

## **Role of live vaccines and biosecurity in control of mycoplasma and reduction of routine antibiotic usage in chickens.**

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### **Abstract**

Antibiotic agents are essential tools for treating and controlling bacterial infections in poultry production. The term judicious use of antibiotics implies optimal selection of drugs, dosage and duration of treatment, along with a reduction in inappropriate and excessive use as a means of slowing the emergence of antimicrobial resistance. A fundamental principle common to most guidelines is that usage of antibiotics can never replace deficiencies in hygiene, husbandry and biosecurity measures on the farm.

The growing trend towards antibiotic free (ABF) chicken and reduced use production systems has prompted many poultry companies globally to re-strategize their traditional disease management practices. When flocks are raised with fewer or no antibiotics, they are naturally more susceptible to disease caused by primary or secondary infections. This presents a huge challenge for poultry veterinarians. Making adjustments in nutrition, stocking densities, shed rest and housing help reduce disease pressure. But in the end, finding ways to boosting immunity and giving chickens ‘more vigour’ coupled with sound biosecurity measures could be the best strategy for maintaining the health and welfare of these birds.

Respiratory diseases, caused by viruses or bacteria, brought on due to primary damage caused by *Mycoplasma gallisepticum* (MG) and *Mycoplasma synoviae* (MS), has been well documented in literature by renown experts in the field. The aim should be to effectively control mycoplasma infections through hyper-immunity through the use of live vaccines that are safe and prevent vertical transmission thus eliminating the use of routine antibiotic administration. This has been demonstrated by many authors from various countries where breeders, when vaccinated with live MG ts-11 and MS-H vaccine at 4 to 6 weeks of age, did not require the routine antibiotic programmes in the breeders and their progeny for their whole productive life.

The use of antibiotics at subtherapeutic levels is increasing in response to increasing demands for food animal products worldwide. This prophylactic use of WHO listed critical antibiotics is recognised as one of the main reasons of development of antibiotic resistance in pathogenic bacteria. This raises serious human health concerns when humans are exposed to this antibiotic-resistant bacteria via direct or indirect pathways.

The use of antibiotic agents in animals cannot be used as a ‘scape goat’ for the emergence of bacterial resistance. We, the veterinarians, must defend the use of our most important therapeutic tool (the antibiotics) and this can only be achieved by responsible, professional prescribing. That being said, the use of antibiotics as growth promoters (AGPs) or prophylaxis has to stop immediately for world health.