

# Extension Education Symposium: Enhancing Educational Approaches for Future Changes in Biosecurity and Antibiotic Use in Animal Agriculture

**617 Overview—The importance of biosecurity and animal production.** E. R. Jordan\*, K. J. Lager, and R. G. Bruno, *Texas AgriLife Extension Service, College Station.*

Many factors, including religion, personal income, commodity price, traditions and personal preference, influence demand for animal protein provided by livestock production. Frequently, as affluence in developing countries improves, demand for animal protein expands. According to the World Health Organization worldwide per capita consumption of livestock products increased from 24.2 kg/yr in 1964–66 to 36.4 kg/yr in 1997–1999 and was projected to reach 45.3 kg/yr by 2030. During the same period worldwide per capita milk consumption increased from 73.9 to 78.1 kg/yr and was projected to reach 89.5 kg/yr in 2030. Yet, despite increases in total caloric intake and animal protein intake, the Food and Agriculture Organization (FAO) of the United Nations estimated that 925 million people were undernourished in 2010. The world population is expected to grow from 6.8 billion today to 9.1 billion in 2050, requiring 200 million tonnes of additional meat production. As the world has become more intertwined, disruptions to food production, processing and distribution as a result of natural disasters, disease, economic constraints or terrorist actions can have far reaching effects on food insecurity, further destabilizing the World. For example, the 2001 Foot and Mouth Disease Outbreak in Britain resulted in 6 million animals (4.9 million ovine, 0.7 million bovine and 0.4 million porcine) being culled, resulting in an economic loss of £3.1 billion to agriculture and the food chain plus a significant loss of animal protein to the food supply. A global threat for poultry as well as humans is the H5N1 highly pathogenic avian influenza virus, which emerged in 1997 in SE Asia and has subsequently infected the wild bird population. To protect the food supply for an expanding world population, increased emphasis has been placed on biosecurity, which encompasses the various measures taken to secure a population from exposure to harmful biological agents. Preventing animal disease and the spread of those diseases once introduced into an animal population is one of the keys to fighting hunger, malnutrition and poverty. Furthermore, having biosecurity measures in place so that food supply chain disruptions resulting from a disease outbreak can be minimized is imperative for the well-being of the animal industry, as well as to the human population to which it provides nourishment.

**Key words:** biosecurity, livestock

**618 Biosecurity at the farm level: The role of extension in preventing animal disease introduction.** R. Daly\*, *South Dakota State University, Brookings.*

Biosecurity can be defined as interventions that prevent the introduction of novel infectious diseases into an area such as a farm, state or country. While extension personnel should be aware of and assist state and federal disease control programs where appropriate, it is at the farm level where extension programming has potential for great impact. A wealth of publications that address biosecurity have been published and distributed by extension and other groups. These publications are primarily directed toward general livestock, dairy, beef and poultry operations. Common subjects addressed are use of footbaths/disposable boots, quarantine of new animals, equipment disinfection and visitor/vehicle access. A recent review of these resources revealed that there are discrepancies among recommendations. For example, recommended isolation time for new animals entering beef operations varied from 14 to 60 d. Producers may become discouraged when trying to

account for these differences, and may “cherry-pick” procedures that are most convenient for them or avoid them entirely. Another pitfall of many biosecurity recommendations is that they are often too general to be useful. An individual, farm-specific approach to biosecurity is more desirable than dependence on general recommendations. Tools are available to extension personnel for conducting individual risk assessments, in concert with herd veterinarians, regarding infection control practices. Practical and effective biosecurity measures can then be developed for the operation. Comprehensive materials for beef, dairy and equine facility risk assessment are available through the Center for Food Security and Public Health at Iowa State University. Extension personnel have a unique role in educating youth about biosecurity measures. Animal exhibitions present ideal opportunities to emphasize infection control practices and proper management of animal movements to prevent novel disease back at home. Assisting producers in development of biosecurity plans is an appropriate function of extension personnel. Tools are available to formulate specific, useful recommendations for farms and ranches.

**Key words:** biosecurity, extension

**619 Extension and outreach programs that address contemporary issues in food animal production.** P. D. Ebner\*, *Purdue University Department of Animal Sciences, West Lafayette, IN.*

Most Americans are far removed from animal agriculture. There is an increasing demand by the general public, however, for information regarding various technologies used in modern livestock production. Both consumers and non-consumers of animal products have questions on topics ranging from antimicrobial use to manure application and its potential environmental impact. The land-grant universities, where many of these technologies were developed, are uniquely positioned to provide these individuals with research-based information. In recent years, the Department of Animal Sciences at Purdue University has focused on the development extension programs that examine contemporary topics in food animal production, but target less traditional audiences. These programs have mixed traditional media such as fact-sheets and symposia with newer media including YouTube-hosted educational videos, social networking sites and other web-based tools. Examples of such programs include the Purdue University Concentrated Animal Feeding Operation Team ([www.ansc.purdue.edu/CAFO](http://www.ansc.purdue.edu/CAFO)) which brought together experts in various fields to identify and research public health, environmental and social/economic issues surrounding the expansion of animal agriculture in Indiana. The team developed a series of educational materials and programs targeted to the state and local officials charged with making decisions regarding proper siting of larger livestock facilities. Purdue University more recently developed the Food Animal Education Network ([www.ansc.purdue.edu/FAEN](http://www.ansc.purdue.edu/FAEN)), which is targeted to individuals who may have no connection to livestock production, but have questions or concerns regarding how their meat is produced. The program answers a wide range of questions from ‘why are antibiotics used in livestock production?’ to ‘who is in charge of meat inspection?’ and provides the information in accessible and appropriate forms. Together, these programs provide information to all of our stakeholders so that they can better determine the impact that food animal production has on their lives and their communities.

**Key words:** contemporary issues, extension, livestock production