

# Vaccination In Broilers



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## Abstract

Health is considered to be the most important thing to achieve good economic performance. Vaccine is important component for livestock's good health status, particularly poultry. Since vaccination plays a significant role in developing immunity against infectious diseases, broiler farmers should vaccinate their flocks to avoid significant financial losses due to high mortality in the flocks. Both live and killed vaccines can be used to give protection to broiler birds. When commercial products are unavailable, then Autogenous vaccines can be used for developing immunity. Ideal temperature for storage of vaccines is 4-8°C. Vaccination, combined with good farm cleanliness and sanitation, can keep the diseases out of the flock, producing safe meat for consumers.

## Introduction

For the prevention of economic losses due to contagious diseases in broilers, vaccination plays a significant role for the modern poultry industries as well as for the poor broiler farmers. Vaccination in case of broiler birds is very essential, as the vaccination against the certain diseases will

not only protect the vaccinated Broiler breeders(BB) but also it may protect their progeny(broilers) from occurrence of those diseases against which the birds are being vaccinated.

There are mainly two types of vaccines are available for the broiler breeders (BB)–

- Live vaccines
- Killed vaccines

## Live Vaccines

Live vaccines contain the live microorganisms, like viruses or bacteria for the certain types of diseases which are responsible for outbreak of that particular disease. In recent advancement, newly introduced live vaccines are termed as Recombinant vaccines. Recombinant vaccines contain a live virus used as a carrier. A part of the genetic material of another virus usually inserted in the genes of this virus (eg, Herpes Virus of Turkeys are used to protect chickens against Marek's Disease which usually carries a portion of genetic material of IBD virus). Vaccination by administering live vaccines used to produce immunity against both of the diseases. Live vaccines can be applied by mass application processes, such as spray or by the drinking water. It is very

unfortunate that, During transportation, live vaccines can be easily damaged, just because of poor storage, exposure to sunlight, excessive temperature etc.

## Killed Vaccines

Killed vaccines are the vaccines which contains the inactivated (dead) microorganisms in an oil emulsion. It is very necessary to inject the killed vaccines to each bird in the flock. These vaccines used to provide long lasting immunity which is very much important for long living birds like broiler breeders. This is actually very effective after "priming" with live vaccines, when live vaccines are administered before administration of killed vaccine. "Autogenous vaccine" is an example of unique type of killed vaccine. When a pathogenic microorganism is affecting one or a group of flocks of broiler birds and when there is no availability of any commercial product, Autogenous Vaccine appeared to be more helpful in prevention of those diseases.

**N.B:** Autogenous vaccine is prepared from cultures of microorganisms obtained from an individual and then used to immunize that same individual



against further spread and progress of the same microorganisms.

### Proper storage for successful vaccination

Proper storage is very essential to prevent the spoiling of vaccines. If ideal temperature is not maintained then it may lead to vaccination failure. If vaccination failure occurs, then both broiler breeders as well as the progeny will not be protected from the disease which may lead to increased mortality rate and production loss. The ideal temperature for Live and killed vaccines should be 4-8°C.

### Instructions for proper storage of vaccines

- Freezing temperature should be monitored time to time.
- Keep a good quality fridge as well as a simple Min-Max thermometer which will be used by every broiler breeder for daily checking.
- Alarm installation should be set to give notification to broiler farmers, if there is any fluctuation in the temperature. This will be helpful for the prevention of costly replacement of the vaccines.
- Vaccines should not be exposed to sunlight, heat or disinfectants, because it will lead to severe damage of the live vaccine. But on the other hand, killed vaccines need to be warmed before administration (should be kept at room temperature 12 hours before vaccination or warmed to 37°C

in a water bath for 5 hours).

- Vaccines usually get damaged when administered with drinking water because of the presence of residual chlorine in the water line. To prevent this, stop chlorination 24 hours prior to vaccination, clean and wash the lines properly and use skimmed milk or vaccination tablets.
- Always consult with veterinary doctor and hatchery for proper assistance. Regular vaccination audits and blood test monitoring should be done to check the vaccine titers.

### Importance of vaccination

Every vaccine is important for developing the immunity against the diseases for both broiler breeders and progeny. Below, we have listed few most commonly used vaccines along with their importance are listed below (Table 1).

Live Newcastle Disease (ND) or RD and Infectious Bronchitis (IB) vaccines provide immunity during the rearing period from respiratory diseases; both the diseases are responsible for drop in production efficiency and decrease in egg shell quality. Live

Infectious Bursal Disease vaccines develop immunity in broiler breeders during rearing period. This disease is responsible for causing immuno suppression and mortality.

### Vaccination schedule

Vaccination schedule of broiler birds is mentioned below in Table 1.

### Conclusion

In the above article we have discussed elaborately regarding vaccination in broilers, types of vaccines, storage and the schedule of administration. In broilers, vaccines are widely applied to prevent and control contagious diseases. Their use in broiler production is aimed at avoiding or minimising the emergence of clinical diseases at farm level, thus increasing production and decreasing the mortality rate. At hatchery the broilers should be free of vertically transmitted diseases. To ensure that, essential vaccines should be administered according to an ideal vaccination schedule that takes into account the possible interference between vaccines and the current disease risk.

Table 1: Vaccination Schedule for Broiler Bird

AGE	NAME OF THE VACCINE	ROUTE OF ADMINISTRATION
0 days	Marek's disease (at hatchery)	S/C at neck
5-7 days	RD vaccine (F1 strain)	I/O or I/N
12-14 days	IBD vaccine (Intermediate strain)	I/O or I/N
21 days	RDV La Sota (Booster)	D/W
28 days	IBD vaccine (Booster)	D/W

(S/C – Subcutaneous, I/O – Intra Ocular, I/N – Intra-nasal, D/W – Drinking water)