

Top breeder performance with improved mycoplasma control

by Chris Morrow, Bioproperties Pty Ltd, Australia.

A medium sized broiler day old chick supplier into the Indonesian market, P.T. Peternakan Ayam Manggis, use Cobb 500 grandparent stock and have a production base of about 800,000 parent stock. They also have Hisex layer breeders and sell day old layers. Over the last decade, since switching to Cobb for broilers, they have been improving performance with investments in feed milling and other sectors of production but performance was still below expected and the appearance of clinical respiratory disease in lay seemed to be an intractable problem. The use of US\$85,000 of tylosin per year and vaccination with F strain MG live vaccine appeared to make no difference.

The technical staff at Romindo suggested they try live ts-11 M. gallisepticum vaccine and live MSH M. synoviae vaccine. The advice included the complete removal of routine antibiotics. Having the same strategy for MG and MS control has the advantage that there is no cross interference. For example the continued use of routine antibiotics after live mycoplasma vaccination

probably leaves the control of the mycoplasma solely to the antibiotics – all live mycoplasma vaccines have no acquired resistance. This can be problematic if the local mycoplasma strains are resistant to antibiotics and certainly not sustainable.

The live vaccines MSH and ts-11 are given at 31 days of age by eyedrop: one vaccine in each eye. The results were dramatic across the whole parent stock production and are presented in Table 1.

The feed per egg in some flocks was as low as 280g per saleable chick and this saving in feed more than pays for the vaccine in real time despite any volatility of the day old chick price.

The veterinary staff did not have access to a lot of diagnostics but do try to monitor vaccine responses where possible. Now, no clinical signs are seen, but they do see increasing mycoplasma antibody from 10 weeks. No antibiotics are used after the first week (and they are avoided after vaccination). The vaccination programme also includes VG/GA NDV vaccine (Avinew) and APMV vaccine (Nemovac) allowing better control of these respiratory pathogens.



Airsacculitis in pipped embryos

In another ts-11 and MSH mycoplasma vaccinated flock in Indonesia we observed pale eggs and an egg production drop that coincided with seroconversion to avian metapneumovirus (AMPV) at the peak of lay. On clinical examination of this farm there were almost no clinical signs of swollen head syndrome or respiratory disease in the birds. It seemed that the control of mycoplasma with the vaccines decreased respiratory signs in the field usually seen with AMPV infection. These hens rapidly bounced back into production with no chronic effects.

Production at P.T. Peternakan Ayam Manggis has now been running well for over 24 months and peritonitis in lay is also reduced. Maternal antibody to MS and MG can be seen in the day old broilers but customers are not concerned. The improvement in chick quality has reassured them. And there are future potential benefits to the day old chick customers – being free from vertical contamination means the broiler chicks do not need to have routine anti-mycoplasmal antibiotics. This is attractive for people who are trying to make sure that no antibiotic residues get into their product, or having to worry about antibiotic resistance and it is cheaper.

Although no exact diagnosis of the original cause of the respiratory disease was made, the response to vaccination was the solution to the problem. MS control is the final piece in weaning poultry production systems off antibiotics. Now they know how to do it we can expect big growth in the market with Manggis's ability to supply quality breeders and layers. ■

Table 1. Results from the parent stock production.

Parameter	Before	With vaccination	Comment
Respiratory health	Clinical respiratory disease	No respiratory signs in vaccinated birds	Although an exact diagnosis was not obtained the response is impressive
Saleable chicks to 68 weeks	140 chicks	162 chicks	This is now 15 chicks greater than SE Asia average for Cobb 500
Feed required to produce one chick	325g/chick	285g/chick	This pays for the vaccine before you sell a single chick
Hatchability	89% peak average 84.2%	92% peak average 89%	-
Airsacculitis in pipped embryos	>35%	Up to 20% but good hatchability	(see photo)
Antibiotic usage	Routine – every six weeks in feed	None	The inability of antibiotics to completely control the problems suggests tylosin resistance
Chick quality	-	Improved	Fewer customer complaints