

Mitigating risk: the importance of biosecurity in an antibiotic-free world

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Recent news reports, such as a Reuters exposé from September of this year, have shed light on the widespread use of antibiotics in American poultry production. The Reuters article details the risks of routinely feeding antibiotics to food-producing animals; these risks include the potential growth of 'superbugs', or bacteria that become resistant to medicines used to treat human illnesses. Findings like this have likely contributed to the public's rising concern about antibiotics fed to farm animals.

As public concern over the use of antibiotics in food-producing animals intensifies, US poultry producers are responding by cutting back on medicating flocks. One problem that arises with this trend is that raising broiler flocks without the use of antibiotics presents greater disease control challenges. In order to combat these challenges, poultry producers need to find other ways to promote broiler health. Antibiotic use in commercial livestock production can be traced back to the 1940s, when scientists discovered that penicillin, streptomycin, and chlortetracycline were effective ways to help control disease outbreaks in chickens.

In addition, these medicines were found to keep the chickens' digestive tracts healthy, enabling them to gain more weight without eating more food. The industry's use of antibiotics grew steadily over the years; today, about 80% of all antibiotics used in the US are given to livestock.

The risks of excessive use

The routine, low-dose use of antibiotics in chickens can contribute to the rise of antibiotic-resistant bacteria, which is becoming a major public health concern. Typically, only certain strains of bacteria are naturally resistant to drugs. However, when antibiotics are used, they kill non-resistant bacteria, enabling the drug-resistant bacteria to grow and take over.

According to the Centers for Disease

Control, approximately two million people in the United States become sick with infections that are resistant to antibiotics every year.

More than 23,000 of those people die on average each year. Because of this negative public health effect, and the perception of its connections to the perceived risk of antibiotics in food production, many commercial poultry producers are making a commitment to lessen their use of antibiotics.

Promoting flock health

Against this background, it is more important than ever for poultry producers to leverage additional technologies and solutions available to them to promote broiler health.

First found to be efficient over 30 years ago, the in-ovo vaccination of chicks has been proven to offer effective protection against infectious agents during the first three days after hatch. In-ovo vaccination came about in part from observations that chickens' immunologic functions were developed before they hatched, enabling poultry producers to address infection at an earlier stage than traditional post-hatch vaccination.

Vaccination at day 18 stimulates the chick's immune responses with the result that in-ovo vaccinated birds have already developed significant protection by the time of hatch, reducing the risk of early exposure to infectious agents compared to those provided with post-hatch vaccination. In-ovo vaccination is today used in commercial applications worldwide in the poultry industry.

Biosecurity

Implementing advanced in-ovo vaccination techniques can also help counteract the difficulties

brought about from reduced antibiotic use by providing improved solutions to fight disease. Dangers such as airborne pathogens can enter eggs during inoculation, leading to bacterial contamination, compromising a hatchery's hygienic environment and lowering overall hatchability rates.

Fortunately, newer in-ovo vaccination techniques are able to more effectively protect broiler health.

Poultry producers should look for systems that feature a single-needle design, which can penetrate each eggshell to provide precise vaccine delivery, ensuring that embryos are inoculated safely and effectively. A single-needle design, combined with an effective sanitation system will remove any bio-films and debris that can potentially cling to needles.

For optimum flock health, poultry producers should avoid technology where needles can 'hook' or bend over with repeated use, spreading contaminants during the transfer process.

Advanced systems such as the latest Vaxinator 1000 from Sanovo Vax also offer a full-cycle disinfection of needles and injectors after each inoculation maximises biosecurity and enhances sanitation. This critical part of the high precision sanitation delivery system ensures needles are fully submerged for consistent sterilisation.

A single sick bird or infected egg can disrupt everything and put your entire hatchery operation at risk.

At Sanovo Vax, we understand the significance of disease prevention, especially in chicken houses where contamination can spread quickly.

Our technologies help maintain sanitary operating conditions after each and every vaccination, treating every individual egg as a potential risk or reward to your hatchery's productivity. ■

References are available from the author on request

