Vaccine and vaccination

Vaccines train immune system to create antibodies, just as it does when it's exposed to a disease. However, because vaccines contain only killed or weakened forms of germs like viruses or bacteria, they do not cause the disease or put bird at risk of its complications.

Vaccination is a simple, safe, and effective way of protecting the bird against harmful diseases, before it come into contact with them. It uses your bird's natural defenses to build resistance to specific infections and makes it immune system stronger.

Birds respond to vaccines by developing **humoral and cellular immune responses**. Bursa of Fabricius and the thymus serve as the primary lymphoid organs of the immune system. B cells use surface immunoglobulins as antigen receptors and differentiate into plasma cells to secrete antibodies. Three classes of antibodies are produced: IgM, IgG (also called IgY), and IgA. Successful vaccinal response in a flock is often monitored by demonstrating a rise in antibody titer within a few days of vaccination. ELISA is used most commonly for serologic monitoring. T cells are the principal effector cells of specific cellular immunity.

T cell has many different types : helper T which produce cytokines such as interferon , tumor –necrosis factor (TNF) and interlukin-2 play in regulation of initiation of CMI & HI.

T cell : Cytotoxic T cell specialized in elimination of endogenous and exogenous antigens.

T cell : killer T cell elimination of virus infected cell and neoplastic cells and attack parasites.

T cell : suppressor T cell shut down immune response after body cleaed from pathogen.

Second way of spray method

Fine spray :- it's mean distribution of so small particles of water containing virus (50 micron) to the air so it can precipitate deeply in the lower part of respiratory system of the bird for this reason don't use baby chick only in aged bird to prevent respiratory complexes like CRD.