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HATCHERY VACCINATION

TOWARD A FULL CONTROL OF VACCINE ADMINISTRATION

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Vaccination of the birds at hatchery started in the 70's to face huge losses due to Marek's Disease, especially in USA for broilers. The success achieved by this concept of prevention encouraged research and companies to develop new products and equipments to this segment and over the years vaccination at hatcheries has become an increasingly important practice in the poultry industry.
Nowadays, large producing countries like USA, Brazil or some EU countries reach 100 % of broilers injected in ovo or at day-old and sprayed at day-old. African, Middle East and Asian countries are largely practicing as well spray and injection at day-old for the control of Newcastle disease.
New generations of vaccine, like immune complex IBD vaccine or Recombinant based on HVT vector against IBDV, Newcastle disease or Laryngotracheitis, are increasing and strengthening the interest on the hatchery vaccination.

It is not unrealistic to suppose that in few years time, 80 to 90 % of the broiler vaccines will be administered at hatchery. Furthermore, more and more sophisticated vaccination equipment are made available for day-old injection and spray. These tools improve the quality and the comfort of the vaccination.

One can ask what are the reasons of this move from farm to hatchery vaccination, if we consider the cost of investment in tools and specialized employees in the hatchery. Here below are some elements that can help to understand.

Evolution of the Genetic

In the broiler industry, for instance, the age of slaughter of birds has been reduced since 30 years at a rate of 1 day per year due to the genetic improvement and it has increased the relative importance of the hatcheries in the whole process of production.

Infectious Pressure

Very early vaccination is crucial to face early challenge of respiratory virus as Newcastle Disease (ND) and Infectious Bronchitis (IB) and Marek's Disease in the farms.
For Marek's disease, a high field infectious pressure will prompt to vaccinate the chick as soon as possible, i.e. upon hatching, or even before, in order to gain precious hours or days on wild viruses. As vaccine viruses usually multiply slowler than their wild cousins, they will have more time to stimulate the young bird's immunity (Sharma, 1982).

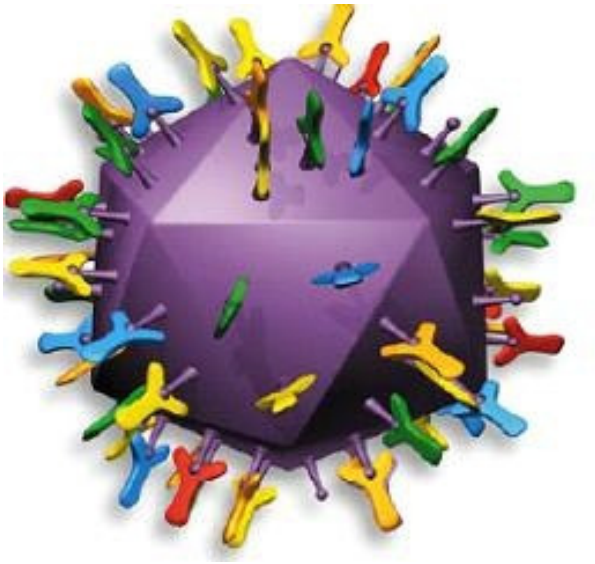
For ND and IB, hatchery is a unique place to deliver by spray an accurate first priming of the general and local immunities to the day-old chicks. Immunities which are so critical in the protection against these respiratory disease. Or further more to accurately deliver a long lasting inactivated vaccine, for example against ND, as practiced in Africa, Middle East and Asia.

Difficulties of Farm Vaccination

There are as well some good practical reasons. The quality of the vaccination at farm level can tremendously vary from farm to farm and round to round. Producers and vaccine suppliers have developed large efforts for years to train technicians and farmers on good vaccination practices. Production managers are working daily on planning and controlling the vaccine administration. However, spray and drinking water vaccination at farm level remain difficult exercises : time consuming, influence by many factors like temperature, quality of water and material as well as technical level. This induces a certain variability of the vaccination results and a number of unexplained failures.

Management of the People

Looking at management of people, it is easier to train and to manage a crew of 10 to 15 dedicated people at hatchery level, than to train and monitor as many farmers as production requests. The availability of modern vaccination tools, in controlled and dedicated places of the hatchery, enforces the professionalism and the specialization of vaccination, allowing a global better control of the process. Sanitary controls, staff training and supervision obey more easily to stricter requirements at the hatchery than on the farm.



New Generation of Vaccines

Marek's disease, Newcastle Disease and Infectious Bronchitis vaccination at day-old are very classical practices at hatchery level.

During the past 5 years, the vaccine companies have made available new generation of vaccines allowing a complete and early vaccination through a single dose administration at hatchery level. These vaccines are the IBD immune complex vaccine or the HVT recombinant vaccine against IBD, ND or LT.

For example, the injection of a vaccine against the Infectious Bursal Disease (such as the immune complex-type – Cevac® Transmune IBD) at the hatchery offers the twofold advantage of having an accurate dose administered to each bird and the individual release of the vaccine virus, depending on the level of maternally-derived antibodies of each chick. This type of vaccine suppresses the need for vaccination dates determination and avoids the risks related to drinking water farm vaccination : i.e., presence of a disinfectant or metal ions in vaccine water, too-long or too-short water fasting, wrong calculation of the amount of vaccine solution, incorrect date of vaccination, breakdown in the cold chain during transport to or storage on the farm of the vaccine, vaccine freezing, broken vials, expired vaccines, use of metallic containers or whisks, etc…. This better control of both vaccine administration and individual vaccine take allows an homogenous coverage of the bird population and results in better control of deleterious effects of IBD on flock performances.

CHALLENGES AHEAD

No matter why companies will adopt the hatchery vaccination, it must be clear that it has its own challenges and some cares should be taken to ensure its good results. Hatchery vaccination implicates changes in the hatchery organization and in the relation between hatchery and field production. The vaccine protection relies on the quality of the hatchery work on the hatching day : missed birds will, the most of the time, be unprotected birds. Ultimately, it requests financial investment on equipment and man power superior to on farm vaccination.

At the end of the day, as a further step in intensification and risk control in poultry production, the hatchery vaccination appears more and more as the solution toward a full control of the vaccine administration, the bird protection and, as a consequence, of the production performances.