

## NEWCASTLES DISEASE

- ◆ Newcastle disease (ND) is a contagious viral infection affecting several species of fowl including chickens and turkeys
- ◆ The disease initially called **diphtheritic stomatopharyngitis**, was first described in Malaya in 1936
- ◆ Highly transmissible to birds are normally infected through direct contact with diseased or carrier birds
- ◆ Also can be carried on contaminated objects such as **chicken** or **egg crates, feed, vehicles, dust** and **clothing**
- ◆ The virus inactivated by direct sunlight but in cool weather the virus can survive in faeces and contaminated housing for up to 21 days
- ◆ The virus can also persist in poultry products (meat and eggs) and can be carried by migrating wild birds
- ◆ Newcastle disease virus produces transitory conjunctivitis in man especially in laboratory workers
- ◆ Eradication of Newcastle disease is therefore unlikely and there are few poultry species which are resistant to the disease
- ◆ Continual vaccination programmes currently offers the only sustainable prospect for control



## CLINICAL SIGNS

- ◆ **Viscetroptic/Doyle' form**— weakness, increase respiration, opisthotonos and prostration, greenish diarrhea, muscular tremors, torticollis and paralysis of legs and wings
- ◆ **Neurotropic/Beach' form**— marked fall in egg production, severe respiratory signs followed by neurologic signs 1—2 days later, mortality high and may reach 50%
- ◆ **Beaudette form**— Mesogenic pathotype viruses causing this type are used as secondary live vaccines—marked fall egg production, nervous signs are not common, mortality is low
- ◆ **Hitchner' form**— causes mild respiratory infections and Lentogenic pathotype viruses causing this type are used as live vaccines
- ◆ **Asymptomatic enteric form**— Lentogenic viruses cause gut infections without any clinical signs of disease



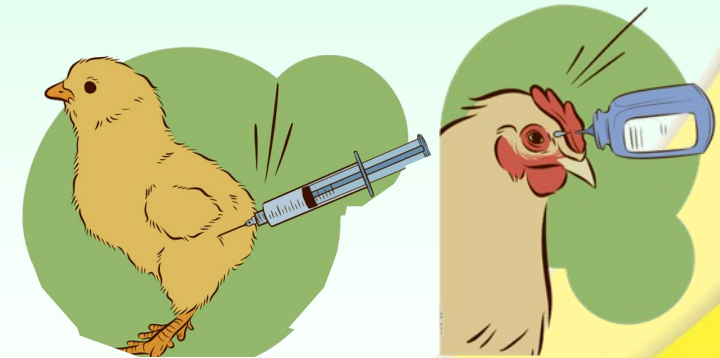
## DIAGNOSIS

- ◆ Clinical observation
- ◆ Gross pathological changes at necropsies
- ◆ Virus isolation from specimens in (respiratory and intestine contents, cloacal and tracheal swab, faeces) embryonated egg
- ◆ Serology HI test confirms the isolate
- ◆ Histopathology



## VACCINES IN MALAYSIA

- ◆ In 1947, a vaccine known widely as **Ranikhet 'standard' strain** was introduced from India
- ◆ Production in Malaysia of this vaccine began only in 1949
- ◆ Production of vaccine subsequently brought the disease under control and ensured the rapid expansion of the broiler industry
- ◆ 1950 more than 3,090,500 doses of this vaccine were produced
- ◆ 1950 only **3 outbreaks of ND** were recorded (Annual Report 1951, Veterinary Department)
- ◆ In 1960s, research in VRI Ipoh indicated that Asplin 'F' vaccine (Weybridge England) was equally effective as B1 and LaSota strain and various delivery system of vaccine were tested out
- ◆ In 1986— 88 research was carried out in VRI Ipoh on the preparation of inactivated ND vaccine
- ◆ The research successful production of a monovalent inactivated ND vaccine ready for market in Malaysia



## PREVENTION

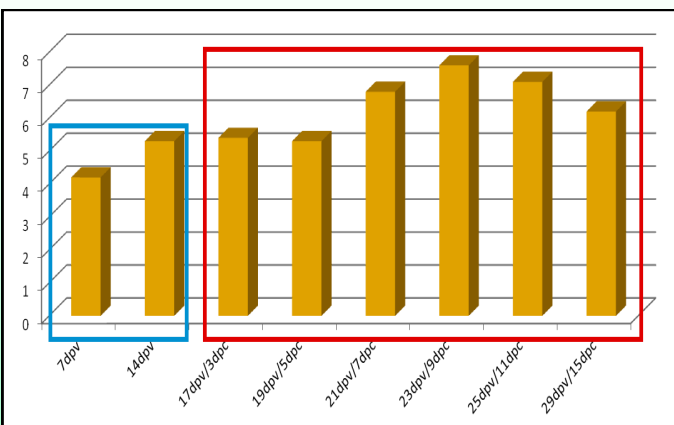
- ◆ Good Biosecurity Practices
- ◆ High— Tittered Vaccines

## NDVAC 1174/08

- ◆ The vaccine is indicated for the active immunisation of healthy chicken in the age of 10 days or older.
- ◆ NDVAC 1174/08 is a live, freeze-dried vaccine for the prevention of Newcastle disease in poultry i.e. chicken, turkey and others.

## Advantages of NDVAC 1174/08

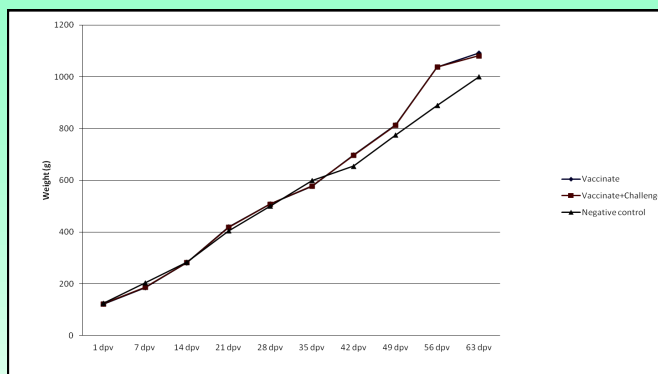
- ◆ It is a lentogenic virus provide full protection against Newcastle disease
- ◆ Based on local isolate
- ◆ Can be administered via eye drop intranasal and drinking water and spray
- ◆ Immunity lasted for 3 months (single vaccination in SPF chicken)



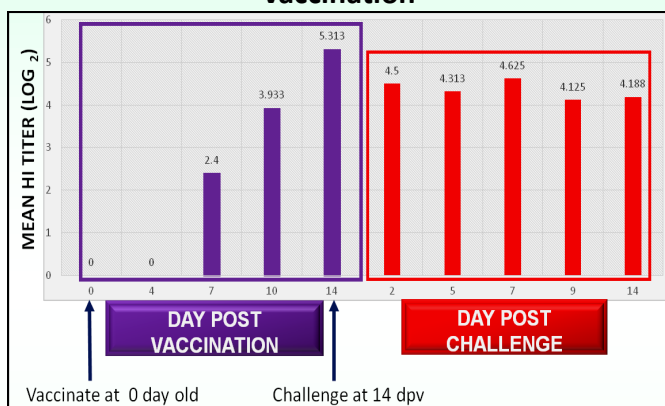
Before

After

The mean Log<sub>2</sub> HI titer before and after challenge



Growth performance of chickens during vaccination



Efficacy study on SPF chicken 0 day old



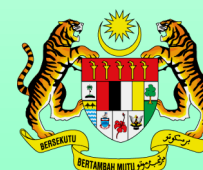
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## NEWCASTLE DISEASE VACCINE (NDVAC 1174/08)



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