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## ***Animal Well-Being and Biotechnology***

This topic brings together two issues which have been much on the minds of livestock producers in recent years. Animal welfare and biotechnology are important, not only because the politics of the issues could affect agriculture, but also because producers are good citizens concerned about doing what is right.

A workable definition of biotechnology can be derived by examining the two parts of the word. "Bio" stands for biology, the science of life that includes all living things. "Technology" is collectively tools and techniques which include animal breeding, embryo transfer, genetic engineering, fermentation, tissue culture and so forth. Biotechnology is applying these tools to living organisms to get them to do what you want them to (Witt, 1990).

Biotechnology offers the potential of incredible benefits for society with very little risk, such as a whole generation of safer, more effective drugs. Hundreds are in development including 50 new cancer drugs and 15 new AIDS drugs now being clinically tested (Gorner, 1992). Nearly 8,000 commercial processes which use genetic engineering principles are in the process of being patented. Disease-resistant crops and livestock, more efficient food production, lower fat meat and biotechnology-aided processes can help make significant gains in feeding the world higher quality food. Society has an obligation to develop these techniques.

Biotechnology is playing an increasing role in nearly all scientific fields. To choose not to implement these tools in any one industry or country would leave that industry or country noncompetitive. The application of biotechnology to agriculture has lagged behind human health applications due to a lack of investment which would yield needed basic knowledge in animal physiology, biochemistry and microbiology (National Agricultural Research and Extension Users Advisory Board, 1990).

With all of the intense research efforts to date, not one industrial accident or disaster has befallen society because of biotechnology. This is not to say that food safety, environmental protection and animal welfare issues should not be addressed. They should be addressed, but in an appropriate perspective.

## REGULATION

The Bush administration announced in 1992 that no special regulations were needed for gene therapies and genetically engineered drugs and pesticides. This was good news for the biotechnology industry and for society. The same logic should be applied to the issue of animal well-being in biotechnology.

Biotechnology should be considered as one more in a long line of tools developed for the betterment of human life. Once human and environmental safety are proven for biotechnological procedures and products, their use should be allowed. Additional regulations pertaining to animal well-being in a society utilizing biotechnology are not needed.

It is human nature to develop a system of ideals, practices and prohibitions to both protect us from nature and from ourselves (Kaye, 1992). There are many reasons for society to have regulations and to vigorously enforce them. However, regulations are not always the best way to affect human behavior. Regulatory activity should be focused on the priorities of protecting and enhancing human life. It is not practical, possible, or cost-effective to regulate every aspect of industry and research.

Additional regulations on industries and people who are willing and capable of doing what is right are a waste of time and effort. Unnecessary regulations stifle competitiveness by burdening industries with unproductive paperwork, delays and bureaucracy. The key is to give people involved in production and experimentation the training and information to act responsibly. A more humane, enlightened and compassionate regard for all life, including human life, is a mindset that cannot effectively be legislated. People continue to be bound by a moral obligation to minimize pain and suffering of animals while advancing important interests of their fellow human beings.

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## ANIMAL RIGHTS AND ANIMAL WELFARE: AN OVERVIEW

Philosophical conflicts about whether or not animals have rights dates back to early civilization. The Greek scholar, Pythagoras, was a vegetarian who believed human souls migrate to animals after death. On the other side was Aristotle, who believed that animals existed to serve humanity. The 17th Century French scientist, Descartes, believed that humans alone have souls and on this basis he categorized humans separately from all other matter. He considered animals as machines with no capacity for pain.

Judeo-Christian traditions and teachings support the concept that animals and humans do not have similar interests or rights. Old Testament writings described humans as having dominion over all creatures. The use of animals was permitted for food, service, protection and even sacrifice. New Testament concepts generally support Old Testament descriptions of humanity's dominion over animals, but stopped the practice of animal sacrifice. Some biblical passages encourage kindness to animals. Of course, other religions, such as Buddhism, have very different perspectives on human-animal relationships.

Howard Kaye (1992) wrote, in an essay lamenting the reductive and deterministic view of human life accompanying the Human Genome Project, that more than the categories of heredity and environment are required for understanding human life. He said that humans are moral and cultural beings with the elements of will, choice and responsibility contributing to the essence of their being. He wrote, “Our capacities for reason, symbolic expression and imagination; our aspirations for esteem and respect; and our qualities of curiosity and self-consciousness all may have evolutionary origins and may have contributed to our species’ biological success.” While Kaye uses these arguments to say that humans should be seen in much more than just a biological sense, it also follows that human beings are, in many respects, very different than animals.

While most people and most farmers believe that animals have no rights, they do believe that animals (and humans) should be spared unnecessary suffering through neglect, deprivation or willful abuse. There is a great difference between the humane treatment of animals and humanizing animals. This important difference between animal welfare and animal rights seems to be inherent in the thinking of most people. But as society becomes more affluent and more well-fed, there are more resources available for social movements and philosophical thinking about topics such as humans’ relationships with animals. That society dwells on questions of animal rights and animal welfare when problems of human welfare, human rights and world hunger abound should make us stop and examine our priorities. The truth is that farm animals are treated reasonably well and that the use of animals in medical research greatly benefits people. The use of biotechnology does not change the basic responsibilities that humans already have toward animals as they farm or do research.

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#### ANIMAL RIGHTS AND ANIMAL WELFARE: A CLOSER LOOK

Rare are discussions of animal rights/animal welfare and the use of animals by humans which are objective, scientific and cogent. Two writings which are particularly useful in sorting out the complexities are: *The Ethics of Meat Production* by Kauffman and Rutgers (1991) and *Interspecific Justice* by Van de Veer (1979).

Kauffman and Rutgers reason that animals do not have rights since they cannot exercise or respond to moral claims. Beings with rights must balance their own interests with what is just. Therefore, humans have a moral obligation to treat animals with compassion, prohibit cruelty, prevent extinction of species and respect animals’ basic interests. Basic interests of animals include freedom from pain and suffering, nourishment, freedom of movement, companionship of other animals and protection from predators. The “five freedoms” of the UK guidelines for animal welfare in agriculture could also be taken to define farm animals’ basic interests.

Kauffman and Rutgers admit that most professionals in meat, animal and veterinary sciences have not taken time to thoroughly examine the moral justifications or ethical decision-making on these philosophical issues. They write in detail about the definitions of philosophy, ethics and rights. Ethical principles are presented as guides in making decisions and exercising judgments about how we think about and treat humans and animals. These authors emphasize that before animal-human relationship issues can be resolved responsibly, people must think through all the major issues. Each person should make his or her own decision independently before collective societal decisions can be established. They conclude that the use of animals for food or for experimentation to provide for humans' right to live healthy lives is justified, but that the well-being of those animals should not be ignored.

Van de Veer (1979) cites five ways that humans can relate ethical principles to animals:

—*Radical Speciesism (RS)* is the extreme view held by Descartes, but few people presently believe that animals are objects having no interests. This view would allow people to use animals in any conceivable way without any regard for animal well-being.

—*Extreme Speciesism (ES)* maintains that an animal does have certain interests and needs and is more than an object at the disposal of man. ES would, however, permit subordination of basic interests of animals for even peripheral interests of humans. Most people would reject ES as well as RS because it would allow animal suffering as long as some peripheral human interest was being served.

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—*Interest Sensitive Speciesism (ISS)* is the view that when there is a conflict of interests between an animal and a human being, it is morally permissible to subordinate animal interests to promote basic interests of humans. However, one may not subordinate basic interests of animals in promoting peripheral human interests. ISS would permit the sacrifice of a dog to save a human life, but would not permit animal suffering for frivolous reasons. A majority of people would subscribe to this ethical principle, though classifying various interests as basic or peripheral could be a problem, especially among species at different stages of the evolutionary ladder.

—*Species Egalitarianism (SE)* gives animals equal status to humans when interests are considered. It holds that when there is a conflict of interests between an animal and a human it is morally permissible to subordinate the more peripheral to the more basic interest and not otherwise, regardless of which one is jeopardized. Few people would subscribe to SE.

—*Two-Factor Egalitarianism (TFE)* holds that interests and psychological capacities are both important factors as conflicts of interests between two beings are considered. Many people would subscribe to TFE along with ISS. TFE would allow the sacrifice of an interest of a species with less developed psychological capabilities to promote a like interest of a more developed species. Basic interests of the lower species could be sacrificed for promotion of serious interests of the higher species. TFE attempts to take into account

both the kind of interests at stake and the psychological traits of the beings in question. As in ISS, there is difficulty in objectively assessing these interests and capacities.

Since most people would subscribe to the ISS and TFE approaches described by Van de Veer, humans must consider animals' interests and psychological capacities. Research should continue on animals' perception of pain, stress quantification, healthy physiology, behavioral characterization and the interaction of productivity with these factors.

The degree of morally acceptable animal suffering is higher for medical experimentation than it is for animal agriculture. Biotechnology can likely produce better animal models to study human disease. The potential for great human benefit from these genetically engineered animal models outweighs the fact that animal well-being may be decreased. Biotechnological advances such as genetic engineering may also make it possible to increase the well-being of disease-model animals by making them more able to cope with their surroundings, less susceptible to stress and less sensitive to pain.

#### EUROPEAN ANIMAL PROTECTION

In 1964, Ruth Harrison's book *Animal Machines* was published. Consequently, the UK government set up a Technical Committee to examine animal welfare in intensive livestock systems. The 1965 report of the Brambell Committee led to the establishment of legal definitions of behavioral needs. The Farm Animal Welfare Committee of the UK has articulated criteria to assess animal welfare in agriculture. These so called "five freedoms" are:

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1. freedom from thirst and hunger;
2. comfort and shelter;
3. prevention/rapid treatment of disease;
4. freedom to display most normal patterns of behavior;
5. freedom from fear.

In 1976, a European Convention for the Protection of Animals kept for farming purposes was elaborated by an *ad hoc* committee comprising delegations from most of the member states of the Council of Europe. Ingvar Ekesbo (1991) urged this convention to include some basic rules that limit humans' right to manipulate animals kept for farming purposes. However, he adds that such rules should not limit the possibility to do research in biotechnology. The rules suggested by Ekesbo regarding biotechnology are:

—Animals produced as a result of genetic manipulation procedures shall not be kept for farming purposes unless, through scientific evidence, it is shown that their health and welfare will not suffer;

—No substance shall be administered to an animal kept for farming purposes unless it has been demonstrated by scientific studies of animal welfare that the ultimate effect of the substances is not detrimental to the health and welfare of the animal;

—The animals used, at present, for farming purposes should be preserved in a way that makes it possible to again start breeding a variety that may not have been bred for several years, should this be judged desirable.

Ekesbo concludes, “Man [sic] has always had ethical rules, written or unwritten, for animal husbandry. In our time with rapid scientific achievements, international agreement on ethical rules are necessary for the protection of the animals, the farmers and the society.” While Ekesbo’s proposal for ethical rules regarding biotechnology in farm animals seems reasonable, the rules and criteria are still subject to different interpretations depending on one’s viewpoint. Unregulated ethical guidelines would be preferable to written rules in animal agriculture and in research, except for the most basic research. Anti-animal cruelty statutes, humane slaughter regulations and animal use guidelines for research already in existence are sufficient.

#### CONCLUSION

Animal agriculture contributes to the quality of human life by providing high-quality, nutrient-dense foods. Farmers have a moral obligation to produce this food as efficiently as possible. This will provide the maximum amount of human food while minimizing the consumption of natural resources and effects on the environment. Biotechnology should be used like any other tool to help achieve this goal. As the world population approaches six billion people, these persons’ basic interest in being fed certainly takes precedence over the peripheral interests of animals served by over-regulation of animal production.

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