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## Disease Prevention in Commercial Poultry<sup>1</sup>

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Prevention of disease in commercial poultry requires the producer to actively enforce an effective/comprehensive biosecurity program and to maintain an intact and functional immune system in the chicken.

Biosecurity is a commonly used poultry industry term that can be defined simply as "informed common sense." That is, one develops a basic understanding of the principals of disease transmission and combines this knowledge with good old "common sense." The objective would be to have a program design such that diseases are not brought onto the poultry farm and poultry are not brought to diseases. An effective biosecurity program allows one to keep diseases off poultry farms; or if disease organisms are present, such a program would eliminate them or at least reduce them to a level of little or no significance.

Poultry veterinarians have been attempting to control diseases by improving biosecurity practices. This emphasis on controlling diseases by biosecurity practices rather than relying on vaccines and/or antibiotics has resulted due to changes in the industry itself. As poultry farms became larger and more intensive, disease outbreaks became more costly; as the lifespan of broilers decreased due to improved genetics and feeding, birds did not have sufficient time to recover from diseases and make it to processing.

Veterinarians often find it difficult to convince many farm managers of the importance of biosecurity

programs. The lack of support for these disease prevention programs, which many farm managers may see as costly, time consuming, and just more unnecessary work, is probably due to the failure of previous programs. However, the failure of previous efforts was likely due to poor design and improper implementation of the programs. A comprehensive biosecurity program cannot eliminate the possibility of disease, but it can reduce the probability. In addition, often it is not possible to demonstrate direct benefits from a biosecurity program from just one flock. Improved production usually occurs gradually over several flocks.

Understanding how diseases are transmitted is an important factor in developing a biosecurity program. Studies have consistently demonstrated that approximately 90 percent of the time poultry diseases spread from one farm to another by contaminated people, poultry equipment, and farm vehicles. Exceptions to this include direct ovarian transmission (example: *Mycoplasma gallisepticum*), eggshell penetration (example: Salmonella), and hatcher contamination (example: *Aspergillus sp.*). Airborne transmission of poultry diseases is not considered to be an important means of disease transmission. For example, *Mycoplasma gallisepticum* is horizontally transmitted by direct contact between carriers and susceptible chickens, and by airborne dust or droplets very short distances (such as between cage rows or pens within a house, but not between houses or farms).

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