide by the demands of morality, I give license to others to not abide by them as well. The potential lapse into anarchy, or at least a very unpleasant situation, suggests that each of us as a stake in upholding and abiding by a set of moral rules that establish duties to each other. With morality, we are civilized; without it, we are savages. But the difficulty here is that we are talking not about duties people have toward each other, but duties people have toward animals. There is no

“social contract” that exists between humans and animals, unless one interprets Biblical statements regarding stewardship as implying some contract – which is, in my view, too far a conceptual stretch. We can behave cruelly toward animals with little repercussions in terms of our self-interests as humans (although the correlation between minimally-enhanced well-being and productivity might suggest some self-interest in being at least a Moral Minimalist). As stated above, however, the “Why be moral to animals” question can be answered by appeal to their needs and our circumstances. The question as “Why should I do more than the moral minimum?” still has no straightforward answer.

Nevertheless, there may reasons to believe that one should do more than what is minimally required. There are self-interested reasons for doing so. Much like businesses that adopt codes of ethics or engage in acts of corporate philanthropy, animal producers might become progressives because it is good public relations. Certifying, then advertising a commitment to progressive practices on labels or in marketing campaigns can help differentiate a product for those consumers who are more concerned about animals. Humane Production Standards might do for certain niche markets what Certified Organic has done for others. Even Moral Leadership might have a marketing advantage, the way the few producers of Fair Trade Coffee enjoy a particular status among some consumers.

Even without a direct self-interest angle, there still might be reasons producers over beyond the minimums to aspire to Progressive or Leadership status. One cannot rule out a rational (or even irrational) desire to “be virtuous.” Some business leaders engage in socially responsible actions because of the moral commitments made by CEOs or Boards of Trustees to make society a “better place.” Some see moral action as a calling, and being in a position of economic (and sometimes political) power, they go beyond the minimum to fulfill their calling. We need not enumerate all the reasons why animal producers might embrace a Progressive or Leadership philosophy regarding efforts to enhance animal well-being, as a matter of their felt moral duties toward animals. Let us just say that some do, and that some would undoubtedly like to.

Expectations

Expectations play a role in our decisions to act on our moral duties, as they do on decisions about going beyond minimum moral requirements to do good (even if not obligatory) things. Certainly the expectations of one’s immediate circle matter: family, friends and neighbors matter. The larger community of (sometimes competing) producers impacts moral decisions. The decision to become a Moral Leader is in part a decision to set an example for others in the business. And, the larger society impacts us as well. Social expectations are a key factor in the establishment of laws and regulations, and are significant determinants of the behavior of markets.

Social expectations toward animal agriculture have varied widely over the years, from near apathy to the current interests in free range, organic, fair trade, and humane agricultural products. Animal producers and animal scientists have been wise to attempt to inform the public about the state of animal agriculture in the U.S. In many cases they have not gone far enough, and in some cases, society’s concerns have been dismissed as ignorant or irrational. However, as non-agricultural interests increasingly have the ear of legislators and policy-makers, policies reflective of expectations perceived as hostile to animal agriculture are increasingly being

fathomed. Some political battles have been joined. But out-and-out political warfare has not broken out.

Table 2

Practical Moral Philosophy	Effort Levels/ Activities
Moral Fanaticism (MF)	Concerted effort; careful attention to actions and consequences on animals; active calls for higher well-being standards; actively anticipating possible lapses; actively creating new social demands; attempting to force the above on everyone
Moral Leadership (ML)	Concerted effort; careful attention to actions and consequences on animals; active implementation of high well-being standards; substantial experimentation; proactively anticipating possible lapses; proactively anticipating “new” social demands; educating by example
Moral Progressivism (MP)	Some effort to lead; attempts to grapple with full range of issues beyond minimal well-being requirements; proactively anticipating possible lapses; anticipating new social demands
Moral Minimalism (MM)	Attention to requirements; act on requirements; advance planning for possible new requirements
Moral Obstructionism (MO)	No action other than defensive action re: actual and possible requirements; legal resistance if necessary

The fact that political warfare is always a possibility attests to the existence of one additional practical moral philosophy (if it can be called that). Table 2 adds Moral Fanaticism to the mix, and displays what efforts it calls for. It might be argued that Moral Fanaticism does not belong in this grouping of effort levels, as Fanaticism is in some respects outside “common morality.” However, it can be argued that Moral Fanaticism exists as the pathology of Moral Leadership. While Moral Leadership means striving to reach the “saintly” level (while recognizing that few ever reach it), the fanatic acts as if he or she has already attained the saintly level – certainly he/she possesses a high degree of moral certainty. And rather than serve as a role model, the fanatic judges others immoral unless they act as the fanatic believes they ought to. There is an old aphorism: “The *perfect* is the enemy of the *good*.” This sums up the difference between one who tries to act on his or her moral duties and beyond, and one who demands perfection from others.

There is little doubt that fanaticism exists in the real world of politics, religion, and other social arenas. Moral philosophers have grappled with how the rest of us should respond. Rawls (1971) classically speaks of our moral duty to “tolerate the intolerant,” and Hare (1981) analyzes at length the “logic” of the fanatic’s moral thinking. One conclusion we can draw from both these

analyses is that a fanatic can not be “defeated” through reasoned argument. Indeed, we are often even unable to demonstrate to the fanatic that his/her expectations are at best unrealistic, that no one can reasonably expect that all others will act exactly as one does or one wants. Instead, how Rawls suggests we deal with the fanatic is not to challenge the *content* of his or her demands, but instead to challenge the *means* the fanatic employs to get others to meet his or her demands. For example, if the fanatic uses force, name-calling, smear tactics, or worse, the appropriate response is not the challenge what the fanatic wants to have us do, but the unethical nature of force, lies and smear tactics. And fanatics’ attempts to impose, through law or public sentiment, moral standards above those of our minimal moral duties is itself of questionable morality. If we have duties to respect others’ efforts to act on their duties, disrespecting those others is wrong. Certainly, if the Obstructionist is not only obstructionist, but inhumane as well, it is not only his but our moral duty to put this to a stop: this is why we have laws, in particular animal anti-cruelty laws. In any event, people must be allowed to act morally because of choice, not force. The same is true for a person’s commitments to give a little more, to be progressive, to take on leadership. But these cannot be legislated, and fanatics’ attempt to do so must not only be condemned, but fought against vigorously.

Conclusion: The Real World

It would be tempting to characterize the potential battles over animal ethics in terms of a clash between Obstructionists and Fanatics. Certainly, animal producers occasionally have been portrayed as Obstructionists by some animal activist groups, and animal producers and scientists have occasionally portrayed activists as Fanatics. I think this characterization is an unfortunate caricature.

In fact, if the analysis presented here has merit, it illustrates that a major difference between animal producers and activists concerns not whether we have moral duties toward animals, but what effort level constitutes the morally acceptable minimum.

Consider Fox’s (1983) welfare concerns associated with dairy production:

- reduction of quality and quantity of individual attention in larger herds
- transportation of injured and sick animals to slaughter
- dehorning of calves with caustic chemicals, with or without anesthetic
- prolonged stanchion tying of cows, especially without exercise
- need for separation of cow and calf
- neglect of unwanted bull calves
- raising replacements in individual hutches rather than in groups
- confinement of veal calves in small crates
- failure to use welfare-related research knowledge
- production-related susceptibility to disease and metabolic disorders (as cited in Arave & Albright, 1998)

Each of these concerns pertains to some set of needs dairy cattle are presumed to have. As I read this list, the difference between what an activist might say and what a producer might say is perhaps a matter of degree: an extreme activist may want all of these concerns addressed, all at once, in order for a producer to have satisfied the demands of morality – in other words,

approaching perfection. A producer, to the contrary, might argue that “welfare related research knowledge” shows that cow-calf separation creates no significant stress, de-horning without anaesthetic has no negative impact on the animal, or that bull calves are no longer “neglected.” In fact, we can imagine a Progressive producer maintaining that the more “inhumane” actions toward the animals – e.g., veal calf confinement – are in the process of being re-thought, the technology re-engineered, etc. The point is that, while there may be some differences in what sorts of treatment activists and producers think are morally objectionable, the difference might come down to whether or not activists perceive producers as “doing enough.”

Certainly, among the animal activists are those who would deny producers their right to make a living in animal agriculture. Most subscribe to the rights philosophy, and take a black or white approach to moral duties. People for the Ethical Treatment of Animals (PETA) is just one notorious example of this, and sometimes PETA appears to exhibit the characteristics of Fanaticism. Again, if one cannot rationally deal with the Fanatic, the best step is to show others the nature of his or her fanaticism. In PETA’s case, it might only need to be shown that taken to its logical end, its philosophy would be imposed on everyone regardless of their choices, thereby violating duties we have to each other regarding noninterference. PETA aside, most animal activist organizations support the efforts of producers, producer organizations and animal scientists in attempting to institutionalize an effort level beyond Obstructionism, and encourage self-determination by producers to aspire to higher effort levels.

What does this say for both philosophical pronouncements and specific certification programs and production standards? Philosophically, it appears that producers and those concerned with humane treatment can come together with a statement of principles. Consider the statement of the “five freedoms” crafted by a Canadian alliance of producers and concerned citizens (Alberta Farm Animal Care Association, 1993):

“Farm animals are entitled to . . .

- Freedom from thirst, hunger and malnutrition - by ready access to fresh water and a diet to maintain full health and vigor
- Freedom from discomfort - by providing a suitable environment including shelter and a comfortable resting area
- Freedom from pain, injury and disease - by prevention or rapid diagnosis and treatment
- Freedom to express normal behavior - by providing sufficient space, proper facilities and company of the animals own kind
- Freedom from fear and distress - by ensuring conditions that avoid mental suffering

Reviewing the scientific literature on animal well-being, it is clear that scientists and producers have been attempting to practically respect these “freedoms” – again, associated with needs – by studying and implementing changes in management practices and technologies used in animal production that would impact these freedoms. How far American producers have come in adapting to a new philosophy by striving to achieve even greater levels of well-being (again, to reach Point B on the Well-Being Curve) is an open question. Certainly there remain Obstructionists and Minimalists out in the countryside. But there are those that have aspired to be Progressive and even some who have attempted Moral Leadership in production agriculture.

Does what I have discussed here support the idea that producers have a moral duty to adopt a code of ethics which goes beyond the moral minimum? I think not. It does however, suggest that there are good things to be done even if not morally required. In any event, to the extent that animal producers try to fulfill their moral duties to animals – if not beyond – it is the moral duty of the rest of us to give credit, praise, and encouragement. Rather than point out the remaining “blind spots” of those would be otherwise virtuous, we should rejoice at the higher levels of virtue to which others aspire. This is part of the social contract humans have with each other.

References

Alberta Farm Animal Care Association, 1993. Assessment of Animal Welfare: the Five Freedoms <http://www.afac.ab.ca/fivefreedoms.htm>.

Arave, C. W. & J. L. Albright, 1998. Animal Welfare Issues: Dairy. Animal Welfare Information Center Bulletin, Fall. Vol. 9, no. 1-2 .

Curtis, S. E.,1993. Variations in U. S. Animal Production Systems: Current Trends and their Impacts on Animal Well-Being and the Economics of Production. In Food Animal Well-Being. Conference Proceedings and Deliberations. USDA & Purdue University Office of Agricultural Research Programs. West Lafayette IN.

Curtis, S. E. & W. R. Stricklin,1991. The Importance of Animal Cognition in Agricultural Animal Production Systems: an Overview. Journal of Animal Science 69:5001-5007.

Fox, M. W., 1984. Farm Animals -- Husbandry, Behavior and Veterinary Practice: Viewpoints of a Critic. University Park Press, Baltimore, MD.

Fox, M. W. ,1983. Animal Welfare and the Dairy Industry. Journal of Dairy Science 66:2221-2225.

Grandin, T., 1989. Behavioral Principles of Livestock Handling. The Professional Animal Scientist 5. 1-11.

Hare, R. M., 1981. Moral Thinking. Clarendon Press, Oxford.

Lay, D., 2003. Summary of Assessment Strategies. In R. Reynnells, ed., The Science and Ethics Behind Animal Well-Being Assessment. Future Trends in Animal Agriculture. USDA, Washington DC.

MacAdam, T. W., 1973. How to Put Corporate Responsibility into Practice. Business and Society Review 6.

MacIntyre, A., 1984. After Virtue. Notre Dame University Press, South Bend IN.

Oakley J., 1996. Varieties of Virtue Ethics. Ratio, vol. 9.

Rawls, J., 1971. A Theory of Justice. Belnap Press, Cambridge MA.

Regan, T., 2004. *The Case for Animal Rights*, 2nd edition. University of California Press, Berkeley.

Reynnells, R., ed., 2003. *The Science and Ethics Behind Animal Well-Being Assessment*. Future Trends in Animal Agriculture. USDA, Washington DC.

Reynnells, R., ed., 2002. *Standards for Food Animal Production: Status, Well-Being, and Social Responsibility*. Future Trends in Animal Agriculture. USDA, Washington DC.

Rollin, B., 1995. *The Frankenstein Syndrome*. Cambridge University Press, Cambridge UK.

Singer, P., 2002. *Animal Liberation*. Harper Collins Publishers, New York NY.

Singer, P., 1972. *Famine, Affluence and Morality*. *Philosophy and Public Affairs* 1.

Stricklin, R., 2003. *Assessment of Animal Welfare: A Matter of Ethics*. In R. Reynnells, ed., 2003. *The Science and Ethics Behind Animal Well-Being Assessment*. Future Trends in Animal Agriculture. USDA, Washington DC.

Thompson, P. B., 2004. *Animal Rights, Animal Welfare, and Animal Well-being: How to Communicate with the Outside World*. In R. Reynnells, ed., *Local and Global Consideration in Animal Agriculture: The Big Picture*. Future Trends in Animal Agriculture. USDA, Washington DC.

Thompson, P. B., R. Matthews & E. van Ravenswaay, 1994. *Ethics, Public Policy and Agriculture*. Macmillan, New York NY.

Trianosky G. V., 1997. *What is Virtue Ethics All About?* In D. Statman, ed., *Virtue Ethics*. Edinburgh University Press, Cambridge UK.

Historical Perspective of Laboratory Animal Care Assessment and Accreditation and the Relationship to Food Animal Production

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Association for Assessment and Accreditation of Laboratory Animal Care International

This year, 2005, marks the Association for Assessment and Accreditation of Laboratory Animal Care International's (AAALAC's) 40th anniversary. Incorporated in 1965 as the American Association for Accreditation of Laboratory Animal Care, AAALAC International today stands as the only organization that offers accreditation of animal care and use programs, with over 675 organizations and institutions in 26 countries having achieved full accreditation status. A major factor in AAALAC's success has been the accreditation process set in place 40 years ago, a process that was chosen as the model for the latest organization to enter the accreditation field, the Association for Accreditation of Human Research Protection. From its inception to the present, those who charted our direction and led us on the course of growth passed many milestones that, as we examine them with the benefit of hindsight, were keys to AAALAC's success.

Incorporation as a not-for-profit, 501(c)(3) educational organization in 1965 was actually the culmination of over 10 years of activities in the area of laboratory animal care that, again in retrospect, were setting the stage for AAALAC's formation. In 1949, five veterinarians involved in managing laboratory animal facilities in the Chicago area began meeting monthly to exchange information and experiences. Recognizing the value of their exchanges, they formed the Animal Care Panel (ACP) in 1950 and held the first annual meeting later that same year. One of the many ideas considered during the ACP's formative years was an accreditation program for animal care and use. The post World War II era saw an enormous increase in scientific research, driven in large part by the establishment of the National Institutes of Health (NIH) and the subsequent system of taxpayer-funded, NIH mediated research grants. Many of these research grants involved animals, and the pioneers in the ACP recognized that research animal care and maintenance practices could have a significant effect on the scientific results obtained through their use.

When, in 1961, the Animal Facilities Certification Program was officially begun under the auspices of the ACP, one of the first orders of business was to determine what standards would be employed in evaluating and ultimately certifying these programs. Over the next two years, with support from the NIH, the Federation of American Societies for Experimental Biology, the Association of American Medical Colleges, the American Heart Association, the New York State Society for Medical Research and the Medical Research Association of California, the first set of standards was produced in 1963, entitled the *Guide for Laboratory Animal Facilities and Care*. Subsequent editions of these standards, now the *Guide for the Care and Use of Laboratory Animals (Guide)*, have been developed by the Institute for Laboratory Animal Research (ILAR), a component of the National Academies of Sciences' National Research Council. This separation of the development of standards from the evaluation of an institution's adherence to those

standards was a conscious decision of AAALAC's founders. The *Guide* has been revised six times, most recently in 1996, and preliminary discussions regarding another revision were begun by ILAR in 2005.

It is noteworthy that AAALAC was established and had already accredited 37 animal care programs before the first federal Animal Welfare Act (AWA) became law in August 1966. The other federal law pertaining to laboratory animal care and use is the Public Health Service (PHS) Act, which first addressed this area in provisions included in 1985 amendments to the act.

All organizations that use warm blooded animals (with some notable species exceptions) in research, teaching or testing must register with the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), comply with AWA regulations and be subject to annual unannounced inspections by APHIS personnel. The current AWA regulations were developed through a (rare) close interaction between the APHIS and the U.S. Department of Health and Human Services (DHHS) that was directed by the 1985 amendments to the AWA. The purpose of this legislative directive was to ensure consistency between the animal welfare requirements of the two federal agencies principally responsible. The result of extensive consultations, involving the author as the DHHS representative, was a set of regulations that very closely mirror the PHS Policy on Humane Care and Use of Laboratory Animals (Policy).

All organizations that employ live vertebrate animals in activities that are supported by the PHS (including primarily the NIH, but also the Food and Drug Administration and Centers for Disease Control and Prevention) must demonstrate compliance with the provisions of the 1985 amendments to the PHS Act by following the PHS Policy, including the submission for approval of a written Animal Welfare Assurance by the NIH Office of Laboratory Animal Welfare. For specific standards to be followed, the PHS Policy refers to the same *Guide* used as the basic AAALAC International standard for accreditation. As noted above, the AWA regulations are in nearly all instances completely consistent and congruent with the PHS Policy, including consistency with the more specific provisions of the *Guide*.

Agricultural research (i.e., so-called "food and fiber" research) is specifically excluded from the AWA. Additionally, such research is rarely, if ever, funded by the PHS. As a result, agricultural research may be conducted without the necessity to follow the principal federal animal welfare requirements. Fortunately, in 1999 the Federation of Animal Science Societies (formerly Federation of American Societies of Food Animal Sciences or (FASFAS) published the First Revised Edition of the *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (Ag Guide)*. Initially published in 1988, the *Ag Guide* has become the major reference for academic programs in this area, and is the standard used by AAALAC International in assessing agricultural research and teaching programs.

From this background it is apparent that the standards for laboratory animals and for agricultural animals used in agricultural research are essentially contained in three documents: the AWA regulations, the *Guide* and the *Ag Guide*, with the first two being very similar in specific housing and care standards. Examining the history of these documents, and looking for similarities in the application of animal welfare standards to an extremely wide diversity of species, may provide insights into possible approaches and applications in the area of food animal production.

In reviewing the history of these standards, two features stand out prominently as major factors in their general acceptance by those affected. The first is that the desirability or need for standards was recognized and acted upon by those affected parties. The accreditation system still used by AAALAC International was the result of the efforts of laboratory animal veterinarians on the Animal Care Panel, with all editions of the *Guide* having been developed and promulgated by laboratory animal and other scientists whose care and use of animals would fall under its provisions. While it is true that animal welfare organizations have been actively involved in focusing the public's – and to some extent the scientific community's – perceptions and actions in this area, users have been the key players in establishing the rules. Veterinarians and the scientific community in large part see the requirements of the AWA regulations as reasonable and practical, a fact attributable in to a significant degree to their reliance on *Guide* standards in the areas of animal maintenance and husbandry, veterinary care and program administration. Similarly, the need for and provisions of the *Ag Guide* originated from the agricultural scientists and others within the member organizations of FASFAS and FASS, with their broad voluntary implementation serving as testimony to the wisdom of this approach.

The second feature that is perhaps the hallmark of the AWA regulations, *Guide* and *Ag Guide* is their mutual reliance on performance, or outcome, standards. Performance standards define an outcome, preferably in some detail, and provide criteria for measuring the outcome, but do not limit the methods for achieving that outcome. Especially in an area as inherently subjective as animal welfare, requirements that include specific, rigid means for meeting standard provisions must be avoided. One of the problems encountered in the area of animal welfare is that, in many cases, objective data and criteria on which to base performance standards are not currently available. Notwithstanding this difficulty, the benefits of performance standards are many, but of particular importance is the flexibility they provide for implementation. Means-specific or “engineering” standards intuitively (and through experience) will almost always result in affected parties doing no more than the standards require. This restriction on innovation stifles creativity, and in the area of animal welfare, would have drastically limited the development of better or best practices.

An additional critical point regarding animal welfare standards is that they have been revised over the years to maintain currency with developments in the field. The current edition of the *Guide* dates to 1996, with a revision in the planning stages at this time. Discussions regarding the revision have included consideration of incorporating those aspects of the *Ag Guide* that are relevant to all animal care and use programs, e.g., Chapters 1 – 4 on institutional policies, general husbandry, animal health care and general physical plant topics. The field of laboratory animal science has seen many dramatic advances in the past decade, and a revision of the *Guide* is due. However, caution must be exercised when undertaking revisions to these and other standards or guidance. Specifically, when existing, longstanding guidelines or requirements appear to be meeting the welfare needs of animals, any significant changes should meet three requirements: (1) the change must be of clear benefit to the animals; (2) it should not interfere unnecessarily with the research; and (3) it should be science-based. For laboratory animal care and use standards, the latter means that new provisions should be based on the following hierarchy of criteria: (1) published data; (2) scientific principles; (3) expert opinion; and (4) experience with methods and practices that have proved to be consistent with high-quality, humane animal care and use.

The AAALAC International accreditation program provides an objective, third party assessment of laboratory animal care and use programs, employing a peer-review approach. The nationally and internationally recognized experts who comprise our Council on Accreditation are not AAALAC employees, but rather individuals who work daily in the field their peers have chosen them to evaluate. This broad expertise is critical to the success of our program and to any evaluation of whether or not a unit has achieved performance standards. Recognizing whether or not performance standards have been met almost always requires an element of subjectivity – success may be in the eye of the beholder. Professional judgment is critical in this process, and professional judgments can and often do differ. When such differences occur during an AAALAC site visit or the subsequent review process, Council members and their expert colleagues at the organization being assessed are called upon to defend their professional judgments. This process serves to amplify the basic peer review of the site visit and, most importantly, promotes the development of good or best practices rather than merely meeting the standard in a minimal way.

Part of this presentation is to relate the above experiences in laboratory animal care and use standards and evaluation to production agriculture. The overwhelming majority of other presenters here today and those of you in the audience have far more knowledge of the current state of this part of the food animal production industry, but there are some areas that the laboratory animal experience has shown may be valuable as your industry addresses approaches to enhancing animal welfare.

As someone who grew up on a small dairy farm in the Midwest, and who has retained ties to the agricultural community, I am of the firm opinion that there will never (at least not in my or my children's lifetimes) be federal regulations that deal specifically with the care and maintenance of animals by farmers and ranchers. In the absence of such direct federal oversight, pressure will continue to be applied by animal protection organizations in areas they perceive to require animal welfare enhancement. It thus behooves those in production agriculture to engage in self-assessment to determine if improvements may be warranted and to be proactive in establishing the guidelines and framework for any areas so identified.

Unlike the internal motivation that led to the formation of AAALAC International and laboratory animal care and use standards, the production agriculture certification programs in place today appear to have been initiated in large part as a result of pressure from animal activist groups. Notwithstanding this difference, the subsequent involvement of commodity groups in developing the standards which must be met for certification closely mirrors the laboratory animal example of affected party involvement in this process. To the credit of those involved in their preparation, the certification standards I have seen appear to be realistic, practical, achievable and of benefit to the animals covered. Very importantly, these standards have been, and should continue to be performance-based.

AAALAC International has been successful for a number of reasons, but underlying them all is that the process is widely viewed by accredited organizations as beneficial to their laboratory animal care and use programs. Thus, a clearly important question for those interested in adding or expanding certification programs or other external evaluation mechanisms is: Will these additional actions and costs add value? In the case of production agriculture, this "value" may be

to the animal, the producer, the consumer or the public in general. It also may be qualitative or quantitative, subjective or objective, tangible or intangible. In laboratory animal science we often use the phrase, "Good animal care equals good science." Can the same be said for production agriculture? Does good animal care equal good beef, good pork, good eggs, etc.? I believe so, but the public may need convincing; certainly the animal activist groups do.

Educational Programs

Alternative Swine Housing Educational Programs

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Introduction

Swine production facilities in the United States have adopted technological advancements in response to problems and opportunities as they arise. The first pressure was due mostly to economics. To improve feed efficiency, animals were moved into climate controlled buildings. To reduce labor costs, manure was handled as a liquid through slatted floors and feed and water systems were automated. Larger buildings were used to gain economy of scale and to increase the overall income to the producer as the profit margin per pig marketed decreased. All of these innovations helped swine producers to more economically produce commodity pork.

In recent years, environmental pressures have played a role in influencing the design of housing systems available to swine producers. Environmental legislation precipitated changes in manure handling, manure storage and building site selection.

Animal welfare and niche markets are now influencing housing selection and production practices. Niche markets are established to provide pork with attributes that some consumers view as adding quality. These fall into two main categories (Honeyman, 2005), quality attributes and credence attributes. Quality attributes claimed by many niche markets include certain genetics, taste or flavor, high quality, freshness and tenderness. These are generally not directly influenced by housing type. Credence attributes are aimed at perceived health concerns or social values of given consumers. These attributes may include antibiotic-free, growth promotant-free, no use of animal by-products in the feed, family farm raised, natural, organic, produced outdoors or with bedding, locally raised, humane rearing, known origin, or environmentally-friendly. Most of these traits are hard to quantify in the pork products but add perceived value in some markets. (Honeyman, 2005).

At first most swine producers were interested in alternative housing systems to reduce the capital investment required for swine production. Swine producers were finding that finishing buildings that held less than 400 to 600 head lacked the economy of scale and put them at an economic disadvantage over larger producers. Generally these smaller producers were willing to trade

labor, bedding costs and feed efficiency for the initial investment. As alternative housing systems became more accepted and available, niche markets developed that promoted alternative housing as a credence attribute for their markets. Many niche markets require a housing system that is different than that typically used by most swine producers for commodity pork production. These may include open pens, outdoor exposure, bedding in a solid manure system rather than a liquid manure system, a prohibition of gestation crates, and restrictions on the time that sows may be confined to a farrowing crate. Consumer perceptions associated with animal welfare concerns is influencing the usage of gestation and farrowing crates.

Swine producers needed education to evaluate their options and select the system that fit their needs and talents. Many were attracted to alternative housing systems by the lower initial cost and prospect of larger receipts as they sold to a niche market. They may have been naive to necessary management practices needed to make the system competitive. Managing pigs in an alternative housing system often requires additional husbandry skills that may not have been required in a more traditional confinement building. Producers that could manage pigs in a confinement building might find that they lack the knowledge and skill-set to manage pigs in an alternative housing system.

Producers also need assistance in evaluating niche market opportunities. They are largely unaware of the adjusted performance parameters for alternative housing systems such as poorer feed efficiency for finishing pigs or fewer pigs weaned per litter for farrowing systems. These are important factors when producers evaluate the return that a niche market may offer. Alternative production systems for niche markets, at times, will have higher production costs and producers must have the information to adequately evaluate the payback associated with required practices.

This paper outlines educational programs that focus on educating producers about alternative housing systems and what it takes to be successful.

Iowa State University's Hoop Group

In the early 1990's, innovators in the prairie provinces of Canada adapted the Japanese tunnel housing to a heavier arched hoop barn covered with a tough poly fabric cover. The Canadian hoop barns were built to withstand the temperatures and winds of Manitoba and Saskatchewan. Wheat straw was commonly used for bedding. (MWPS, 2004a)

In the mid-1990's, hoop structures started to draw the interest of small and medium size farmers that were attracted by the ease of construction and lower capital costs. About that same time, Iowa State University (ISU) constructed a hoop structure to begin investigation of performance and management of swine housed in hoop structures in Iowa. A group of faculty from various disciplines came together to form Iowa State University's "Hoop Group". The focus of the team was to answer some of the many questions that Iowa swine producers had about the system through research and demonstration.

It was apparent early that swine producers needed education about the opportunities and challenges involved in using alternative production facilities. Some producers adopted hoop structures before questions about their usage in Iowa could be researched adequately.

Education was provided to alert producers to the possible advantages and disadvantages based on the latest information. As more information became available, this was transferred to producers. The upper Midwest with its tradition of family farm-based pig production was a good place for the rapid adoption of these technologies.

The overall goal of the educational program was to provide swine producers, or potential swine producers, with the tools to make informed decisions about alternative housing systems and their usage in providing pork for niche markets. This continues and includes discussing the positive and negative aspects of various housing systems, what skills are necessary to manage the system, possible expected performance and approximate production costs associated with the various systems. Promotion of any given system was avoided. It was also found that many small to medium producers lack quality production records, making it difficult for them to truly know how their cost of production relates to the price received for niche market pork.

The educational program was delivered using several different avenues designed to meet the needs of various producers. These included presentations at various local Extension meetings, field days at research and demonstration farms, formal publications (MWPS, 2004a-d), informal education through research reports and popular press, a web page (ABE, 2005), and conferences for producers and scientists.

Even before the Hoop Group received research funds from USDA and the Leopold Center for Sustainable Agriculture, producers were provided with basic discussions of advantages and disadvantages of hoop structures that they should consider. These were provided in an early addition of MWPS, 2004c. Advantages included:

1. Low capital investment;
2. Ability to use for other purposes;
3. Uses solid bedding;
4. Structure can be built quickly;
5. Uses very little, if any, energy;
6. Qualifies for some niche markets.

Disadvantages included (MWPS, 2004c):

1. Observing animals in a large pen is more difficult;
2. Poorer feed efficiency in cold weather;
3. Additional labor is needed;
4. Requires large amounts of bedding;
5. Can not exclude some animals and birds that may carry disease.

Research conducted by the Hoop Group fed new information into the Extension program as it became available (Honeyman and Harmon, 2003; Lay et al., 2000). Some of the questions addressed came directly from producer advisory groups and included information on:

1. Diet formulation;
2. Bedding management;
3. Manure nutrient value and handling;

4. Complete economic analysis;
5. Management of the winter building environment;
6. Space needs;
7. Heat stress management;
8. Typical health problems;
9. Composting mortalities using spent bedding;
10. Sorting and handling pigs at marketing; and
11. Expected differences in odor and ammonia compared to confinement buildings.

As the usage of hoops became more accepted, questions about use for gestation and farrowing were fielded. Research projects, demonstrations and education were undertaken in this area as well. Many producers in Iowa are using hoop structures for housing gestating sows. There is also growing interest in hoop usage for dairy and beef production with lesser interests in horses, sheep and other species.

Iowa State University's Hoop Group has been responsible for many outcomes and impacts from the research and educational program. A few of the outcomes and impacts have been tabulated based on the hoop group's activities. These include:

1. Hosted a conference "Swine System Options Conference" in 1999.
 - a. Attendance of 350.
2. Hosted more than 16 field days and numerous tours.
 - a. Over 4000 in attendance.
3. Published more than 63 Extension articles or research reports, 12 journal articles and numerous popular press articles. Many are on ABE (2005) or IPIC (2005) websites.
4. Hoop group members have been invited/selected speakers at numerous (more than 25) US and international swine production conferences.
5. Hosted a conference, National Conference on Hoop Barns and Bedded Systems for Livestock Production, in September 2004.
 - a. Approximately 330 individuals attended from 10 countries and 14 states.
 - b. Seven educational bulletins were available in a notebook for the meeting (MWPS, 2004a-g). Nearly 3000 total copies have been distributed to date.
 - c. A website with presentations was developed (ABLS, 2005).
6. An international scientific symposium held in conjunction with the September 2004 conference drew more than 50 people.
7. Since 1996 more than 2200 hoop barns have been constructed in Iowa to produce swine.
8. Partnered with Practical Farmers of Iowa, a grassroots farmer group, to conduct farm visits and on-farm research related to alternative swine production systems and niche markets.
9. Recently started research and demonstration projects related to feeding beef cattle in bedded hoop barns.

Purdue University's "Sow Gestation Housing: Considering the Options"

Sow housing has been of particular concern to many people. The general populace has become concerned about the welfare of sows, particularly of those kept in gestation crates. Producers, who have always been concerned with the welfare of their sows, want to evaluate the options of

different housing systems as their facilities reach the age that they will need replacing. They are also concerned about the impacts that future legislation concerning gestation crates may have on their current facilities.

Purdue University faculty have developed a sow gestation housing education program through a grant with USDA/CSREES. The DVD/CD educational package includes several components that use Purdue (2005a) as the point of delivery. The package includes the following:

1. Conference proceedings on sow housing: Symposium on Swine Housing and Well-Being including talks on:
 - a. Intensive and Extensive Confinement Management Practices and Their Effect on Animal Well-being;
 - b. Niche Market Development;
 - c. Certification Programs;
 - d. Consumer Perspectives.
2. Sow housing care and welfare bibliography;
3. DVD/CD video features the presentations made by various academics on different sow housing systems (stalls, small groups, large groups, and hoops/extensive systems).
4. DVD/CD video "Sow Gestation Housing: Considering the Options" (Purdue, 2005b) features visits to five farms using different methods to house sows. These include stalls, small pens, large groups with electronic sow feeding systems, outdoor system, and a hoop system. Producers describe their systems and explain their decision to use a particular sow housing system.

National Pork Board

The National Pork Board sees alternative housing as an important issue to swine producers and developed a research project to address some aspects. They have sponsored educational efforts related to alternative housing as well.

The farrowing research project focused specifically on farrowing systems that meet the needs of niche markets. The concept was a small hoop inside of a larger hoop. The small hoop housed farrowing pens and was heated and bedded. Piglets remained inside this area for a week or more with the sow able to exit into the common area. Once piglets were able to "escape" the farrowing pens, sows and piglets interacted in one large lactation group. This project has been piloted on several sites and a final report will soon be available. (NPB, 2005)

NPB have included several topics on sow housing at the Pork Academy, held each year before the World Pork Expo, and at the Swine Educators Meeting that it hosts for Extension personnel and agricultural teachers at community colleges. Topics have included farrowing facility options and gestation housing design. They also funded a study to examine the costs associated with housing options that do not use gestation crates.

Education for Teachers

The Midwest Plan Service (MWPS) pamphlets, which were developed during the summer of 2004, were used as a basis for the development of a series of lessons and PowerPoint visual

support materials for vocational agriculture instructors and extension professionals. During the spring semester 2005, the students in a senior level course at ISU that dealt with methods of teaching in agricultural sciences and agribusiness created lessons and supporting visual aids. Their work will be used to produce materials to train students in agricultural classrooms of high schools and community colleges. The training will focus on alternative production and housing systems for life-cycle swine production

The materials will be distributed in hardcopy and electronic versions through national programs like MWPS, the National Pork Board's PIG Gateway, or vocational agriculture curriculum dissemination systems.

Summary

Alternative swine housing systems can be used effectively to address the problems of high capital costs of swine facilities, niche market requirements and animal welfare concerns. Swine producers and the public need education about the options. They should understand that removing automated equipment requires different husbandry skills than those utilized in confinement buildings. They should also be aware there are differences in production parameters which may increase operating costs and that record keeping is a very important part of evaluating niche marketing contracts. Multiple delivery methods of delivering educational programs to swine producers and stake holders are available and are successful in empowering swine producers to make decisions about housing options. Traditional extension and vocational agricultural education delivery systems coupled with new technologies of web pages and CDs plus strong partnerships with sustainable agriculture, farmer, niche market, and commodity groups has created effective education and rapid adoption of these alternative swine production systems.

References

ABE, 2005. Hoop Structures for Swine. www.abe.iastate.edu/hoop_structures/ September 4, 2005.

ABLS, 2005. Hoop Barns and Bedded Systems for Livestock Production Conference. www.abe.iastate.edu/abls. September 4, 2005.

Honeyman, M. S., 2005. Extensive bedded indoor and outdoor pig production systems in USA: current trends and effects on animal care and product quality. *Livestock Production Science* 94(102): 15-24.

Honeyman, M. S. and J. D. Harmon, 2003. Performance of finishing pigs in hoop structures and confinement during winter and summer. *J. Anim. Sci.* 81:1663–1670.

IPIC, 2005. Swine Research Reports. Iowa Pork Industry Center web site. www.ipic.iastate.edu/topics . September 4, 2005.

Lay, D. C. Jr., M. F. Haussman, and M. J. Daniels, 2000. Hoop housing for feeder pigs offers a welfare-friendly environment compared to a non-bedded confinement system. *J. Appl. Anim. Welfare Sci.* 3(1):33–48.

MWPS. 2004a. Hoops Manual. National Conference on Hoop Barns and Bedded Systems for Livestock Production. September 14, 2004. Ames, IA. 2 pp.

MWPS. 2004b. Alternative Systems for Farrowing in Cold Weather. AED-47. Midwest Plan Service, Iowa State University, Ames, IA. 11 pp.

MWPS. 2004c. Hoop Barns for Grow-Finish Swine. AED-41. Midwest Plan Service, Iowa State Univ., Ames, IA. 24 pp.

MWPS. 2004d. Hoop Barns for Gestating Swine. AED-44. Midwest Plan Service, Iowa State Univ., Ames, IA. 20pp.

MWPS. 2004e. Hoop Barns for Beef Cattle. AED-50. Midwest Plan Service, Iowa State University, Ames, IA. 15 pp.

MWPS. 2004f. Hoop Barns for Dairy Cattle. AED-51. Midwest Plan Service, Iowa State University, Ames, IA. 16 pp.

MWPS. 2004g. Hoop Barns for Horses, Sheep, Ratites and Multiple Utilization. AED-52. Midwest Plan Service, Iowa State University, Ames, IA. 7 pp.

NPB. 2005. National Pork Board web site. www.porkboard.org. September 6, 2005.

Purdue. 2005a. Purdue Gestation Housing. www.ces.purdue.edu/pork/sowhousing/. September 6, 2005.

Purdue. 2005b. Sow Gestation Housing: Considering the Options. DVD-AS-569. Purdue University, W. Lafayette, IN.

Educational Programs

Chicken Behavior, a Video

Karen Davis
United Poultry Concerns, Inc.

The belief that chickens bred for modern intensive poultry production have lost their natural instincts, and that they are content to live, or are only capable of living, in crowded, unstimulating cages and buildings is challenged by contemporary avian science and by the variety of natural behaviors these birds display at farmed animal sanctuaries. As biologist Marian Stamp Dawkins writes regarding the behavior of hens who have spent their lives in cages before being introduced to foraging material: "An ancestral memory of this way of life seems to have carried down the generations into the cages of our modern intensive farms so that even highly domesticated breeds have the same drive to scratch away to get their food" (Through Our Eyes Only? The Search for Animal Consciousness, 1993, W.H. Freeman, p. 153).

Based on experiments, Dawkins says that if hens who have been kept all their lives on wire floors are suddenly given access to a floor of wood-shavings or peat, they have "an immediate and strong preference for these more natural floors over the wire ones, which is all they have known until then. They dustbathe, eat particles of peat and scratch with their feet. It is not just the extra comfort afforded by a soft floor that attracts them, but all the behaviour they can do there as well" (153).

Our video, "Behavior of Rescued Factory-Farmed Chickens in a Sanctuary Setting," shows chickens at United Poultry Concerns' sanctuary racing out of their house in the morning, chomping on cabbage, pouncing on lettuce, scratching, dustbathing, and perching up high at night.

All of the birds in the video came from intensive confinement backgrounds including layer and broiler chicken operations and, in a few cases, a live poultry market. While most birds come to our sanctuary exhausted, dirty, and virtually featherless, those who survive undergo remarkable changes under the stimulus of an environment that activates their natural instincts. Contrary to the idea that chickens spend much of their time fighting and picking on each other, the birds at our sanctuary are busy with their daily occupations, including normal socialization of which the ritual "showdown" is but an occasional and short-lived exercise.

Each video scene has been selected to show a specific behavior such as dustbathing and grass eating. Each scene is labeled for clarity. For example, one scene shows a hen pecking at the face of another hen in an effort to groom (preen) the other hen's face. As a result of being beak-trimmed, the hen tries vigorously to pick off tiny particles that a hen with an intact beak could grasp with delicacy and precision. Those who are unfamiliar with the range of chicken behaviors

could misinterpret the effort shown in this scene as an act of physical aggression, when in fact it is normal social grooming behavior frustrated by an impaired beak.

The video also shows a young "broiler" hen from the Eastern Shore picking and eating grass and performing normal scratching behavior in order to show that, given the opportunity, she and other "broiler" chickens who have come to our sanctuary perform natural behaviors within the parameters of their physical genetics, including jumping on bales of straw in the evening to roost for the night.

Educational Programs

Overview of Land Grant University Courses and Educational Initiatives: Examples from Michigan State University

Camie Heleski
Animal Science Department
Michigan State University

Farm animal welfare is a societal concern. Though we may debate whether concern amongst stakeholders (ranging from consumers to producers, from animal scientists to veterinarians) is too high or not high enough, few would disagree that it is a contemporary issue with the potential to greatly influence the future of animal agriculture. Given this potential, what are Animal Science departments at U.S. Land Grant institutions¹ doing to keep their students informed and astute about animal welfare?

Example 1: Online Animal Welfare Assessment Course

Documenting the need

Out of approximately 45 Animal Science departments at U.S. Land Grant institutions, fewer than 25 have faculty members on staff who have been trained in applied ethology/animal welfare science (NCR-131, 2001). Subsequently, course offerings in animal welfare/applied behavior are likely out of step and insufficient in comparison with society's expectations for the level of animal welfare knowledge that animal science and veterinary science graduates should possess. Additionally, only 5 Veterinary College programs offer separate coursework in the area of animal welfare and 17 offer a separate course in animal behavior (of 27 fully accredited programs examined by Siegford, Waltman and Zanella, 2004).

Implementing a potential solution

Finding this overall lack of animal welfare information to be problematic, a group based at Michigan State University, and in cooperation with both U.S. and international welfare science experts has developed an online, interactive animal welfare assessment course. This project has

* A Land Grant institution is defined as an American institution that has been designated by Congress to receive the benefits of the Morrill Acts of 1862 and 1890. These acts funded educational institutions by granting federally-controlled land to the states. The mission of these institutions, as set forth in the 1862 Act, is to teach agriculture, military tactics, and the mechanic arts, not to the exclusion of classical studies, so that members of the working classes might obtain a practical college education. The mission of the land grant universities was expanded by the Smith-Lever Act of 1914 to include cooperative extension - the sending of agents into rural areas to help bring the results of agricultural research to the end users. (http://encyclopedia.laborlawtalk.com/Land-grant_university)

been primarily funded by the USDA Higher Education Challenge Grant program (#2003-38411-13464 and #2004-38411-14759). This graduate level course is currently being piloted during fall semester, 2005 with 15 students from 3 universities.

Enrolled students receive online instruction in topics essential to animal welfare such as: behavioral and physiological indicators of animal welfare, human-animal interactions, pain and suffering, ethical considerations, the interrelationship between animal welfare and economic considerations, and health parameters. Lectures have been prepared in collaboration with international experts from many institutions. Throughout the semester, students complete online problem-based assessment exercises and quizzes, along with participating in electronic discussions with their peers and instructors (Siegford et al., in press). Students are expected to develop the ability to objectively assess animal welfare for production animals, laboratory animals, companion animals, and exotic animals in captivity.

After outcome assessments are performed on this course, future directions might include: creating training tools for professional use (such as welfare assurance scheme assessors), licensing the course to other universities, developing materials for undergraduate students and youth organizations (such as 4-H and FFA), and/or developing in-depth modules on specific topics or species (Wickens, Siegford, Zanella, 2005).

Example 2: Animal Welfare Judging/Assessment Competition

The assessment scenarios utilized in the above course have been modeled from animal welfare assessment scenarios originally developed for intercollegiate animal welfare judging competition (Heleski, Zanella, Pajor, 2003).

Following the framework of traditional livestock judging competitions, four universities (Michigan State University, Purdue University, University of Guelph, and University of Wisconsin) first piloted the concept of framing animal welfare assessment with a competition format in 2002. Student participants were extremely positive about the opportunity (Waltman, Heleski, Zanella, 2002; Heleski, 2004) and the program has continued. The first three competitions were hosted by Michigan State University. The fourth competition was hosted by Purdue University, and the fifth competition is scheduled to be hosted by the University of Wisconsin.

Undergraduate students first learn background information about applied animal behavior and methods of assessing animal welfare, they learn about the different species they will be expected to assess in competition, and they learn to holistically integrate the pieces of information they are provided into an oral presentation. Most of the scenarios are presented on CD-Rom and students are asked to compare, for example, two different pig farms. The CD-Rom provides them with data about health, body condition, behavioral time budgets, evidence of abnormal behaviors, responses to human handlers, etc. In addition to individual student assessments, a team problem is also an important part of this competition. In the past, students have been asked to evaluate animal production facilities and come up with recommendations for the facility just as if they were accredited consultants. This past year represented the first time an on-farm assessment – versus an electronic, computerized assessment – was performed, with very positive feedback from the students and coaches who participated.

There is an interest in developing this model at the 4-H/FFA level, pending sufficient financial support. At least one such state-level contest has already been conducted, using information specific to horses, with positive feedback from the participating 4-Hers (Anderson, in preparation).

Conclusion

Land Grant universities will continue to play an important role in presenting students and other stakeholders with balanced, science-based, ethically examined perspectives on the issue of farm animal welfare. More programs are needed to address this need.

References

Anderson, K. In Preparation.

Heleski, C.R., Zanella, A.J., Pajor, E.A., 2003. Animal welfare judging teams - a way to interface welfare science with traditional animal science curricula? *Appl. Anim. Beh. Sci.* 81: 279-289.

Heleski, C.R., 2004. Ph.D. Dissertation. Appendix Two – Summary report from 2002, 2003, 2004 animal welfare judging/assessment competitions, pp. 69-72.

NCR-131, 2001. North Central Regional Committee for Animal Care and Behavior. Membership list; also as retrieved on January 3, 2002 from <http://www.liru.asft.ttu.edu/Collab/NCR-131/ncr.htm>

Siegford, J.M., Bernardo, T., Malinowski, R., Laughlin, K. and Zanella, A.J. In Press. Integrating animal welfare into veterinary education using an online, interactive course. *JVME*.

Siegford, J.M., Waltman, R.M., Zanella, A.J. 2004. Integration of animal welfare into the veterinary curriculum: the development of an online course in animal welfare. *Proceedings International Society for Applied Ethology, Helsinki, Finland.*

Waltman, R., Heleski, C.R., Zanella, A.J., 2002. The impact of the animal welfare judging team experience on undergraduate students. In: *Proceedings of the Regional ISAE, Quebec, Canada*, p. 28.

Wickens, C.L., Siegford, J.M., Zanella, A.J., 2005. Abstract #640. Development of a Web-based course in animal welfare. *J. Anim. Sci.* Vol. 83, Suppl 1, p. 377.

Implementation and Auditing of Broiler Chicken Welfare Standards

Click link above to see Powerpoint Presentation

Richard Lobb
Director of Communications
National Chicken Council

Appendix A

Program and Speaker Contact Information

Certification and Education Programs: Current Status of Farm Animal Welfare

September 21, 2005

Jefferson Auditorium
South Agriculture Building

Washington, DC

MODERATOR: Richard Reynnells, National Program Leader, Animal Production Systems
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8:30 - 8:45 Welcome USDA Deputy Secretary Charles Conner

8:45 - 10:15 Weighing the Costs and Benefits of Certification Programs

1. Holistic Economic Analysis
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2. What Certification Means to Consumers
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Humane Farm Animal Care

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3. What Certification Means to the Industries
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4. Q & A

10:15 - 10:30 BREAK

10:30 - 11:45 Briefing on Animal Welfare Conferences: “From Darwin to Dawkins: the Science and Implications of Animal Sentience”, 2005 meeting in the United Kingdom; and “Animal Welfare Initiatives, Needs, Regulation and Communication: Building on the Past, Preparing for the Future” the 2005 Animal Agriculture Alliance meeting

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11:45 to 1:00 p.m. LUNCH

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1:00 - 1:30 Ethical Considerations for Production Agriculture and Activist Groups

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1:30 - 2:00 Historical Perspective of Laboratory Animal Care Assessment and Accreditation and the Relationship to Food Animal Production

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2:00 - 2:15 BREAK

2:15 - 3:15 Educational Programs

1. Alternative Swine Housing Educational Package

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2. **Chicken Behavior, a Video**

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3. **Overview of Land Grant University Courses and Educational Initiatives**

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3:15 - 3:45 Implementation and Auditing of Broiler Chicken Welfare Standards

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Appendix B

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