CHALLENGES FOR ANIMAL AGRICULTURE-SOCIETAL AND REGULATORY

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INTRODUCTION

Animal agriculture has had many challenges in recent years. These challenges have changed somewhat over the last dozen or so years. I will describe the most prominent issues in 1987 when the animal sciences were first represented on the Washington scene. Then, we can discuss my ideas about those, which will face us during the start of the new century. The Federation of Animal Science Societies (FASS) has plans for three committees to deal with the regulatory and legislative issues, and examples will be described. The status of recent or potential regulatory actions relative to these challenges will be discussed. Finally, we can explore what are seen as some encouraging signs for the future of animal production and the consumption of animal products.

SOCIETAL ISSUES – 1987

In 1987, animal welfare was perhaps the most visible societal issue and challenge for animal agriculture, followed by diet/health, food safety, and environment. An initiative entitled CEASE (Coalition to End Animal Suffering and Exploitation) in Massachusetts would have likely eliminated animal agriculture as a viable endeavor in that state. The effort was defeated at the ballot box by a public education campaign, which portrayed the choice of seeing cattle on the countryside or having pavement and development. One of the primary concerns expressed was veal calves in crates.

Diet-health issues were also a chief concern as the public was told that animal products were primary sources of cholesterol and saturated fatty acids, whose consumption needed to be reduced for a healthy lifestyle. This led to various means to produce low-fat animal products.

Food safety issues and concerns were primarily related to residues of animal drugs and pesticides, the latter presumably being in animal feeds as a primary route of contamination. The issue of feeding low-level antibiotics to animals had been on the radar screen, but was not very high at that time.

Environmental issues focused on the question of multiple use of range lands, particularly in the west. Much pressure was exerted to eliminate food animals from public lands in favor of wildlife and recreational purposes. An accusation that rain forests were being destroyed to furnish fast-food hamburgers was quite prevalent for some time, but finally refuted.

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SOCIETAL ISSUES – 2000

By this year, the order of concern about issues has probably changed to the following order: environmental, food safety, animal well being, and diet/health. Recent regulations by the Environmental Protection Agency (EPA) have focused on animal feeding operations (AFO's) using the Clean Water Act as the mechanism. Manure and nutrient runoff issues have been in the public news, especially with the Pfiesteria outbreaks in the Chesapeake Bay, which are portrayed to be responsible for a massive kill-off of fish. Another very visible and contentious issue has been odors from large swine operations. These situations also raise the broader issue of large integrated animal production operations, often referred to by the derogatory term "factory-farming" by critics or industrialized farming by others. Recently depressed hog prices have pushed the process of integration at a much faster pace, heading toward where poultry production has been for many years.

Food safety issues have exploded with two significant events. First of all was the big outbreak of E.coli 0157:H7 in the northwest US, and in other places since that event. The Food Safety Inspection Service (FSIS) has mandated testing for E.coli in ground beef of USDA, and E.coli was labeled as an adulterant. This means that any lots with a positive finding must be recalled and removed from human food channels. The second issue has been Bovine Spongiform Encephalopathy (BSE), referred to as "mad-cow disease" in the press. BSE devastated British beef production for many years, they are just now recovering from that situation. Claims that mink had a form of TSE that may have come from consuming "downer" dairy cows, led to concerns in the US. Fortunately actions by USDA Animal and Plant Health Inspection Service (APHIS), the animal producer groups, and the scientific community blunted the impact in the US. It is expected that an occasional case of BSE (on the order of 1 out of a million animals), could occur and an extensive planning effort has been worked out to deal with that first case if it should ever be detected. APHIS testing efforts on animals, which are downers, or with certain neurological signs have not yet detected a case in the U.S.

The issue of animal feeds, which come from genetically modified crops (GM), has arisen recently in the US, but it has been a bigger issue in Europe. One reason it has resonated more in the European Union (EU) is speculation that the regulatory agencies in the EU did not react appropriately during the BSE outbreak, thus destroying trust in their government and its regulatory agencies. It is perceived that they denied the link to feeding of ruminant meat and bone meal which prolonged the duration of the situation and allowed it to be much larger than otherwise would have happened. The issue of antibiotic resistance has become a much larger one due to new strains of resistant organisms, such as Salmonella DT104, leading to the EU banning certain antibiotics for feeding to animals. A second urgency comes from the perception that new types of antibiotics are no longer being discovered and that one particularly effective class, known as fluoroquinolones, is susceptible to rapid development of

resistance and should be reserved for human use.

Attempts to introduce animal welfare legislation have not been successful in recent years, partially because various producer groups have voluntarily developed guidelines for care of production animals. These are mostly included in quality assurance programs, and some critics worry that being voluntary, they are not widely adopted. The issue of downer animals and their handling is the one area where emotional appeal to the public could trigger some sympathy for legislation if all involved do not take voluntary steps to control this situation. Bills have been introduced in the House and the Senate on farm animal transportation.

The diet/health effort remains with a cholesterol focus even though several studies demonstrate that dietary cholesterol is less important than physiological control of the level of circulation cholesterol. It is also clear that low-fat diets have failed to control obesity in the human population. A host of high-protein diets, particularly controlling sugar and carbohydrate intake has seemed to attract public attention. The issue of trans-fats in margarine also has led some to say that butter may be healthier in reasonable levels than is margarine.

FASS STRATEGY

FASS has placed a high priority on a Washington, DC office to advocate for animal agriculture. Advocacy requires a high degree of objectivity, the goal of which has to be to build public trust. The key person in the FASS effort is the Executive Vice President for Scientific Liaison (EVP-SL) who is the key staff contact for three committees. The EVP-SL is expected to sense what issues are emerging, and hopefully early enough to provide help. Then to identify the appropriate committee to deal with the issue and to monitor work of the committee so as to have a message that is trustworthy and in appropriate language that can be understood by the target audience. Education and understanding of what is known is important, but the public will never understand all of the complexities. Thus, trust in the opinion of FASS and its scientist is most important. This can be achieved and maintained only by proper balance of information. The proper information must be presented as supportive as possible, but the lack of information or production and processing practices that need to be improved also must be admitted in order to maintain trust. As we all know, nothing is ever absolute, there is always some level of uncertainty. In a democratic and representative society, everything theoretically flows from public opinion, expressed through its elected legislators, and is implemented by the bureaucracy through regulations and orders.

The three FASS committees are designated as Environmental, Food Safety, and Animal Care. A greater description of their spectrum of responsibility and some examples will be mentioned below:

- Environment, Waste Management, and Ecosystems Committee: Working on EPA regulations on Animal Feeding Operations (AFO's); and participation in the Clean Water Coalition.

- Food Safety, Animal Drugs, and Animal Health: Testimony to FDA/CVM on antibiotic resistance and microbial monitoring for resistance; testimony to FDA on GM feeds and safety to animals or their products for human consumption.

- Animal Care, Use and Standards: Briefings through the Farm Animal Welfare Coalition to McDonald's on Quality Assurance programs and the inclusion of animal care; followed by a similar briefing to the trade association, National Council of Chain Restaurants (NCCR). Issuance of the second edition of the Ag Guide for research and teaching of agricultural animals.

Activities of the EVP-SL and these three committees can be followed from reports in the FASS newsletter or through the web page at <www.fass.org>.

REGULATORY ISSUES

As stated above, regulatory activities should reflect public priorities through authorizing legislation by elected representatives. We all know though that the squeaky wheel gets attention, so sometimes the legislators may perceive the need for something that is only a minor concern or a concern of a vocal minority. It also seems at times that our opponents are more vocal on their concerns and operate with a much larger budget that does our scientific organizations. Regulations are usually perceived as negative because once developed they become inflexible and difficult to change as information or practices change. There are times, though, when regulations provide a level of protection against activist claims. The regulatory agencies must be perceived as trustworthy, however, for this benefit to be realized. A lack of trust in EU agencies is believed to be partially responsible for the greater sensitivity to certain issues in the EU such as beef from hormone-treated cattle, dioxin in animal products, and the use of GM crops for human or animal consumption. Some examples of current or potential regulations that could impact animal production are:

- EPA regulations on AFO's in the absence of adequate information on adequate science to make logical regulations. The motivation for this issue has seemed to be associated with the concern of some legislators to fight large, integrated livestock operations in favor of "family farms".

- FDA-CVM guidelines or regulations on approval of new therapeutic antibiotics available only to licensed veterinarians, or to require a Veterinary Feed Directive signed by a veterinarian on new antibiotics for use in feed for either therapeutic or prophylactic purposes. With an EU ban on certain antibiotics, this issue can become a ban on trade with EU member countries.

- USDA-APHIS has a specific exclusion of animals raised for food and fiber from the requirements of the Animal Welfare Act (AWA), but there are always certain pressure groups trying to justify changing that exclusion. A recent act covered the transport of horses for slaughter, although there are long standing regulations for transport of other livestock. The Humane Slaughter Act does not provide requirements for poultry and several attempts have occurred over the last few sessions to define humane slaughter for poultry but no act has yet cleared the legislature. Specific rules for downer animals is another area for which there have been legislative proposals, this is one area where proper attention by producers and marketers is necessary in order to prevent further action.

More successful in impacting production and processing practices would be where the customer, in this case, the retail organizations, demand standards for humane care and slaughter of animals prior to their purchasing the products. That is starting to happen, as a result of the suit against McDonald's in the UK. Even though McDonald's won the lawsuit, the judge indicated that some of the claims of activists could be considered as justified in a future case. Thus the activities to better inform NCCR and its members of the status of Quality Assurance programs and to get their feedback as to the adequacy of such voluntary programs to meet their future needs. Animal production can not continue to exist without meeting the needs of the people who market the products. This will likely lead to further name branding of all animal products in the future.

ENCOURAGING SIGNS

It should be obvious from the above discussion that there have been changes in issues over the last decade or so. The list is longer and some of the issues are more threatening than ever. But there are some encouraging signs at the same time. Recently the decline in beef consumption that has been occurring since the mid-1980 seems to be reversing. This is not expressed as a bias for beef consumption over pork or poultry, but is seen as an indication that the knee-jerk reaction about "red-meat" is subsiding in the mind of the public. A recent spate of "high protein - low sugar" diets may also be somewhat responsible. Recently, five of the top ten non-fiction books on the market were related to such diets or lifestyles. The low-fat craze of the past decade has certainly failed to achieve a reduction in the level of obesity among our population, perhaps because such diets are not satisfying and result only in short-term losses in weight followed by a rebound, sometimes to even higher weights. These diets are based on the concept that sugar and carbohydrate sources that are easily converted to sugar stimulate insulin that is the main hormone responsible for laying down fat. The FDA has also recently required labeling of foods as to their trans-fat content. The major source of trans-fats is hydrogenated margarine. Some think this will give more credibility to those who

suggest butter in limited amounts is really healthier than margarine.

Another encouraging sign is that some food companies are beginning to give customers the choice of meats pasteurized by irradiation. It has been known for many years and well documented that irradiation, when used at appropriate levels, can be associated with reduced microbial loads without interfering with taste or other consumer acceptance traits. Because of a high level of misinformation by activist groups, it was perceived that consumers would not accept irradiated products. The E.coli food experience has motivated hamburger marketers to begin real tests of consumer acceptance and preliminary results confirm those with strawberries and other products that suggest a significant portion of consumers will prefer such products.

Finally, two recent reports are very positive about foods from animals. The first report was produced by the Council for Agricultural Science and Technology (CAST) and is entitled "Animal Agriculture and Global Food Supply". The CAST report makes a number of important points, three of which are: *When measured by "human consumable" inputs and outputs, animals are very efficient. Ruminants, particularly because of grazing and more frequent incorporation of by-products in their diets, can provide more human consumable food than went into their production. Pigs and chickens also do well even though a greater proportion of their feeds is usually human-consumable, particularly in developed countries.

- In areas of the world where animal products are scarce, the inclusion of animal products in the diet is associated with a higher level of physical and cognitive development in children. Thus, a positive health messages from animal products after years of negative messages.

- Animals can have positive effects on the environment if proper production practices are employed versus the always negative impacts portrayed by activists. We all need to do what we can to ensure that we explore this potential for positive effects. This potential was judged to be challenging, but feasible despite projections of marked increases in demand for animal products by 2020.

The second report is from International Food Policy Research Institute (IFPRI) this report confirms and complements many of the conclusions of the CAST report. Their report is entitled "Livestock to 2020:The Next Food Revolution". It concludes that, unlike the supply-led Green Revolution, the "Livestock Revolution" will be driven by demand. Developing-world consumption of animal products is growing almost three times the rate as in developed countries. As incomes rise and populations increase, particularly in urban areas, a massive increase is occurring in demand for foods of animal origin. They also believe that the Livestock Revolution could well become a key means of alleviating poverty in the next 20 years. Even though much of this increased

need for animal products will be met locally, this development certainly provides a positive image for foods of animal origin as well as certain opportunities for worldwide trade. While some will dismiss the CAST report as coming from agriculture, the IFPRI report is less vulnerable to such a criticism.

Interestingly enough, Time magazine recently had an edition focusing on "Beyond 2000". One article in this series explored whether or not we will still eat meat in the next century. Unfortunately, the article employed only old arguments and data leading to a conclusion that we might not. The encouraging side of this is that essentially all of the arguments can be answered by referral to the CAST and IFPRI reports. This article provided several of us an opportunity to call attention to these two reports by letters to the editor. Whether these letters will be published remains an open question, but we now have good answers to some of these long-standing arguments of how wasteful meat production is, how it damages the environment, and how consumption is unhealthy for people.

I hope these thoughts provide you some insights into my assessment of future challenges and opportunities for animal agriculture. I claim no credibility as a prognosticator who knows the future. I present these only as based on the experience of one who was allowed to deal directly with many of these issues while representing the animal science community in Washington, DC for more than a decade. I hope my assessment of positive signs is underestimated and that the challenges are overestimated. If we are all honest, objectives, and committed to doing the best possible, without underestimating the challenges, animal agriculture will continue to provide our public with safe, affordable products throughout the next century.