MSH - The ONLY live MS Vaccine
Solution from Down-Under

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For a long time antibiotics have been used in poultry and egg production but there is considerable consumer/ regulatory pressure, price pressure and technical reasons why the administration of antibiotics on a routine basis needs to be phased out of these production systems.

The development of resistance in target and non-target organisms is just one reason why antibiotics will be removed. For exporting companies we may see trade barriers erected to products that have been produced with antibiotics to prevent spread of resistance determinants. The puzzle now is how to produce poultry meat and eggs without antibiotics on our current farms.

Many innovations in poultry management have had profound effects on the health of modern flocks. The implementation of biosecurity has massively decreased the movement of most pathogens except those with airborne and/or vertical transmission. The airborne infections are still particularly a problem in areas of high density. The attention to the elimination of vertically transmitted breeding lines has given producers at the commercial level the option of pathogen freedom. The implementation of single age sites and all-in, all-out programmes, improved building construction, cleaning and disinfection have all been significant steps. The development of vaccines has allowed disease to be controlled where the infection could not be controlled. If the vaccine completely stops field strain infection this will have further advantages.

Around the world many poultry operations have been able to control all regular infections except Mycoplasma synoviae (MS). Thus control of MS has limited the ability of poultry operations finally to run without routine antibiotic programmes. A variety of factors have contributed to the persistence of MS to effective control. There are more active reservoirs for MS (layers etc.) as control has not been as effective.

For the last piece in the puzzle to eliminate routine antibiotic use in poultry production

**Disease/pathogen** | **Antibiotics** | **Replacement** | **Comment**
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Mycoplasma gallisepticum (CRD and suboptimal production) | Routine administration in broilers (not penicillins or phosphomycin) and day 20-22 | MS free replacement antibiotics where necessary | Synergistic effect with mycoplasma
M. synoviae (CRD, EAA, peritonitis and suboptimal production) | Routine administration in broilers (not penicillins or phosphomycin) and day 20-22 | MS free replacement antibiotics where necessary | Synergistic effect with mycoplasma
Coryza (A. paragranulosum) | Antibiotics when clinical signs | Vaccination | Not all sites have this problem. Better understanding and vaccines needed
Fowl cholera (P. multocida) | Routine antibiotics supplementing vaccination | Vaccination, concrete floors and rodent control. Stress minimisation | Not be suppressed by antibiotics
Salmonella | Resistance | Freedom and vaccination | May not be suppressed by antibiotics
E. coli and others | Resistance | Hygiene | May be non-specific
Respiratory viruses and vaccines NDV (esp LaSota), APMV, IBV, HR | Control of secondary bacterial infections including vaccine reactions | Better or more appropriate vaccines | Synergistic effect with mycoplasma.

Routine antibiotic treatment is necessary in the progeny of mycoplasma infected breeders and often the breeder themselves. Treating this massive biomass is expensive even if antibiotics are locally cheap.

These properties of MSH have also been used to control MS associated diseases like infectious synovitis, CRD (especially in broilers) and Egg Apical Abnormality, and decrease antibiotic dependence and subclinical effects on egg production and egg FCR. Furthermore, MS field strains can be demonstrated to be displaced by this vaccine. In areas where MG and MS need to be controlled MSH allows ts-11 to be used more effectively by eliminating a need for routine antibiotic applications targeting MS challenge and effects post ts-11 vaccination. Vaccination is the solution for infections that cannot be consistently excluded from poultry flocks. Progressively vaccination technology has tried to provide protection against these infections and MS control was the final piece needed to wean poultry and egg production off routine antibiotic administration. This strategy including MSH is now starting to be used extensively around the world.

Mycoplasma synoviae – the last piece in the puzzle