

PROCEEDINGS
FUTURE TRENDS IN ANIMAL
AGRICULTURE
STANDARDS FOR FOOD ANIMAL
PRODUCTION:
STATUS,
WELL-BEING, AND
SOCIAL RESPONSIBILITY

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PREFACE

These proceedings provide a summary of comments provided by each speaker. They are intended to assist the reader in reviewing these opinions and organizational policy, and to obtain additional information during the presentation or by contacting the speaker. Speaker contact information is provided in Appendix A. The reader should contact the Co-Coordination (Reynnells, Brubaker, Klippen or Appleby) if there are questions, or if further information is required about the Future Trends in Animal Agriculture organization or programs.

Richard Reynnells, USDA/CSREES/PAS
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Welcome

Alex Thiermann, USDA-APHIS

I find this a crucial moment for US Animal Agriculture interests to meet in order to address common approaches and standards in food animal production. The world's animal agriculture has evolved significantly since the decade of the 50s where the effort has been on maximum efficiency of production. During this period, US animal agriculture has unquestionably been the world leader, with its vertical integration and intensive systems of production. It has provided the US consumers and consumers worldwide with abundant, safe and nutritious food of animal origin at the lowest cost. However, today we find ourselves with a new paradigm, with new challenges and opportunities. Improved standards of living in many corners of the world, as well as recent food crises in different sectors have resulted in an increased consumer involvement. Consumers are questioning the methods of food production, focusing not only on food safety aspects, but also on the well-being of the animals within these systems.

There are many new opportunities in this new era of animal agriculture. On the one hand, we have among the developed world, consumers who are willing to pay higher prices for high quality food and specialty products coming from niche markets. These demands are creating new opportunities for large and small scale production systems. On the other hand, population growth, urbanization and income-growth in developing countries are fueling a massive global increase for food of animal origin. This demand comes from the changes in the diets of billions of people. From the 1970s to the 1990s, meat consumption in developing countries has increased by more than three times the increase in the developed world, while milk consumption has increased by more than twice as much. Meat consumption in the developing countries is expected to double between 1993 and 2020 and global livestock production will be the most important agricultural sector in terms of added value by 2020.

Among the challenges of this new era, a whole series of new biosafety questions will need to be addressed. Higher concentration of livestock, increased transportation of live animals, and intensification of animal production near urban areas will require a re-examination of potential food safety hazards, incidence of zoonotic diseases, new animal health hazards, as well as environmentally sound waste management approaches.

Using an animal health example, the immense losses (\$3.5 to 6 billion) to the agriculture as well as the tourism industry in the UK resulting from the 2001 FMD outbreak are attributed in great part to the system of animal production and animal movements in the UK, and throughout most of Europe.

On a slightly different topic, consumers are demanding that we pay closer attention to the well-being of our animals. I know we are all doing this, you have taken the lead in developing guidelines for adequate production and transport and APHIS has been an active participant in this dialogue at an international level.

Another subject that needs to be considered is the introduction of alien species. The introduction of alien species, particularly in fisheries and aquaculture can have a major role in increased production; however, these species are also recognized as one of the most significant threats to natural aquatic ecosystems. As positive examples, Asia produces more of the African cichlid Tilapia than Africa (>700,000t versus 40,000 t). Chile is today, the world's second largest salmon producer, employing over 30,000 people, and in 1970 it did not have one salmon. The issue is not to ban alien species, nor to abandon regulations on their movement, but to assess the risks and benefits associated with their responsible use.

This brings me to the topic of safeguarding. National safeguarding systems must interface with international systems both proactively as well as reactively. In order to maintain an active and credible trade, we need to show our trading partners that our sanitary infrastructure meets international standards, and often has to meet even stricter national standards, and they function effectively. But we, as regulatory agencies such as APHIS must also be confident and provide assurances not only that the sanitary infrastructure in the exporting country functions effectively, but that we have the ability to detect hazards

the exporting country was not able to prevent. These could enter our country accidentally or through intentional sabotage causing severe losses to our industry and affecting our elite national animal health status. APHIS continues to be vigilant and continues to improve its monitoring and surveillance capabilities. However, for us to have the safest system, it will require all of us to continue to work jointly on this front.

In summary, in the near future, rather than strictly focusing on maximum production, we need to be focusing on optimum production systems. We need to take a more holistic approach to animal production, addressing food safety as a risk-based hazard analysis throughout the continuum from the farm to the kitchen, as well as considering the animal well-being and their environment. This may result at times in some cost increases, but it should also increase the safety, quality and overall acceptability of the products. We have been the champions and the leaders in the field for decades, and there is no reason to believe that in this new era we are not going to continue to serve as the example for the rest of the world to follow.

These future challenges are complex, and to successfully meet them requires cooperation across sectors, with optimal use of all our existing response capacities. There is a continued need at the national level for dialogue between the private and public sectors and between agencies in the government, and at an international level between standard-setting as well as technical assistance organizations.

I am proud to report that APHIS is committed to continue to serve as an active partner. APHIS has been very active in participating in the national dialogue and in representing the US interests and views in animal health as well as animal well-being discussions in international fora.

INTRODUCTION

David Brubaker and Richard Reynnells

The purpose of this meeting is to foster dialogue between all people and organizations concerned about the future of animal agriculture, particularly about how we might come together to support the development of production standards that meet the needs of animals, society, as well as those of the animal production industry. The production of food animals in a society in which most people are far removed from the realities of agriculture can be a controversial topic of discussion, and we hope to build upon our previous experiences in conducting “Future Trends in Animal Agriculture” conferences to advance significant discussion that will help to inform policy.

In March of 1989, a group of people gathered in Ocean City, Maryland to discuss ways to bring people from various perspectives together to find common ground in discussing animal agriculture. These individuals represented agribusiness associations, academia, government, animal protection organizations, and others. They established a process for the development of balanced programs to help each of us to better understand the various perspectives about how and why we produce food animals.

Over the years, there have been six Future Trends conferences, and they have attracted a diverse set of speakers and participants. At times, we may have generated more heat than light, but generally most participants have felt that they came away from these meetings with a better understanding of how others view the animal agriculture. One thing is certain: animal agriculture is now a major media and public policy concern. More than ever we need a meeting of minds between producers of all size categories, the food, restaurant and grocery industries, animal protection advocates, environmental organizations, academia, policymakers and related personnel.

This symposium is a result of a series of discussions among individuals with differing views of the present animal production system, but who share a common commitment to rational discussion, and the establishment of production standards that benefit the animals, producers and society. It is our hope that this meeting can contribute to the ongoing discussion, and that you will leave today with a better understanding of the difficulties and opportunities of production standards.

Impact and Importance of Standards: FMI-NCCR Animal Welfare Program

Jill Hollingsworth, Vice President Food Safety Programs
Food Marketing Institute

This report gives an overview of the results of almost two years of effort by the retail community working with an advisory panel of scientific experts in animal welfare to improve the care and handling of animals used for food. Although we have made substantial progress, the efforts of the Food Marketing Institute (FMI), National Council of Chain Restaurants (NCCR), and the advisory panel are not complete. This report is one in a series meant to communicate publicly the industry's progress. This is not a stand-alone document; it is to be used in conjunction with the animal welfare guidelines of the producer and processor organizations identified within this report. Information on how to contact these organizations is attached.

The issues covered in this report are important and complicated. Some recommendations contained within this report have economic implications. Some require an implementation timetable because they cannot be accomplished immediately. Some areas are still being researched to confirm that changes will enhance, not hinder, animal well-being. It is our intention to be straightforward about all of these issues in this and future reports.

Retailers, animal welfare experts, animal welfare advocates, producers, processors, and the public share the common goal that all animals used in agricultural production be cared for in a manner that takes into account their daily well-being and health. We believe this means that in addition to having ready access to fresh water and feed and adequate shelter, animals in agricultural production must be kept in an environment designed to protect them from physical, chemical and thermal abuse, stress and distress. Managers and those responsible for handling these animals must be thoroughly trained, skilled and competent in animal husbandry and welfare. Animals must be transported in a safe and appropriate manner. They must be processed humanely.

FMI and NCCR have been working with independent, expert advisors and the producer/processor community to promote "best practices" for each species that will ensure animal well-being throughout production and processing. We continue to consult regularly with experts in animal science, veterinary medicine and agricultural production to obtain objective, measurable indices for desirable practices in the rearing, handling and processing of animals for food. We continue to urge appropriate Federal and state government agencies to strictly enforce animal welfare protection laws.

FMI and NCCR believe that our efforts to-date have made, and our future efforts will continue to make, a significant contribution to enhancing the well-being of animals in agricultural production.

FMI-NCCR GOALS

FMI and NCCR merged efforts to further develop and support industry policies strengthening animal welfare with the following specific goals in mind:

Consistency across the US retail sector.

1. Implementation of practicable and attainable guidelines based on science.
2. A measurable audit process.
3. An ongoing advisory council of third party, independent animal welfare experts.
4. Improved communications across the supply chain on animal welfare issues.

THE FMI-NCCR PROCESS

During the past 20 months, FMI and NCCR have been meeting in person and by conference call with our respective retail member committees, our independent advisors and producer organizations. Our experts

have reviewed existing producer animal welfare guidelines, identified gaps and recommended specific changes, additions and revisions.

Working with our expert advisors, we created three guidance documents that recommend the process, guideline content and audit components necessary to develop meaningful and effective animal welfare guidelines. We developed these guidance documents to identify best practices and assess industry standards across animal species.

In May of 2002, our independent expert advisors met to review the revised guidelines submitted by the American Meat Institute, United Egg Producers, Milk and Dairy Beef Quality Assurance Center, National Pork Board, National Chicken Council and National Turkey Federation. This report contains the recommendations of our advisors following that review process.

We want to point out that this is a work in progress. It is important to note that some segments of the producer community are further along in this process than others. Some have been working on this issue for quite some time, undertaking research, seeking counsel of outside experts and revising their guidelines as new information becomes available. Some segments of the producer community have begun their efforts more recently. This work is motivated by the strong desire of retailers and restaurants to enhance animal welfare.

THE GUIDELINES

Transportation and Slaughter Practices

Animals should be transported to processing facilities and unloaded in a manner that keeps them free from injury and distress. Animals that are not capable of entering a transportation vehicle should not be loaded onto the vehicle, and animals that cannot leave a vehicle on their own should be handled appropriately. They must be processed humanely and in accordance with applicable Federal, state and local laws. Animals must be completely insensible prior to any slaughter procedures (with the exception of religious slaughter which will be handled separately).

NCCR and FMI support and recommend to their members for use with their suppliers:

1. The slaughter guidelines, training materials and audit documents of the American Meat Institute (AMI) for cattle, swine, sheep and goats. These guidelines are generally appropriate for the slaughter of other mammals although minor adjustments for specific species may be necessary.
2. The slaughter guidelines of the National Chicken Council (NCC) for broiler chickens.
3. The euthanasia guidelines of the United Egg Producers (UEP) for laying hens.

We are working on the development of measurable audit processes to assure that our suppliers follow the guidelines made available to them.

Breeding and Rearing

Animal agriculture is changing significantly as it strives to satisfy the needs of the expanding US population. There has been a shift over time toward vertical integration and intensive commercial production. These changes have improved our ability to provide abundant, safe and nutritionally superior food at the lowest cost to consumers of any nation in the world.

The shift toward intensive commercial production has changed the environment in which animals are bred and raised. It also has led to a new focus on the impact of modern food animal production on the well-being of animals and on how their environment can be modified to support animal well-being.

The most challenging area for guideline development is the breeding and rearing of animals for food. In some cases, for example, a focus on animal welfare suggests that structural changes in physical facilities

that include increases in space allocation may be needed. As we address these issues in the guidelines, we identify the areas where we know research is underway and where phase-in periods may be necessary.

Laying Hens

FMI and NCCR recommend to their members the 2002 guidelines of the United Egg Producers (UEP) for use with their suppliers of eggs and egg products.

UEP developed a process specifically to address animal welfare concerns in 1999 and formulated their guidelines with the input of a Scientific Advisory Committee. During the past twelve months, UEP has made significant progress on a number of their most challenging issues, including beak trimming, induced molting, space allocation, handling, transportation, handling and processing of spent hens, and euthanasia.

1. UEP recommends *beak trimming* only when necessary to prevent feather pecking and cannibalism and only when carried out by properly trained personnel monitored regularly for quality control. UEP recommends using genetic stocks that require little or no beak trimming as the most desirable approach.
2. UEP has undertaken three research projects looking at the *molting of laying hens* without withdrawing feed. The research is underway at the University of Illinois, the University of Nebraska and North Carolina State University. Results are expected to be available by the end of 2002. NCCR and FMI commend UEP for this action and we are asking the industry to develop a specific phase-out program for feed-withdrawal molting.
3. The UEP phase-in timetable for increasing the *space allocation per bird* (67 inches for White Leghorn hens; 76 inches for Brown Egg Layers) has been significantly shortened and a minimum standard has been added for all new and remodeled laying houses.
4. UEP has developed *training materials* to assist producers in meeting the guidelines and to prepare them for independent audit and certification programs.

For air quality in layer houses, FMI and NCCR recommend that UEP develop a guideline specifying 25 ppm as a maximum and 10 ppm as an ideal level for *ammonia*. For lighting levels in laying houses, FMI and NCCR recommend that UEP develop a guideline specifying that *light intensity* should be 0.5 to 1-foot candle for all birds at feeding levels during production.

Dairy Cattle

NCCR and FMI recommend to their members for use with their suppliers of milk and dairy beef the animal care guidelines of the Milk and Dairy Beef Quality Assurance Center.

The Milk and Dairy Beef Quality Assurance (DQA) Program was developed in 1990, featuring internal audits and third party certification by DQA auditors. Their certification, registration and recognition process was expanded to animal care in 1995. Their program has been developed with the input and guidance of their Animal Well-Being Standards Committee made up of animal scientists, veterinarians and producers. In 2002, DQA agreed to revise its *Caring for Dairy Animals – Reference Guide* to incorporate the recommendations of the FMI-NCCR advisors.

DQA revised their guidelines on several issues based on FMI and NCCR feedback, including but not limited to:

1. Adding a space allocation guideline for a “cow to free stall” ratio of 1.2.
2. Recommending that switch trimming be used rather than tail docking.
3. Specific guidelines for *procedures that should be performed by a veterinarian and with the use of anesthesia and analgesia*, including approved methods and recommended ages for castration and dehorning.

The DQA Center has developed a comprehensive training program and audit system.

Swine

Working with an animal welfare committee that includes animal scientists, veterinarians and producers, The National Pork Board (NPB) is in the final stages of developing a comprehensive set of animal welfare guidelines and a “swine welfare indexing system.” The index will be a tool to assess the welfare of the animal and will be applicable to all types of operations including all indoor and outdoor facilities using stalls, pens, pastures and other forms of housing. The NPB is funding several animal welfare research projects, including five on gestation sow housing.

Our independent, expert advisors have identified a number of issues they believe are important to address. The NPB is in the process of addressing these issues, and work continues on the development of training materials and an audit process.

One of the most challenging issues the pork industry faces is confinement of gestating sows. Current pork industry guidelines include several enhancements regarding sow stalls, but our experts have challenged the industry to go further.

As a short-term measure, the FMI and NCCR support enhanced pork industry guidelines regarding individual housing systems, including:

1. The pregnant sow should be able to lie down on her side without her teats extending into the adjacent stall.
2. Her head should not have to rest on a raised feeder.
3. Her rear quarters should not be in contact with the back of the stall.
4. The pregnant sow should be able to stand up unimpeded.

The FMI and NCCR wish to clarify that point #1 should not be achieved by compressing the udder with a wall, bar or other barrier.

Our advisors have identified problems in both systems (individual and group) most commonly used for housing pregnant sows. Most individual housing systems (stall, tethers) prevent normal movement such as walking and turning. Many group housing systems have the potential to foster aggression and unequal food intake. We challenge the swine industry to develop an action plan for implementing systems that will improve the welfare of pregnant sows.

Broilers and Turkeys

We have been working with the National Chicken Council (NCC) and the National Turkey Federation (NTF).

Earlier in this report we endorsed the slaughter guidelines of NCC.

Our independent, expert advisors have reviewed guidelines developed by both NCC and NTF and have identified several areas where improvements can be made in the interest of animal well-being. Both organizations have made progress during the past year and are in the process of reviewing the recommendations of our experts with their respective organizations’ committees. We look forward to reporting on their progress later this year.

Cattle – Ranch and Feedlot

The animal welfare committee of the National Cattlemen’s Beef Association (NCBA) will review and revise the guidelines developed in 1997. We look forward to working with them during this process.

NEXT STEPS

The FMI-NCCR expert advisors will meet in late summer 2002 to review the progress of those producer organizations that are still working on their guideline revisions. We also will be issuing guidelines for religious processing.

NCCR and FMI are developing an audit system to be used by the industry so retailers will be able to identify suppliers who are implementing animal welfare guideline recommendations.

FMI and NCCR will issue another progress report in October 2002.

FMI and NCCR will begin to review guidelines for veal calves and ducks late in 2002.

To assist you in obtaining additional information about the various producer organizations and their guidelines, the following contact information is provided:

American Meat Institute
1700 North Moore Street, Suite 1600
Arlington, VA 22209
P: 703-841-2400
F: 703-257-0938
www.meatami.com

National Cattlemen's Beef Association
1301 Pennsylvania Avenue, NW, Suite 300
Washington, DC 20004
P: 202-347-0228
F: 202-638-0607
www.beef.org

Milk and Dairy Beef Quality Assurance
Center, Inc.
801 Shakespeare, Box 497
Stratford, Iowa 50249
P: 515-838-2793
F: 515-838-2788
www.dqacenter.org

United Egg Producers
1303 Hightower Trail, Suite 200
Atlanta, GA 30350
P: 770.587.5871
F: 770.587.0041
www.unitedegg.org

National Turkey Federation
1225 New York Avenue, NW, Suite 400
Washington, DC 20005
P: 202-898-0100
F: 202-898-0203
www.eatturkey.com

National Pork Board
P. O. Box 9114
Des Moines, IA 50306
P: 515.223.2600
F: 515.223.2646
www.porkboard.org

National Chicken Council
1015 15th Street, NW #930
Washington, DC 20005
P: 202-296-2622
F: 202-293-4005
www.eatchicken.com

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Current Standards and Future Plans for Standards: Commodity Groups

Dairy

Robert Byrne
National Milk Producers Federation

The National Milk Producers Federation (NMPF), headquartered in Arlington, VA, develops and carries out policies that advance the well-being of U.S. dairy producers and the cooperatives they collectively own. The members of NMPF's 30 cooperatives produce the majority of the U.S. milk supply, making NMPF the voice of 60,000 dairy producers on Capitol Hill and with government agencies.

Animal well being has always been a primary goal of dairy producers. Producers understand that a healthy, comfortable cow produces abundant quantities of high quality milk. It is, therefore, in the best interest of the producer to provide a clean and safe environment for their animals and to ensure that their animals receive the utmost care. Research has shown the importance of cow comfort and the direct relationship to milk production and milk quality. When a dairy cow doesn't produce her usual daily amount of milk, the management practices can be evaluated to determine where the problem lies.

NMPF has developed a comprehensive set of dairy animal care guidelines and will be working with the Dairy Beef Quality Assurance Program (DQA) to develop a producer-friendly manual. These guidelines will be available to all U.S. dairy producers later this fall. The guidelines were developed based on the five "freedoms", which sum up how dairy animals should be treated. They are as follows:

1. Freedom from hunger and thirst
2. Freedom from discomfort
3. Freedom from pain, injury or disease
4. Freedom from fear or distress
5. Freedom to perform the normal patterns of behavior

While specific practices may vary from region to region, dairy producers strive to provide all of these basic freedoms" at all times.

The guidelines will cover all aspects of animal well-being such as nutrition, health care, facilities, milking procedures, treating sick animals, transporting, handling procedures and employee training. The guidelines will be in a check list format, highlighting quality control points.

Based on the concerns of the food industry and animal welfarists, several issues are specifically addressed in the guidelines in contrast to other animal care resources available to producers. These issues are covered in detail to recommend the most beneficial practice for the dairy animal and to show that there are humane practices available. Such topics as body condition scoring, care of newborn calves, non-ambulatory animals, and tail docking are included in detail in the NMPF/DQA guidelines.

The intent of the guidelines is to explain the practices that are in the best interest of the animals, and therefore in the best interest of the producers. The dairy animal care guidelines will serve as a resource for producers and veterinarians to help to ensure animal well-being and improve their production practices. The guidelines are also to be used as an educational resource to consumers about common practices used in dairy production. The guidelines were developed using creditable resources and give basic recommendations based on current scientific knowledge. Because some of the changes or recommendations could be costly to producers, it is imperative to have concrete scientific data to back the reasoning for the practices.

The NMPF/ DQA guidelines will be available to producers by November 2002. The dairy industry will continue to support new research in the animal well-being area. As new technologies and animal care practices arise, they will be recommended to producers. Our hope is to have an industry-wide set of standards that are workable for producers and beneficial to their animals.

Beef

Leah Wilkinson
National Cattlemen's Beef Association

Producer-directed and consumer-focused, the National Cattlemen's Beef Association (NCBA) is the trade association of America's cattle farmers and ranchers, and the marketing organization for the largest segment of the nation's food and fiber industry.

Cattlemen have long recognized the need to properly care for their livestock. Sound animal husbandry practices – based on research and decades of practical experience – are known to impact the well-being of cattle, individual animal health and herd productivity.

Cattlemen are committed to employing proper practices for the care and well-being of their cattle. That commitment started long before the last couple of years and will continue well into the future.

Cattle are produced using a variety of management systems, in very diverse environmental and geographic locations in the United States. As such, there is not one specific set of production practices that can be recommended for all cattle producers to implement. Personal experience, training, and professional judgment are key factors in providing proper animal care. The guidelines we are developing will provide the basis for cattlemen to evaluate their production practices and use the best available science to continue their commitment to proper care and handling of our livestock.

Pork

Paul Sundberg
National Pork Board

The National Pork Board has responsibility for Checkoff-funded research, promotion and consumer information and for communicating with pork producers and the public. Through the delegates at the annual Pork Forum and the National Pork Board organization and committee structure, the nation's pork producers have the opportunity to have input into the industry's programs. One of the long-standing committees is the Animal Welfare Committee, which uses producer Checkoff funds to review the science of animal welfare, to relate that science to production practices and to inform the producer about the latest, scientifically sound swine husbandry practices that can be implemented on the farm.

Pork producers are in the business of producing safe, high-quality food in a consistent manner. Producers must use science as a basis for their animal husbandry practices. While we must recognize that science evolves and that new welfare information may come to light, we also must rely on the relative stability of the scientific process to formulate animal welfare policies. The current National Pork Board policy on the development of animal welfare guidelines reads: "Animal welfare guidelines developed without a sound scientific basis put the welfare of the animal and the sustainability of the producer's operation at risk. Therefore, the National Pork Board continues to support sound science as the only basis for animal welfare guideline decision-making."

The industry has a "Swine Care Handbook" to guide producers regarding animal care. The Swine Care Handbook is based on the current scientific research and extension literature for animal science, veterinary medicine and agricultural engineering. It includes detailed information about:

1. Pork Producers Code of Practice
2. Husbandry Systems
3. Management Practices
4. Environmental Management
5. Facilities and Equipment
6. Feeding and Nutrition
7. Herd Health Management

In addition, over the last two years, an international panel of animal welfare experts (U.S., Canada, U.K. and the Netherlands) has been meeting with the National Pork Board Animal Welfare Committee to develop a Swine Welfare Assurance ProgramSM. The program lists objective assessments of animal welfare that producers can perform in their operations. These measures are organized into sections that review the operation's records relating to the welfare status of the animals, that observe and assess the animals, and that assess the condition of the facilities.

By focusing on evaluating the welfare of the animal, this program provides an objective welfare assessment method that can apply to all production systems, independent of the type of housing or the size of the operation. It can be completed periodically to provide producers with a way to objectively track the welfare of their animals. Developing a producer-usable animal welfare assessment system that is based on science will give the industry a tool to bring uniformity to answering the welfare expectations of the market place.

Broilers

Steve Pretanik
National Chicken Council

Animal welfare is, and has been, very important in the broiler chicken industry. The recent emphasis on uniform written standards is fairly new, but the importance of proper treatment of animals is not.

The reason for this is very simple. Our industry is in the business of selling products made from chickens, and only top-quality chickens make top-quality products. Chickens that are undernourished, or bruised, or otherwise lacking in quality, either cannot be sold for food or result in product downgrades, which hit the bottom line. Even worse, chickens that die on the farm or during transportation are literally a dead loss since they must be discarded.

Therefore, companies have always had a strong economic incentive to protect their birds, to guard their health, to feed them properly, and to handle and transport the birds in an appropriate manner. This commitment to essential animal welfare has been in place for many years.

More recently, there has been an interest in uniform standards that define more precisely our commitment to animal welfare. The broiler chicken industry was a leader in this field. We adopted our first set of standards in February of 1999. Since then, largely at the behest of customers such as retail chains and fast-food companies, we have refined these standards and provided specific metrics that will enable the customer to determine if the standards are being met to the customer's satisfaction.

The program is known as the Animal Welfare Guidelines and Audit Checklist. It is a voluntary program within our industry, and it is up to each company to decide whether to adopt these particular standards. In some cases, customers have developed their own standards that they expect their suppliers to adopt.

As far as I can tell, there is little difference in substance among the different animal welfare programs adopted by either the National Chicken Council or by its member companies' customers. They all seek to verify the same thing, that animals are being treated in accordance with humane expectations. The differences are largely at the margins.

Our program is divided into specific categories. These include:

1. Education and training;
2. Hatchery operations;
3. Proper nutrition and feeding;
4. Appropriate comfort and shelter;
5. Health care, defined as the prevention of disease, or rapid diagnosis and treatment;
6. Ability to move about and display most normal patterns of behavior;
7. Best practices on the farm;
8. Catching and transportation;
9. Processing; and
10. Breeder operations (if the subject operation includes breeders).

Within each of these categories are specific standards and these, in turn, where appropriate are backed up with specific metrics. For example, the very first standard is that any company that adopts the Guidelines should have a person or management group in charge of promoting adherence to the guidelines. The metric is to identify the specific person or management group in charge. The intent is clear: to ensure that the company takes the program seriously and puts some specific person, or group if necessary in a large company, in charge of making sure that the Guidelines are carried out. In other words, to institutionalize the program and make it part of the company's way of doing business.

Some of the specific issues addressed in the guidelines include break trimming, which is not allowed in broilers and is carefully regulated in breeder birds with whom aggression is more of a problem; provisions for euthanasia where necessary; proper design of the diet; ventilation, control of the atmosphere, and space allowance in the grow-out houses; availability of veterinary care; proper handling in catching and transportation; and proper stunning to ensure that birds are insensible to pain when killed.

The guidelines are based on the best practices of the industry and on scientific research where available and relevant. We put together a task force of the best industry experts, including PhD's, specialists in poultry nutrition, and veterinarians, to provide meaningful and appropriate guidelines, and we also consulted with members of the academic community.

We believe that our process has produced an effective and workable program for ensuring a high level of animal welfare in the broiler chicken industry. We continue to work with interested parties, including the Food Marketing Institute and National Council of Chain Restaurants, to address any remaining concerns and arrive at a program that will satisfy customers and assure the public that animals are produced and handled with proper concern for their welfare.

Layers

Ken Klippen
United Egg Producers

Supplying the Demands of the Consumer

How do you produce a food that can supply 22% of your daily protein needs on less than \$0.15 per day? And do so for decades while enjoying a growing market share? The answer is to adopt new production and processing technologies on a scale to maximize your efficiency while minimizing your per unit cost. It's basic economics and that is how the commercial egg industry has always responded to the needs of its customers. In the 1940's small backyard flocks supplied the egg needs of this nation, but demand for eggs grew along with the population requiring eggs to be produced by chickens the year around utilizing scientific principles in production practices.

Today, modern egg production complexes can produce hundreds of thousands of eggs daily that reach your supermarket by the time you start cracking your morning eggs in the frying pan.

Consumer Demands Changing

The economies of production efficiencies are now responding to the social demands for improved welfare practices. The egg industry has again responded.

United Egg Producers (UEP), the organization representing the majority of all egg producers, established an independent scientific advisory committee that examined the scientific literature on the egg production practices of housing and cage space, molting, beak trimming, transportation and handling. Their recommendations were adopted in total by the UEP Board of Directors and later recommended by the Food Marketing Institute and the National Council of Chain Restaurants following a review by their scientific advisory panel.

What's Changing?

UEP members have adopted and are following the most scientifically accepted set of production practices known today. Each producer must complete a monthly compliance report on their production practices in anticipation of an annual audit by a 3rd party. If beak trimming is performed, was it done by a trained crew before the bird was 10 days of age? Alternatives to molting by withdrawing the feed is under investigation with promising results. If the flock was molted, was it performed by withdrawing the feed, and was feed re-introduced if severe stress was observed? The phase-in for increasing the space allocation per chicken has been shorted to reaching the desired space of 67 square inches for White Leghorns and 76 square inches for the heavier brown egg layers. Maximum levels of ammonia are part of the guidelines as well as minimums on the light intensity during production. The egg industry is following science in producing eggs under humane conditions for the chickens so as to meet the demands of its customers.

Turkey

David L. Meeker
National Turkey Federation

The National Turkey Federation (NTF) is the only national trade association exclusively representing all segments of the turkey industry. NTF represents over 98 percent of all production, processing and marketing of turkeys in the United States, representing more than \$8 billion dollars in sales at the retail and food service levels.

A number one priority for the turkey industry is to provide the safest, highest quality products possible. Therefore, it is essential for the industry to ensure the well being of the turkey it raises. Whether it is on the farm or in the processing facility, the turkey industry acts responsibly in raising, breeding, transporting and processing of all turkeys.

As new technology becomes available, the turkey industry will make further adjustments to the current practices that will ensure the health and well being of turkeys. The turkey industry will continue to seek science-based enhancements to changes in animal care practices.

As an industry, we recognize that pressure and unwarranted criticism from animal rights' groups require us to respond to the public's concerns and explain our humane-care efforts in some detail. Therefore, we believe it is in the best interests of all sectors of the food supply chain to agree on practical, responsible guidelines for the care of food producing animals.

The Food Marketing Institute/National Council of Chain Restaurants (FMI/NCCR) process has the potential to be the vehicle for addressing the public concerns while keeping the audit processes from becoming too burdensome. The turkey industry expects a fair, open and comprehensive dialogue between the FMI/NCCR committee and turkey industry experts.

After submitting guidelines updated and accepted by the NTF membership early in 2002, NTF is now in the process of addressing issues brought up in an FMI/NCCR review of the NTF guidelines. Some things can easily be changed, some can be done with considerable effort, and some cannot be done because of economic feasibility or lack of scientific basis. We are working with the FMI/NCCR committee to further develop our animal care guidelines and to address additional issues as new science is developed.

We encourage all of our members to adhere to the NTF animal care guidelines and believe virtually all of the industry is in compliance.

Sheep

Peter Orwick
American Sheep Industry Association

The American Sheep Industry Association (ASI) developed a “Sheep Industry Code of Practice” in 1991 with our State affiliates. The code of practice states our organization’s concern for and commitment to the humane treatment and the well-being of the sheep that provide our livelihoods. It broadly covers:

1. Nutrition (based upon the NRC)
2. Health (routine management practices and treatments)
3. Handling (shearing, loading, transportation, marketing)
4. Management (physical environment, breed adaptability, depredation)

With that policy as a backdrop, we felt that we needed an educational document that specifically described acceptable and recommended management practices. We then wrote and published our “Sheep Care Guide”. In developing these guidelines, we looked at other published regulations and guidelines from around the world and focused on the scientific literature. It covers:

1. Stress
2. Facilities and Handling
3. Transportation
4. Reducing Predation
5. Nutrition
6. Flock Health
7. Shearing
8. Hoof Trimming
9. Reproduction Management
10. Lambing Care
11. Exhibition Practices

We have seen the Sheep Care Guide used as the basis for state publications and educational programs as well as in other ASI initiatives such as the Sheep Safety and Quality Assurance Program and the Sheep Production Handbook (a college text on all aspects of sheep production and management).

We believe that our products and our husbandry practices must meet or exceed our customer’s expectations. As we look forward, we welcome the opportunity to work with customers and others as we continue to examine and incorporate improved science-based approaches into modern sheep husbandry.

Veal

Paul Slayton
American Veal Association

The American Veal Association (AVA) represents approximately 1,300 family veal farmers and affiliated industries. Founded in 1984, its main purpose is to work with the veal industry to ensure that American consumers have access to a safe, wholesome veal supply. To achieve this goal, the AVA is active on several fronts including industry concerns in the legislative arena, issues management, and the industry's Veal Quality Assurance (VQA) Program.

In 1990, as part of the industry's commitment to safe and wholesome veal, the AVA initiated the VQA Program, a voluntary, self-regulating program that commits veal producers, feed companies and packers to follow high standards of safety and conscientious animal husbandry. In 1995, the industry revised the VQA Program, building on the original program by adding a rigid producer certification program monitored by designated veterinarians. The VQA Program's participants are highly dedicated to improving the quality of veal, thus assuring consumers of the reputation and reliability of the American veal supply.

The VQA Program is a three level program and includes a certification process for veal farmers, veal industry suppliers, and veal service representatives. The producer certification program applies to veal producers, i.e. those who raise veal calves and deliver the product to market. Under this program, veal producers pledge to adopt a series of quality assurance practices including:

1. Establishment of a valid veterinarian-client-patient relationship;
2. Completion of calf health and treatment records;
3. Receipt and keeping a inventory list of all animal health care products; and
4. Use of high-quality supplies manufactured and distributed by reliable suppliers.

Producers must identify and work with a qualified veterinarian to ensure the health and well-being of the calves. The veterinarian's duties include advising the producer on the calf health program; reviewing the producer's mandatory farm program self-assessment; and evaluation on a semi-annual basis the farm plan and self-assessment with the producer. Participating producers are required to become recertified every two years.

The veal supplier and service representative programs were established to ensure that the entire veal industry is committed to producing safe and wholesome meat from the start of the production process to the finish. In order for a supplier to be certified, the supplier must sign an agreement to follow a number of strict guidelines including: specific stipulations on the purchasing and receiving of ingredients; the labeling and accurate use of formula; the mixing, bagging, and shipping of products; and the usage of correct labels and tags. Certified service representatives must be employed by a certified supplier and take an examination on quality assurance and technical production questions.

American's special-fed veal industry is comprised of family farmers operating principally in seven producing states: Indiana, Maryland, Michigan, New York, Ohio, Pennsylvania, and Wisconsin. The special-fed veal industry grew as a by-product of the dairy industry using primarily Holstein bull calves. In addition to the calves, the special-fed veal industry uses milk protein by-products from the dairy industry valued at over \$120,000,000 each year. Although only about thirty years old, the industry produces approximately 650,000 special-fed veal calves a year. Because veal farmers recognize that their livelihood depends upon the health and well-being of their animals, the humane production of veal calves is a top industry priority. Accordingly, veal farmers have implemented modern technology and animal husbandry practices that were developed with the guidance of leading animal scientists and veterinary organizations. The result is a nutritious, low-fat, delicious meat product, enjoyed by millions of consumers.

Many people outside of the veal industry have expressed concerns about the feeding and housing of veal calves. But animal scientists, veterinarians, and the Animal Health Committee of the American Veterinary Medical Association (AVMA) support industry practices based on their special understanding of a calf's nutritional needs and behavior and the propensity of young calves to develop disease.

Calf Nutrition: A Balanced Diet

Veal calves receive a highly nutritious diet designed for optimum growth and good health. This diet is based upon nutritional standards established by a number of government agencies and professional organizations, including the AVMA and the National Research Council. Veal producers feed calves a special milk replacement formula designed to provide all the 40 essential nutrients they need, including amino acids, carbohydrates, fats, minerals, and vitamins. Veal calves receive diets with sufficient iron to meet the animals' requirements for normal health and behavior. Producers are careful to provide sufficient iron to their calves, recognizing that an early clinical symptom of anemia is poor appetite – a calf that does not eat will not grow. The best evidence that veal calves are healthy is the excellent growth rate and very low mortality of special-fed veal calves. The typical veal calf gains an average of 2.5 pounds per day. Further, based upon a report issued by the Council for Agriculture Science and Technology, the calf mortality rate on veal farms is one of the lowest in animal agriculture.

Guidelines for Calf Housing

The AVMA, animal scientists and agricultural engineers have worked with the industry to develop specific guidelines for veal calf care and production. These guidelines support the practice of raising calves in individual stalls because it allows producers to carefully monitor and control the calf's nutrition and health status. Calves have a very strong nursing instinct and contact between calves greatly increases the likelihood of contracting disease. In fact, studies show that calves raised in groups have from two to 14 times the disease rate of individually-penned calves.

Furthermore, recent research in Europe has confirmed that calves raised in group housing experience higher levels of stress. Group housing encourages competition from "boss" calves and establishes a "pecking order" among other animals. For this and other reasons – including ease of cleaning and feeding – veal calves are housed individually in their own pens.

Each stall is constructed so that the calves will have adequate room to stand, stretch, step forward, backward and from side-to-side, lie in a natural position and groom themselves. Slotted flooring is provided for comfort and cleanliness. In addition, research conducted by Dr. Carolyn Stull, University of California at Davis, the practice of tethering calves was not found to be stressful on calves. Modern veal stalls allow the animals to have visual and physical interaction with their neighbors. This means that the calves are not socially isolated but are assured of receiving their own feed, individual care, and attention.

Summary

The ultimate goal of veal producers is to raise healthy calves in a humane manner. To achieve this goal, producers and veterinarians use balanced diets and individual stalls to facilitate frequent observation and careful management of the calf's nutritional and health status. Veal producers are well aware of the fact that quality production is no accident; it is result of quality care. Excellent care carries benefits during the production process and even after the calves leave the farm. Producers have nothing to gain by providing anything less than the best care for their livestock, which produces a premium product for the consumer. The veal industry continues to support the dairy industry by offering an outlet for Holstein bull calves and excessive milk protein by-products. Each year the veal industry accounts for approximately \$250,000,000 of revenue to the dairy industry. The AVA strives to help producers improve management practices through their continuation of the VQA Program. By the continuation of the VQA Program, the American veal industry will remain strong by helping to ensure a safe, wholesome product for consumers.

Current Standards and Future Plans for Standards: Specialty Markets

Food Animal Concerns Trust

Richard Wood

Food Animal Concerns Trust (FACT) is a non-profit organization that advocates better farming practices to improve the safety of meat, milk, and eggs. FACT is just completing an 18 year project to create a viable market for eggs produced by uncaged hens, working with farmers who agree to follow stringent humane and *Salmonella enteritidis* (SE) production standards on its NEST EGGS® farms. FACT also has used these farms for research on SE and for testing the viability of changes in farm management practices related to layers.

I am delighted to report that the NEST EGGS® project has successfully accomplished its goals. In 1984, humanely produced eggs could only be found in occasional farmers markets and food co-ops. Today eggs from uncaged hens can be found in most of the major grocery chains with at least two chains carrying their own private label. Numerous egg producers have adopted humane egg management steps, moving away from cages and providing increased floor space for their birds. As a result, they have seen an increase in production. In terms of food safety, the NEST EGGS® protocol for SE testing along with other models from the industry have helped to set the stage for a nation-wide *Salmonella enteritidis* testing program for all egg farms.

The NEST EGGS® protocol addressing humane standards includes the following:

1. Pullets and hens are kept without cages in a suitable building equipped with deep litter, feeders, and drinkers. Layer houses include perches and nest boxes.
2. The stocking density is 1.5 square feet each for pullets at 18 weeks and 2.0 square feet each for hens.
3. Litter must be at least 2 inches deep, clean, dry and of good quality. The houses are to be free of ammonia fumes. Bales of hay are provided in the litter area.
4. Feeds are compounded without the use of meat meal, bone meal, or other animal products. No medications may be added routinely to feeds.
5. If hens become ill, they may be medicated after diagnosis. Birds that are obviously sick or injured are separated from the flock and maintained with food and water. (Should sick birds require medication, eggs are not used for NEST EGGS® during medication or for a period of at least seven days following the withdrawal of medication. No extra-label drug usage is allowed.)
6. Farm and processing buildings and equipment must be kept in a clean and sanitary condition at all times and in good repair. Biosecurity steps must be followed.
7. All pullet and laying houses must be cleaned and disinfected between flocks.
8. On farm record keeping includes a daily record of egg production, mortality, and cooler temperatures.
9. At the processor, cartons are imprinted with an identification number for each plant, the flock number along with a date stamp, allowing for an informed trace-back.
10. Every effort is made to use competent crews for catching and moving birds. Rough handling is not acceptable.
11. Careful debeaking is permitted. Force molting is not permitted.

The NEST EGGS® SE testing protocol is as follows:

Pullets

1. Empty: SE test of house before delivery. If SE is found, test again. If SE is still found, do not use the house.
2. Delivery: Chicks must be delivered certified SE free. Test chick box papers. If SE positive, replace chicks. Disinfect house and test house again.
3. 5 to 15 Days: If SE positive, retest. If still positive, replace chicks, disinfect house and test house again.

4. 10-15 Weeks: If SE positive, retest. If still positive, replace chicks, disinfect house and test house again.

Layers

1. Empty: Clean and disinfect house. If SE is found, disinfect & test again. If still SE positive, use alternative house or divert eggs and test at 22 weeks.
2. 30 weeks: If SE positive, divert eggs and retest. If positive a second time, depopulate the house.
3. 45 weeks: If SE positive, divert eggs and retest. If positive a second time depopulate.

Feed is also sampled and tested on a regular basis for *Salmonella*.

FACT has analyzed the SE data on its flocks. At the beginning of the SE control program in 1991, tests of empty houses reported a 25% infection rate. From 1993 until 1996, the number of flocks with a positive test was reduced to less than 15%, and from 1997 to 1999, the percentage of flocks with a positive layer house test dropped to less than 5%. Since 1999, we have had two layer house positives; both were negative on succeeding tests. These SE reductions occurred even though the amount of sampling for SE increased over the period of research.

While it is difficult to determine a cause and effect relationship between control measures and flock contamination, these results suggest that humane housing combined with biosecurity measures and a flock monitoring program can greatly reduce the risk of flock contamination by SE. Given the density of poultry farms in Pennsylvania where the NEST EGGS® flocks have been located, it may not be possible to completely eliminate the threat of SE contamination in the flocks, but the program has shown that this threat can be greatly reduced.

Standards do work. Humane standards improve the life of the birds and respond to a growing demand for eggs from these birds. Food safety standards improve the overall health of the flock due to the biosecurity steps taken, and help to protect human health from foodborne disease.

The Free Farmed Labeling and Certification Program

The American Humane Association

Adele Douglass

The American Humane Association (AHA) was founded in 1877. Its mission “as a network of individuals and organizations, is to prevent cruelty, abuse, neglect and exploitation of children and animals and to assure that their interests and well-being are fully, effectively and humanely guaranteed by an aware and caring society.”

The American Humane Association was formed when local Societies for the Prevention of Cruelty to Animals and Humane Societies came together to address the problem of the maltreatment of farm animals in transportation from the West to the East for slaughter.

Over the years, the American Humane Association has led the fight for humane slaughter, and many other farm animal issues. This includes efforts to improve conditions at slaughterhouses, improving American laws to provide additional protections for farm animals, and ultimately development of the Free Farmed certification and labeling program.

Free Farmed Certification and Labeling Program

The Free Farmed program got its start when the American Humane Association was in contact with the Royal Society for the Prevention of Cruelty to Animals and learned about the Freedom Foods program. In 1999, members of the AHA Board of Directors, executive staff, and experts from its Scientific Committee met with the RSPCA and visited farms involved in the Freedom Food scheme. These visits helped AHA develop the Free Farmed program and implement it in the United States. The RSPCA was very generous with its time, advice, and assistance in helping AHA create the Free Farmed Program.

While some of the Free Farmed program is based on the RSPCA’s scheme, there are differences between the two programs. For example, the Free Farmed program is a certification and labeling program that lets consumers know that a specific producer has met AHA’s rigid farm animal welfare standards. However, the food is still sold under that producer’s brand. The Freedom Foods scheme allows producers to sell products under the Freedom Foods label/brand and competes in the market place with other “branded” products.

AHA decided to undertake a certification and labeling program rather than one of branded products because it felt it could cover more products in the marketplace if it wasn’t perceived as a marketplace competitor. AHA also did not want to take on the enormous marketing costs, like those spent by Freedom Foods in marketing their brand.

Farm Animal Services

To handle the certification, administration, and monitoring of this program, the American Humane Association created Farm Animal Services, a separate non-profit organization. American Humane is responsible for the Animal Welfare Standards and Farm Animal Services is responsible for the administration, inspections, labeling, and marketing of the Free Farmed program and logo to producers and retailers as well as the public. Farm Animal Services also liaisons with the United States Department of Agriculture which verifies the Free Farmed inspection and certification process.

The mission of Farm Animal Services is, “to improve the welfare of farm animals by providing viable, credible duly monitored standards for humane food production and ensure consumers that certified products meet these standards.”

The American Humane Association Farm Animal Welfare Standards

Each set of American Humane Association Farm Animal Welfare Standards are initially developed and written by a Scientific Committee comprised of experts in the fields of farm animal welfare, animal

behavior, animal and veterinary science, and food production. The standards are then approved by the American Humane Association Board of Directors. The AHA standards are based on Scientific materials in addition to the RSPCA standards.

The Scientific Committee consists of:

Dr. Joy Mench, University of California at Davis
Dr. Janice Swanson, Kansas State University
Dr. Carolyn Stull, University of California at Davis
Dr. Julie Morrow, Texas Tech University
Dr. Pam Hullinger, California Dept. of Food and Agriculture
Dr. Brenda Coe, Penn State University, Farm Animal Services Staff
Dr. Bill Van Dresser, Retired Veterinarian
Dr. Temple Grandin Colorado State University
Dr. Ruth Newberry, Washington State University
Dr. Patricia Hester, Purdue University
Dr. Joe Regenstein, Cornell University

There are currently standards in place for Dairy Cows, Beef Cattle, Laying Hens, Broiler Chickens, Pigs and Sheep. The Scientific Committee is currently developing standards for turkeys, which are expected to be finalized later this year.

To keep up with new techniques in farming and production, the Scientific Committee requests the Species Committees make recommendations for any changes to the standards. The Species Committee includes producers affected by the program, members of the Scientific Committee, AHA board members, and FAS staff. The Species Committee recommendations are sent to the Scientific Committee which then reviews the recommendations and approves, disapproves, or makes additional changes before forwarding the standards to the AHA Board of Directors. The AHA Board of Directors then accepts or rejects the recommended changes to provide an updated version of the standards.

The Free Farmed Certification Process

Producers wishing to apply for the Free Farmed label must follow a rigid certification process. A producer or producer group requesting information on the program and wanting to participate is sent:

1. An application form;
2. Copies of the relevant American Humane Association Farm Animal Welfare Standards;
3. Templates for records that producers are required to keep (such as health plan, etc.); and
4. A farm manual, that needs to be completed and returned to the FAS office. The manual describes animal housing, nutrition, husbandry practices, health plans, emergency procedures, casual euthanasia policy, and other information that will help the Free Farmed assessors judge whether the producer is compliant with AHA Animal Welfare Standards.

Once a producer submits the relevant information to Farm Animal Services, the Director of Animal Science Programs reviews it and arranges for an assessor to contact the producer and arrange for an inspection. The assessor will also discuss the farm plan and other relevant materials with the producer to ensure everything is in order and that all the records needed for review are available.

The assessor does the physical on-site inspection of the applicant's farm or ranch. During the on-site inspection, the assessor conducts interviews with management personnel and employees, observes the operation in process, and reviews written procedures and supporting documentation. Assessors will itemize any significant findings of nonconformance with the AHA Farm Animal Welfare Standards, and assign a tracking number to each nonconformance. The items will be classified either as a "continuous improvement point/minor non-conformance," or a "hold point/major non-conformance."

1. A major non-conformance is a situation where the well-being of an animal is at risk. A major non-conformance must be corrected before the approval process can move forward.
2. A minor non-conformance concerns record keeping issues and other items that do not have a significant impact on the well-being of the animal. These concerns do not prevent certification but must be corrected in a timely manner.

Because major non-conformance points indicate findings that compromise the integrity of the animals, certification may be denied or revoked until correction. The assessor also completes a review document and a non-conformance document. The assessor then writes a report about the inspection, which is submitted, along with all relevant documents to the Executive Director of Farm Animal Services. The Executive Director reviews the assessment documents to determine if the producer meets program requirements.

Applicants that meet all requirements as referenced in the AHA standards and instructions, will be issued a certificate of approval valid for one year from the date of the approval letter. Farm Animal Services may deny approval for failure to adequately address any documentation requirements; failure to demonstrate the capability to meet the program requirements; failure to provide access to supplier's facilities and records; presenting false or misleading information; or for any evidence of noncompliance. Conditional approval is given if there are non-conformances and permission to use the Free Farmed logo lasts for the time it takes to rectify the non-conformance points, at which point the producer will be given full approval certification in the program. The certificate allows the producer to use the Free Farmed logo for one year (full approval certificate) or for the time specified (conditional approval).

Annual renewal inspections are also required. Participants are required to maintain approved programs as described in their system documentation. Any changes to the approved system that may potentially affect the integrity of the farm animals must be submitted in writing to FAS and approved prior to implementation. The FAS office will contact each participant before the expiration of their approval. Each participant must submit any revised copies of program documentation and be reassessed to maintain approved status. FAS may suspend the approval from any supplier who fails to follow the approved policies and procedures, implements significant changes to approved systems without notification to FAS, or for any deliberate misrepresentation. If a supplier's approval is suspended, the entire process must be re-initiated to be certified in the future.

Accreditation Procedures For Assessors:

Assessors assigned to conduct document reviews and onsite audits must be qualified by Farm Animal Services and have training, experience and education in animal science, veterinary medicine, or other relevant backgrounds as deemed appropriate by Farm Animal Services. Requirements include:

1. The assessor must have a Masters degree in Animal Science or comparable animal experience and education.
2. The assessor must complete a training class, which includes review and testing on the standards.
3. The assessor must go on two apprentice inspections with an experienced assessor. The experienced assessor must submit a review of the performance of the assessor "trainee."

USDA Verification

The Free Farmed Certification program is currently verified by the United States Department of Agriculture/Agriculture Marketing Service. The USDA verifies the Farm Animal Service inspection and certification process. This gives consumers added assurance that the Free Farmed label is awarded to only those producers who meet the rigid AHA Farm Animals Welfare Standards. Farm Animal Services is in the process of preparing to apply for ISO 65 Guide Certification. Farm Animal Services notifies the Agricultural Marketing Services of the USDA prior to inspections. The USDA then arranges to accompany assessors on the assessment of the farms. The USDA at this time covers about 25% of Farm Animal Services inspections.

Animal Welfare Institute

Diane Halverson

The Animal Welfare Institute (AWI) first developed humane on-farm pig husbandry standards and a label to help consumers identify pork from humane, independent family farmers in 1989. The label was used by a farm family in a pilot project based in Minnesota in which products from their farm received the Animal Welfare Institute label and were sold by a mainstream Minneapolis grocery store chain. The Animal Welfare Institute no longer uses that label, but does allow the organization's name to be used by marketers and farmers who fulfill Animal Welfare Institute standards and arrange for their farms' endorsement by the Animal Welfare Institute. AWI is developing further standards for pigs and new standards for other species of animals used for food.

Animal Welfare Institute standards are based on the natural behavior of the animal, requiring that animals be allowed to fulfill instinctive behaviors, and on the principle of fitting the system to the animal rather than the animal to the system. This means, for example, that the confinement of pregnant sows in individual crates without bedding, or by collars and chains tethered to the floor, or being prohibited from behaving naturally or even walking or turning is forbidden. Sows and first litter-gilts must be given appropriate materials, such as straw, with which to build nests at farrowing, and must be provided with sufficient space, husbandry and feeding arrangements to form and maintain a stable social hierarchy. Young pigs must be given adequate space and appropriate materials in which to root, explore and play. All animals must be provided a comfortable resting area that includes bedding. Piglets must be at least 5 weeks old before they are weaned. Routine use of low levels of antibiotics to maintain productivity or promote growth is prohibited on farms adhering to the Animal Welfare Institute program. AWI's standards can be read in full on the Animal Welfare Institute's website at **www.awionline.org**.

AWI's program objective is to foster the revitalization of humane independent family farming in which ethical principles and a feeling and eye for animals, not only a quest for profits, guide husbandry decisions, and in which husbandry knowledge and skills can be passed on to future generations.

Although the standards were developed to preserve the welfare of pigs, they appeal to an array of organizations with diverse interests. These groups recognize the importance of protecting pig welfare, but they see additional merit in the standards: protecting water quality, revitalizing a culture of traditional, sustainable family farms and protecting the effectiveness of antibiotics in human and veterinary medicine. In 2002, the Animal Welfare Institute's standards have been endorsed by Chef's Collaborative, Earth Pledge Foundation, Global Resource Action Center for the Environment, New England Livestock Alliance, Public Citizen, Slow Food USA and Waterkeeper Alliance.

Agricultural Marketing Service (AMS) Process Verified Program

Jim Riva

The Agricultural Marketing Program's Process Verified Program provides the agricultural industry with independent verification of their quality management systems, and a method to add value to and market their products using specific value added claims. These claims were all but impossible to verify using normal certification methods.

By using the Process Verified Program, farmers, producers, feeders, suppliers, and processors have a method to assure to their customers that their procedures and processes which are designed to meet specific quality standards, are verified by the USDA, and will provide consistent quality on a continual basis. Customers gain confidence in the quality system due to the independent, third-party audits that review, confirm, and verify a company's documented quality management system. In this process AMS verifies quality management systems, and upon approval allows companies to advertise and market their products as "USDA Process Verified."

To evaluate quality systems AMS uses internationally recognized standards for quality management systems. This ensures consistent auditing practices and promotes international recognition of audit results.

Process Verification is a cost efficient alternative to traditional certification and product inspection. It is a third party verification of any organization's quality management system, large or small, regardless of product, process or marketing goal.

AMS currently conducts quality systems audits for a number of Quality System Verification Programs. These programs are posted on the AMS website at: <http://www.ams.usda.gov/process/>. Through this verification, USDA Process Verified suppliers are able to have "**Process Verified Points**" such as breed, feeding practices, or other raising and processing claims verified by the USDA and marketed as "USDA Process Verified."

The USDA Process Verified Program applies to livestock, meat, and agricultural products marketing programs submitted to the AMS Program for verification and monitoring. It is limited to programs or portions of programs where process verified points are supported by a documented quality management system. The extent of controls included in these programs may include all phases of production and marketing from genetic development through retail distribution, or any portion as described in the scope of the submitted program. Programs submitted in writing to AMS will be approved when it is determined that they meet the AMS criteria and the program has successfully passed an onsite audit.

AMS quality auditors are fully trained on program requirements for each specific commodity group by experienced lead auditors. Additionally, all lead auditors have passed an American National Standards Institute (ANSI) Registrar Accreditation Board (RAB) lead auditors training class and are working toward certified quality auditors status. Lead auditors must maintain this status with continuing education and practical experience in the quality system auditing field. AMS auditors conduct audits according to ISO 10011-1:1990 Guidelines for auditing quality systems, allowing international recognition of results documented during the assessments.

The USDA Process Verified Program is user-fee funded. Applicants are charged an hourly fee for documentation review, onsite audits, and for travel costs at the Government approved reimbursement rate. Exact costs would vary depending on the scope of the program being audited, the number of locations, and other factors.

In the initial audit year of the program, applicants should expect to have a document review, a major system wide audit, and at least one surveillance audit. AMS lead auditors will provide cost estimates prior to providing service based on the scope and location of the program.

Applicants must submit a letter requesting services and a complete copy of the applicant's program documentation along with:

1. Examples of all labels, tags, or other instruments used to identify animals or products.
Completed examples of all forms used in the program. These examples should be taken from actual records.
2. Copies of letters from consulting veterinarians, feed manufacturers, tag manufacturers, etc., as specified in the appropriate general requirement documents.
3. A copy of the most recent satisfactory internal audit report.

National Organic Standards Board: Animal Agriculture

Keith Jones
USDA National Organic Program

After struggling to build market recognition and supply capacity for many decades, the organic farming industry became one of the fastest growing segments of U.S. agriculture during the last decade. Certified organic cropland more than doubled in the United States between 1992 and 1997, and two organic livestock sectors—eggs and dairy—grew even faster.

On December 21, 2000, the USDA published the final regulation establishing the National Organic Program (NOP) under the direction of the Agricultural Marketing Service. The program establishes national standards for the production and handling of organically produced products.

The NOP's livestock production standards reflect growing consumer interest in animal welfare issues, particularly livestock living conditions. The extensive public comment process used in developing the regulation showed many organic consumers are concerned with animal welfare issues. These commenters believe that while animal confinement is appropriate under certain conditions, access to the outdoors is a fundamental tenet of organic livestock production. These consumers believe further that protection of an animal's welfare or soil and water are the only appropriate conditions for restricting access to the outdoors.

Commenters also maintained that the outdoor area must accommodate natural livestock behavior, such as dust wallows for poultry and, in the case of ruminants, provide substantial nutrition. Many commenters specifically opposed dry lots as an allowable outdoor environment. As a result of these comments, USDA established access to the outdoors as a required element for all organically raised livestock. This presentation will discuss the NOP standard development process and the resulting organic livestock standards along with a discussion on future issues in organic livestock production.

Reaction and Response to Use of Guidelines or Standards by Farmer Representatives

R. W. Sauder, Inc.

Paul Sauder

The egg industry has changed the way eggs are going to be produced in the United States.

For the last 40 years we have produced eggs behind closed doors because we were all working to produce at the lowest cost. Now we have a new way to produce eggs based on science. An independent scientific advisory committee reviewed the treatment of egg producing hens and provided its recommendations for industry standards. We now have standards that we can open up our operations and “show and tell” the good news.

1. Increase cage space – less stress - better egg quality – cleaner eggs – safer eggs;
2. Standards for molting, based on the most current, verified scientific studies;
3. Standard trimming of chicks’ beaks;
4. Air quality;
5. Handling of birds – daily inspections;
6. More training to employee on care of birds.

These six items will help the egg industry get a better image with our customer and will help us sell more eggs. By improving the care of the chicken we are going to get better eggs and this can be communicated to our customers to increase the demand for eggs. We at Sauders have housed one flock at the 67 sq. inches in July 1, 2002 to find out the total benefits we will get when all our flocks will be at the new standards. This is a giant step for egg producers to go from a low cost production based system to a science based system that gives consumer confidence in our product.

“It’s the right thing to do”.

Premium Standard Farms

Charlie Arnot

Premium Standard Farms supports the position of the National Pork Board (NPB) and National Pork Producers Council as it relates to welfare standards and guidelines. We view this as an issue that will impact all producers. The NPB has dedicated significant resources to research on animal welfare and we look to our industry association to provide guidance and direction on this and other industry-wide issues.

Niman Ranch Pork Company

Paul Willis

On our farm, pigs have always been living on pastures and in well-bedded barns, with room to exhibit natural behaviors such as rooting, exploring, playing and building nests. Therefore, bringing our farm into compliance with the Animal Welfare Institute's (AWI) Humane On-Farm Pig Husbandry Standards required few changes in the way we raised pigs. For example, our sows have always farrowed on pasture from Spring through Fall and in straw-bedded barns during the winter. In these settings the sows have sufficient space to establish a stable social hierarchy, to exercise, and enjoy life. Piglets have ample room to root, explore and play. We have always provided ample bedding when sows are about to deliver piglets and for comfort and for rooting at all other times. The principle changes we made to comply with AWI standards were 1) discontinuing docking the tails of piglets and 2) removing the low levels of antibiotics that were routinely placed in pig feeds by feed manufacturers. We found that, as the Animal Welfare Institute suggested, there was no need for the routine use of antibiotics or tail-docking when we provide appropriate environments and good husbandry.

We have set up the pasture and adjacent fields in a 5 year crop rotation consisting of alfalfa/clover, small grains, corn, soybeans and hog pasture. Sharing sunlight and fresh air with animals on pasture leads to fertile ground for crops in following years. This rotation has restored the health of the soil, contributes to high yields without pesticides or chemical fertilizer, so that our crops are now certified organic.

Marketing to California-based Niman Ranch required additional refinements of our methods. For example, Niman Ranch will not accept pigs who have been treated with antibiotics at either a subtherapeutic or therapeutic level. Niman Ranch forbids the use of animal by-products in the feed, as does the Animal Welfare Institute. Providing the proper environment, feed and husbandry –including an absolute minimum weaning age of 5 weeks- and following a suitable vaccination program has proven to be a sound way of avoiding the need for therapeutic and non-therapeutic antibiotic treatments.

Over 200 independent farm families have joined the Niman Ranch Pork Company. Some of these have made changes similar to those we made, others have made more extensive changes in order to serve the needs of animals and serve the needs of consumers nationwide who are demanding flavorful meat from animals who have lived as they were meant to live.

United Dairymen of Arizona

Paul Rovey

As a dairy farmer, a top priority of mine is taking care of my herd by providing them with a nutritious diet, good medical care and healthy living conditions, so from a producer standpoint, the implementation and use of animal care guidelines are not a huge surprise. Nor is it going to change how I operate very much. Dairy producers have used and are currently using many of these practices recommended in the guidelines. Producers know that their cows must be healthy, happy and well cared for in order to produce high quantities of pure, wholesome milk.

The majority of U.S. producers already carry out many of the recommended procedures in the guidelines. For instance, the dairy animal care guidelines recommend proper training for employees. Many producers already have this in progress at their farms. For example, at my operation I work closely with my herd veterinarian. The vet visits the farm three to four times a month and usually stays the entire day. Other than checking the animals and performing routine health procedures, the vet also works closely with the employees. The vet takes time to train employees about proper techniques for treating animals and proper animal handling procedures to prevent injuries.

As a dairy producer, I appreciate the idea of these science-based guidelines. When a new technology or a new way of doing things arises, I find it beneficial to see solid proof that this will work for my operation and animals. Providing scientifically defensible guidelines is a definite must. An example of this is dehorning, which is a subject covered in the guidelines. The specific recommendations will be workable for producers; however, they are workable because they are based on scientific data. The guidelines will be implemented on farms as long as they are based on science.

Another reason it is crucial to have science-based guidelines is cost. Some systems can be costly to set up, but if they will benefit the cows, then the initial cost will be worth it in the long run. As new, innovative technologies have come up, many producers have put these practices to use. An example of this is the type of cooling system I use. Arizona is known for its heat in the summertime. This requires a very good cooling system to keep my cows happy and healthy. My cooling system is a computer-controlled state of the art system incorporated into the existing shades, injecting atomized water into a turbulent air stream. This system helps drop the temperature 30 to 40 degrees depending on the humidity, while not getting the bedding for the cows wet. These systems can cost upwards of \$400 per cow. Many producers use sprinklers and fans to cool their animals and while the systems may be expensive to set up, they greatly improve cow comfort and help the cows produce a greater abundance of high quality milk.

Another example of this is improved types of bedding for the animals. Providing bedding that is comfortable and clean has definite benefits for cows. There are a multitude of types of bedding, each one suited for that region of the country. All of them are designed and maintained to give the maximum amount of comfort to the cows.

The guidelines will be a useful source to see a compilation of the available procedures and practices. I, along with other dairy producers strive to do the best for our animals, so that is why coming together on an industry-wide project of animal well-being is so beneficial. We hope these guidelines will also serve as a tool for consumers to help them better understand where their milk/ dairy products come from, why we operate they way we do, and how committed we are to the well-being of our animals.

Dairy farming is a way of life, not just a business. We welcome this chance to educate the public and share our practices with them.

Professional and Commodity Organizations: Programs and Observations

Federation of Animal Science Societies

Barbara P. Glenn

FASS supports the humane care of agricultural animals. FASS is a federation of livestock and poultry scientists serving society through animal agriculture. FASS comprises three member societies: the American Dairy Science Association, the American Society of Animal Science, and Poultry Science Association. We represent over 10,000 scientists, in academia, industry and government. Animal scientists are leaders in farm animal well being. We are also experts in farm animal husbandry, breeding and genetics, egg production and products, genomics, molecular biology, growth, lactation, milk and milk products, meat science, nutrition, physiology, growth, and lactation. We have published the Ag Guide (FASS, 1999) which details care and use of farm animals in research and teaching, and is recognized as authoritative by the US Department of Agriculture (Federal Register, 2000), the Public Health Service (as PHS endorses guidelines of the Institute of Laboratory Animal Resources, ILAR, 1996) and AAALAC International (www.aaalac.org). In addition, the Ag Guide is used by the Institutional Animal Care and Use Committees (IACUC) of most universities that conduct agricultural research with farm animals. Recently, we have expanded our efforts to developing criteria for on-farm animal care.

FASS supports the use of sound science to develop practices for the care and handling of farm animals. Standards for on-farm food animal production are an important assurance to farmers, food suppliers and consumers. Most livestock and poultry producers are doing a good job in raising their animals, but standards provide an excellent check. Right now most buyers want to work with standards and systems developed and implemented by producers, but they see a strong need to be able to assure consumers that these systems are scientifically sound and that animals raised in accordance with them are “well cared for.” Therefore, standards are being developed by both food suppliers and species organizations, each in collaboration with scientific experts. Such processes are intended to be able to provide a “seal of approval” for producer programs in which the buyers will have confidence.

FASS and the American Registry for Professional Animal Scientists (ARPAS) were competitively awarded a project by the Animal Agriculture Alliance (AAA) to develop criteria and a process for the evaluation of species-specific farm animal well-being guidelines to assess their compliance with AAA Animal Care Principles and that these are based on the best science available. Over 40 scientist experts (Ph.D.'s and veterinarians) have been developing criteria for on-farm animal care, and a process for evaluation, for nine different species. The species include: beef, broilers, dairy, ducks, layers, sheep, swine, turkeys, and veal. We are building an evaluation process that is scientifically sound, and we are working independently to that end. We want a process that is believable, and one that will meet consumer and buyer expectations as well as yours.

In order to have science-based standards, the role for the scientists of ADSA, ASAS, and PSA (FASS) is to be the interface to the state of the science. We have developed an over-arching set of science-based criteria that were used to finalize species-specific criteria. Species criteria will be used in an evaluation process in comparison to the guidelines of the member organizations of AAA. What we expect to have is an evaluation process that is science-based and covers each species in a similar manner. Consumers are assured that we are evaluating the care of all species, and we are doing it in a comparable manner. Buyers have identification of quantifiable measures so that there will be consistency in assessments that are eventually made in terms of your member organization and your third party audits. Producers know the criteria used in evaluations are based on the best science currently available and also on the knowledge of current production systems. Importantly, the process we have used to develop criteria is one which confers sustainability, or the ability to update and improve, as we learn of new scientific discoveries in animal well being. The role of FASS will continue to be inclusion of a sound scientific basis for animal care, both in research programs and on the farm.

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Institute of Laboratory Animal Resources. 1996. Guide for the Care and Use of Laboratory Animals. Pages 4-5. National Research Council, National Academy Press, Washington, DC.

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Animal Agriculture Alliance

Kay Johnson

The Animal Agriculture Alliance is a national umbrella organization through which producers of all animal species, feed suppliers, animal health companies and other allied industries, distributors, retailers and restaurants can work together to develop programs and messages to reach consumers to enhance their understanding and appreciation for food animal production.

The Alliance works proactively to provide consumers with the assurance that the meat, milk & eggs they buy are from farmers and ranchers who care about their animals and provide for their overall well-being, while producing the most wholesome, abundant and affordable food in the world.

The Alliance's mission is to support and promote animal agriculture practices that provide for farm animal well-being, through sound science and public education. As such, the Alliance is working to ensure all sectors of animal agriculture have in place consistent, science-based animal care guidelines that meet its Principles for Animal Care, that are species-appropriate and that are accepted throughout the food chain.

The Alliance is also working with producer groups, as well as the restaurant and retailer groups to develop an independent audit process to certify that producers are in compliance with the guidelines developed for their particular species.

The main impetus for the creation of the Alliance was the constant bombardment of messages to consumers about how farm animals are raised. Often the information was incorrect or misleading, and sometimes conflicting - depending on who delivered the message. Consumers ask, "What should I believe?" and "Who should I believe?" with so many mixed messages being presented. Consumers needed to have a credible source for accurate, science-based information they could understand to answer their questions and concerns.

In order to provide that, the members of the Alliance board of directors determined the first step had to be to ensure producer groups' animal care guidelines were scientifically sound and consistent in providing for appropriate animal care. A set of Principles for Animal Care for all guidelines needed to be established, and then criteria for those Principles should be determined based on science for each specific species group. Second, producers should make sure they have implemented those recommended practices to ensure they are providing appropriate care for their animals.

With these two factors in place, the Alliance then serves as the voice to consumers to promote these measures, providing consumers the assurance they need to understand that the food they eat and they products they use comes from animals who were cared for appropriately.

Every stakeholder in the food chain – from those who raise animals, to the farm/ranch suppliers, to those who transport the animals, to those who sell food products to consumers – has as a common goal to maintain the public's confidence in our food production system. As such, it is in every stakeholders' best interest to ensure recommendations for the care of animals are based on sound science and are practical.

Working together and speaking with a unified voice to promote the efforts and achievements of all those who are dedicated to providing for farm animal well-being, while continuing to provide the safest, most wholesome and most affordable food products in the world, is the optimum way to earn and maintain consumer confidence in America's food and its producers.

American Veterinary Medical Association

Gail C. Golab

Veterinarians are recognized as advocates for and experts in animal health, welfare, comfort, and well-being; as such they are often called upon to determine what are and are not humane practices in agricultural production. As part of their professional ethic, veterinarians are expected to balance the needs of individual animals, groups of animals, and their clients (livestock producers and consumers). For these reasons, veterinarians represent the archetypal third-party expert when it comes to ensuring animal welfare in food animal production.

Most of a veterinarian's education and training is devoted to disease diagnosis, treatment, and prevention. Likewise, these activities comprise the bulk of a veterinarian's professional services. Because the success of disease prevention and treatment is intimately tied to animal production practices that reduce exposure to disease, minimize injury and stress, and maximize positive physiologic responses, veterinarians welcome the development of standards that positively impact animal welfare.

A science- and performance-based approach to appropriate modification of agricultural practices is the only way to ensure that changes made are those that will actually result in health and welfare benefits for animals. Our training as veterinarians tells us that the scientific assessment necessary to ensure animal welfare must go beyond simple evaluation of production parameters to encompass physiologic and behavioral metrics. Veterinarians also recognize that guidelines established for animal welfare must consider various ethical perspectives, including traditional ethics, popular ethics, religious ethics, and legal ethics. Appropriate evaluation of all of these indices requires a multi-disciplinary approach reflecting input from animal scientists, animal behaviorists, ethicists, producers, and veterinarians.

As per this framework, the American Veterinary Medical Association has developed animal welfare policies and elected to participate in animal welfare assurance programs that it believes reflect a commitment to careful evaluation and application of related scientific data as well as a recognition of mankind's ethical obligations to those species it raises for food. Adhering to best practices in food animal production not only helps ensure that animals are treated appropriately and remain healthy, but also benefits livestock producers and consumers because adherence to best practices generally results in improved production indices and quality of product.

Land Grant Universities

Edmond A. Pajor

HISTORY

Land grant universities were established by the Morrill Acts of 1862 and 1890. Land grant universities are not just colleges and universities; they represent a unique system of education, research and extension. The original mission of land grant universities was to teach agriculture and the mechanic arts. Two key components of the land grant system are the Agricultural Experiment Station and the Cooperative Extension Service.

The Hatch Act in 1887 authorized direct payment of federal grant funds to each state to establish and operate an Agricultural Experiment Station. The main purpose of the Agricultural Experiment Station is to carry out agricultural research in connection with the land-grant university. Another key component of the land grant systems is the Cooperative Extension Service established by the Smith-Lever Act of 1917. Each state extension service is administrated through the state's land grant university. The purpose of extension is to "disseminate useful and practical information" to the public and was designed to link the land grant's academic and research programs to societal needs.

The mission of the land grant university as conceived by Morrill encompasses three major missions: objective or unbiased research (done by the Experiment Stations), non-formal education and information dissemination (carried out by the Extension Services), and classroom or college instruction (taught at each land grant campus).

It is within this original three-fold mission that land grant universities are addressing the issue of animal welfare and the development of production standards that meet the needs of animals, society as well as those of the animal production industry.

TEACHING

Universities are first and foremost institutions of learning. A goal of any university is to prepare its students for the opportunities and challenges they will experience after graduation. There are few issues in animal agriculture that pose as substantial a challenge as animal welfare. Few, but not nearly enough, land grant universities have hired animal behavior/animal welfare scientists to develop courses in animal welfare. Courses have been developed at the undergraduate and graduate level. The recent Purdue-Michigan State effort in distance education resulted in the first long distance course in animal welfare at the graduate level. Educational opportunities in animal welfare should not be limited to only formal courses. The recent Michigan State – Purdue initiative in developing animal welfare livestock judging teams and competitions builds on a traditional education tool (livestock judging) found at most land grant universities. Animal welfare judging teams show great promise as an educational experience for our undergraduates. These two programs are just a few examples of activities that are occurring at other land grant institutions across the country.

RESEARCH

Land grant universities are key sources for unbiased scientific information about animal welfare issues. Land grant scientists research animal welfare issues on all of the major agricultural species. Approaches include measuring health, behavior, physiology, and production. Standards, guidelines as well as general animal husbandry practices need to be based on the best science available. A serious limitation in animal welfare research is simply that there are few scientists trained in this area. During the development of the guidelines and standards described today, clear gaps in our knowledge about specific animal welfare issues have been identified. These gaps need to be filled. Greater emphasis on animal welfare research is needed in terms of a) funding opportunities for both basic and applied research and b) land grant institutions in terms of faculty hires.

EXTENSION

Extension has been the main mechanism by which faculty at land grant institutions have contributed to the development of standards. Activities include direct involvement on numerous national and state committees for a variety of organizations developing animal welfare standards. These include commodity organization, retailers, and animal activists groups many of which have outlined their programs at this conference. In addition faculty and county extension agents work at the local level to update and educate the clientele through workshops, newsletters, websites and other means of technology transfer. For example, the information presented at the recent pork academy symposium on sow housing, sponsored by USDA-CSREES is being made available to extension faculty through printed proceedings, audiotapes, videotapes, and compact discs. Extension faculty at land grant universities will share this information with county extension agents and with the state and local commodity groups with whom they interact.

ANIMAL WELL-BEING CENTERS

The importance and multi-disciplinary aspects of animal welfare are being captured at land grant institutions through the development of university centers for animal welfare. Centers for animal welfare exist at the University of California at Davis, Purdue University and Washington State University to name but a few. The centers vary somewhat in scope and mission but all address animal welfare issues and serve as primary sources of information for the public. Centers encourage multi-disciplinary approaches within each of the three main missions of a land grant university, teaching, research and extension. In addition to these institutionally based centers for animal welfare, mechanisms by which centers can interact with one another need to be considered. Furthermore, the development of multi-state consortiums on animal welfare between land grant universities should be considered and encouraged.

CONCLUSIONS

Faculty at land grant universities are heavily involved with the development of animal welfare standards and programs. In fact, many of the organizations that have been presented at this conference, from retailers to commodity groups, from animal activists to agricultural lobbyists to professional scientific organizations, have drawn on the expertise found at land grant universities to develop their programs. Although faculty at land grant universities have been extremely active in the development of standards, a significant limitation for the future is the low number of land grant institutions that have faculty specializing in animal welfare science. Given the importance of the animal welfare issue to the agricultural industry, retailers and the general public; and the obvious need for additional teaching, research and extension on animal welfare. Land grant institutions should be encouraged to show further leadership in this area by training and hiring additional faculty that will be able to address the increasing need for information on this issue.

Although there is a historic and traditional relationship between land grant universities and agriculture, land grant universities are also public universities and must work well and properly for the benefit of all the citizens of a given state. The land grant is a unique education system focused on providing practical knowledge and information, based on unbiased scientific research, to rural and urban citizens and to the full range of organizations concerned and interested in agriculture

Sustainable Agriculture

Martha Noble

A sustainable agriculture and food system is one that is ecologically sound, socially responsible, and economically viable. All three of these goals are crucial to meet the needs of the communities in which food is grown, raised, processed, and/or consumed. Another key to sustainable agriculture and food systems is that these goals are considered jointly

For member organizations of the Sustainable Agriculture Coalition, attention to animal welfare is an integral issue. For example, the National Catholic Rural Life Conference has initiated an Ethics of Eating campaign that includes animal welfare concerns. The position on animal welfare states: The web of life is one. The way we treat animals is of moral significance. We cannot casually inflict pain on them or treat them as if they were inert beings or stones. Their modes of living deserve study and appreciation. They do not deserve wholesale destruction and obliteration. Animal welfare should be a moral concern.

Another example is the hog production initiative of the Land Stewardship Project's Sustainable Livestock Systems Project, with a primary message that "... production and marketing systems must be integrated. And, an excellent place to start that integration is with the consumer desire for tasty pork that's raised with high regard for the farm's natural environment *and the hog's nature*." Many of the farmers in this project agreed with Jim Van Der Pol, a western Minnesota farmer who raised hogs using confined farrowing crates before switching to hoop house - pastured based production, when he said, "The best day of my life is when I took the Bobcat loader and pushed that junk [the crates] out through the end of the building." He found the stress imposed on his animals from the confinement system also increased the stress on him as a farmer with the direct responsibility for the welfare of his animals.

Alternatives to Industrialized Animal Production Systems

The concentration and industrialization of animal production in large-scale confinement facilities has drawn increasing public attention to the issue of animal welfare, as well as the issues of environmental degradation, threats to public health, impacts on the economic structure of local communities, worker health and safety, and the fairness of production contracts to producers. The public is now being called upon to pay the price for years of neglect and denial of these problems by government agencies, land grant universities and other institutions, many of which promoted large-scale confinement systems.

With regard to animal welfare, research budgets include the development of more pharmaceutical inputs and other "quick fix" style solutions to cope with the problems of stressed and biologically uniform, vulnerable domestic animal populations. Some efforts focus on assessing the effects of minor adjustments such as incremental increases in hen battery cage size. Other measures, such as increased ventilation of confinement systems may exacerbate other problems such as discharge of air pollutants.

Many sustainable agriculture organizations are involved in projects, some with land grant partners and other researchers, to establish and maintain more humane and sustainable animal production systems. Projects include on-farm research of alternative production systems, including assessments of the health, well-being, and productivity of the animals, the profitability of the production systems, and environmental impacts. Efforts also include marketing initiatives and consumer education and outreach. A number of these projects have received funding from the USDA's Sustainable Education and Research Program.

More Interdisciplinary Research Needed for an Integrated and Sustainable Agriculture

In testimony to Congress in 1996, Margaret Mellon of the Union of Concerned Scientists noted the need for increased interdisciplinary agricultural research. She used as an example the proliferation of large-scale confined hog operations. These systems were promoted by land grant universities because of a narrow focus on productivity without an assessment of environmental and public health costs to the public and long-term costs, both to the public and the production sector, of measures needed to maintain

basic animal health. Mellon pointed out that if researchers were looking for the hog production system that best jointly addressed productivity, profitability, improved efficiency, and environmental protection it is doubtful that they would come up with enormous confinement facilities.

Now, USDA and the land grant universities have researchers addressing the multiple problems of these confined animal production systems, including the negative impacts on animal health and well-being, but much of this research is still being conducted in a piecemeal, disjointed fashion. What is needed to develop sustainable agricultural production systems is a research agenda that includes more interdisciplinary research and farmer involvement in designing and carrying out research projects. This research agenda should include elements of social responsibility, including responsibility for the well-being of the animals in the production system and the well-being of the people charged with the care of the animals.

Impact in the U.S. of Food Animal Production Standards in Other Countries

The development and implementation in other countries of standards for food animal production that reflect concern for animal well-being may have significant impact here in the United States. One example is the "five-freedoms" promoted by the Farm Animal Welfare Council in the United Kingdom, which includes the freedom of the animals to express normal behavior by providing sufficient space, proper facilities and the company of the animal's own kind. The general acceptance of this normative criterion has led to the prohibitions in the United Kingdom on veal crates, sow stalls, and tethers. Other European nations have also prohibited various practices. In 1999, European governments agreed in the Treaty of Amsterdam to a stipulation that animals be regarded as "sentient beings", rather than as units of production. The European Union is now poised to phase out sow tethers, sow stalls, veal crates, and battery cage production of eggs throughout the Union over the next decade, conditioned on WTO negotiations to secure protection for European farmers from imports of cheap battery eggs.

These increased standards in other nations provide models for U.S. food animal production that can be influential in a number of contexts. For example, many of the U.S. farmers who have adopted hoop house - pasture systems for hog production have used systems developed in Sweden as their model, with some of the farmers traveling to Europe to see on-farm demonstrations of these systems. Some sustainable agriculture organizations and farmers have also traveled to France to learn about the production and marketing of range produced chicken under the Label Rouge certification program. These models also lend credence to ongoing efforts in the U.S. to convince food retailers to adopt standards and guidelines for the humane treatment of food animals. The existence in other countries of higher standards and production systems with measures to increase animal well-being also defuses the contention that U.S. producers will not be able to compete if U.S. animal welfare standards are raised.

APPENDIX A

Future Trends in Animal Agriculture

Standards for Food Animal Production: Status, Well-Being, and Social Responsibility

Program and Speaker Contact Information

- Moderator:** Richard Reynnells, USDA/CSREES/PAS
800 9th Street SW, Room 3130 Waterfront Centre
Washington, DC 20250
- 9:00 **Welcome**
Alex Thiermann, Senior International Organizations Coordinator
USDA/APHIS/IS
Room 312-E Jamie Whitten Building
Washington, DC 20250
- 9:10 **Introduction**
Dave Brubaker
145 South Spruce Street
Lititz, PA 17543
- 9:25 **Impact and Importance of Standards**
Jill Hollingsworth, Vice President Food Safety Programs
Food Marketing Institute
655 15th Street, NW, Suite 700
Washington, DC 20005
- 9:45 **Panel: Current Standards and Future Plans for Standards: Commodity Groups**
- Dairy**
Robert Byrne, Vice President of Regulatory Affairs
National Milk Producers Federation
2101 Wilson Blvd., Suite 400
Arlington, VA 22201
- Beef**
Leah Becker, Associate Director, Food Policy
National Cattlemen's Beef Association
1301 Pennsylvania Ave., NW, Suite 300
Washington, DC 20004
- Pork**
Paul Sundberg
Assistant Vice President, Veterinary Issues
National Pork Board
P.O. Box 9114
Des Moines, IA 50306

Broilers

Steve Pretanik, Director of Science and Technology
National Chicken Council
1015 15th Street, NW, Suite 930
Washington, DC 20005-2605

Layers

Ken Klippen
Vice President and Executive Director of Government Relations
United Egg Producers
One Massachusetts Avenue, NW, Suite 800
Washington, DC 20001

Turkey

David Meeker
Vice President, Scientific and Regulatory Affairs
National Turkey Federation
1225 New York Avenue, NW, Suite 400
Washington, DC 20005

Sheep

Peter Orwick, Executive Director
American Sheep Industry Association
6911 South Yosemite Street
Centennial, CO 80112

Veal

Paul Slayton, Executive Director
American Veal Association
1500 Fulling Mill Road
Middletown, PA 17057

10:45

Panel: Current Standards and Future Plans for Standards: Specialty Markets**Food Animal Concerns Trust (FACT)**

Richard Wood, Executive Director
Food Animal Concerns Trust
P.O. Box 14599
Chicago, IL 60614

Free Farmed, American Humane Association (AHA)

Adele Douglass, Executive Director
Farm Animal Services
943 South George Mason Drive
Arlington, VA 22204

Animal Welfare Institute (AWI)

Diane Halverson, Farm Animal Advisor
PO Box 3650
Washington, DC 20007

**United States Department of Agriculture, Agricultural Marketing Service
(USDA/AMS) Process Verified**

Jim Riva, Agricultural Marketing Specialist
USDA/AMS/Audit, Review and Compliance
Room 2634 South Building
1400 Independence Avenue, SW
Washington, DC 20250

National Organic Standards Board (NOSB)

Keith Jones, Director of Program Development
USDA/AMS
1400 Independence Avenue, Room 4008
Washington, DC 20250

Duckling Council

Dan Harper
Maple Leaf Farms, Inc.
P.O. Box 308
Milford, IN 46542

11:45 - 1:15 LUNCH (on your own)

Moderator: Michael Appleby
Vice President, Farm Animals and Sustainable Agriculture
The Humane Society of the United States
2100 L Street, NW
Washington, DC 20037

1:15 **Reaction and Response to Use of Guidelines or Standards by Farmer
Representatives**

Paul Sauder

R. W. Sauder, Inc.
P. O. Box 427
Lititz, PA 17543

Charlie Arnot

Vice President, Communications and Public Affairs
Premium Standard Farms
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Kansas City, MO 64105

Paul Willis

Farmer/Manager, Niman Ranch Pork Company of Iowa
2228 Eagle Avenue
Thornton, IA 50479

Paul Rovey

Vice President, United Dairymen of Arizona
7711 W. Northern Ave.
Glendale, AZ 85303

2:00 **Professional and Commodity Organizations: Programs and Observations**

Federation of Animal Science Societies (FASS)

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American Veterinary Medical Association (AVMA)

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Land Grant University

Ed Pajor
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Sustainable Agriculture

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2:45 **Discussion with all speakers**, led by Moderator, Michael Appleby

3:30 **Wrap-up**, David Brubaker

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