

## **Vaccines and vaccination against infectious bursal disease of chickens: prospects and challenges**

### **ABSTRACT**

Infectious bursal disease (IBD), also known as the Gumboro disease, has been a great concern for poultry industry worldwide. The first outbreak of IBD due to very virulent (vv) IBD virus (IBDV) infection in Malaysia was reported in 1991. The major economic impact of the disease is high mortality and poor performance. The virus causes immunosuppression where if the infected chicken recovered from the acute disease, they become more susceptible to infections of other pathogens and fail to respond to vaccines. Therefore, prevention is important and vaccination has become the principal control measure of IBDV infection in chickens. The conventional attenuated live and killed vaccines are the most commonly used vaccines. With the advancement of knowledge and technology, new generation of genetically-engineered vaccines like viral vector and immune complex vaccines have been commercialised. Moreover, hatchery vaccination is becoming a common practise, in addition to farm vaccination. Currently, the disease is considerably under controlled with the introduction of vaccination. However, occasional field outbreaks are still commonly reported. The demand for vaccines that could suit the field situation continues to exist. The endemicity of disease, presence of challenge in the farm and maternally derived antibody in chicks are affecting the choice vaccine as well as the vaccine development and vaccination strategies. In this review, advances made in various vaccines that have been commercialised or under development, and challenges that they face, are outlined. Furthermore, how the emergence of vvIBDV affect the progress of vaccine development and influence its vaccination strategy are discussed.

**Keyword:** Infectious bursal disease; Infectious bursal disease virus; Poultry; Vaccination; Vaccines