NOBILIS®
IB+ND+EDS

MSD
Animal Health

NOBILIS® IB+ND+EDS

Respiratory and reproductive protection in one convenient shot

NOBILIS® IB+ND+EDS provides protection against the following critical layer diseases:

Newcastle Disease (NCD) [1]

- An acute respiratory disease but other forms may occur in which diarrhoea, neurological symptoms or depression may be seen.
- Spread via aerosol and in faeces.
- Respiratory signs include gasping, sneezing, coughing and respiratory rales.
- Nervous signs include tremors, paralysed wings and legs; twisted necks, circling, clonic spasms up to complete paralysis.
- Digestive signs may include inappetence and watery greenish diarrhoea.
- In laying birds there may be partial or complete cessation of egg production.
- Eggs may show shell abnormalities and have watery albumen.
- On post mortem you may see haemorrhages of the proventricular mucosa.

Infectious Bronchitis Virus (IBV)[2]

- IBV usually presents as an acute respiratory infection.
- Some strains of IBV cause nephritis.
- The virus is spread via aerosol and faeces.
- Ingestion of contaminated feed and water, contaminated equipment and clothing facilitate the spread of IBV.
- Respiratory signs include coughing, sneezing, tracheal rales, dyspnoea and conjunctivitis.
- Layers and breeders may show reductions in egg production of up to 70%, eggs shell changes and have watery albumen.
- Egg production and egg quality usually return to normal - this may take up to 8 weeks.

Egg Drop Syndrome (EDS)[3]

- Egg Drop Syndrome '76 is a disease of laying hens.
- EDS affects all ages and breeds - more severe in heavy broiler-breeders and hens that produce brown eggs.
- The virus may be transmitted vertically through the egg, horizontally during lay or sporadically where there has been direct contact with domestic ducks or geese or through contaminated water.
- It may be spread through contaminated eggs and faeces.
- First clinical sign - production of pale-shelled eggs followed by soft-shelled and shell-less eggs in otherwise apparently healthy birds.
- The internal quality of the egg does not appear to be affected and there is no effect on fertility or hatchability of eggs with shells suitable for incubation.
- Egg production may drop 10 – 40 % but usually returns to normal.

ECONOMIC IMPORTANCE OF IB, ND AND EDS[1,2,3]

Economic losses	Disease		
	NCD	IBV	EDS
Mortality	X	X	
Egg production losses	X	X	X
Egg quality losses	X	X	X
Increased vaccination costs in the event of an outbreak	X	X	
Increased biosecurity measures	X	X	X
Treatment of secondary infections		X	
Reduced weight gain		X	
Increased hygiene of egg stations, egg trays and egg trucks			X

THE IMPACT OF EDS INFECTION AROUND PEAK PRODUCTION[4]

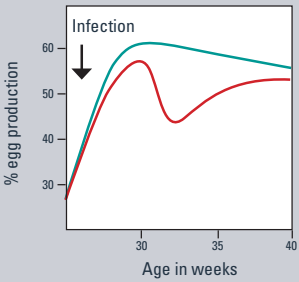
Infection around peak production

NOBILIS® IB+ND+EDS provides complete protection against Egg Drop Syndrome 1976 without priming[4].

The objectives of vaccinating against EDS include[4]:

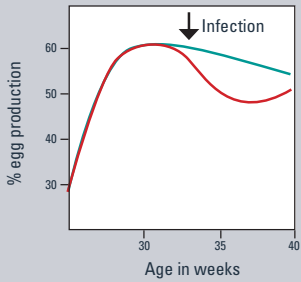
- Preventing a drop in egg production
- Protection against the loss of egg shell quality

Early infection



Non-peaking effect of early EDS '76 infection

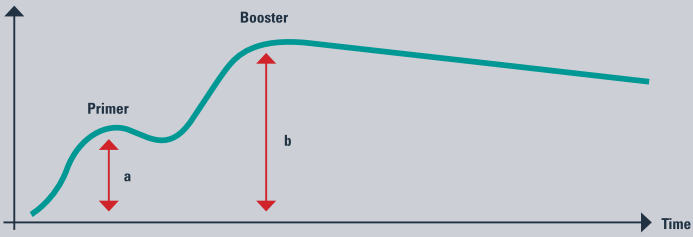
Late infection



EDS '76 infection during egg production

Serological profile of a vaccinated flock[5]

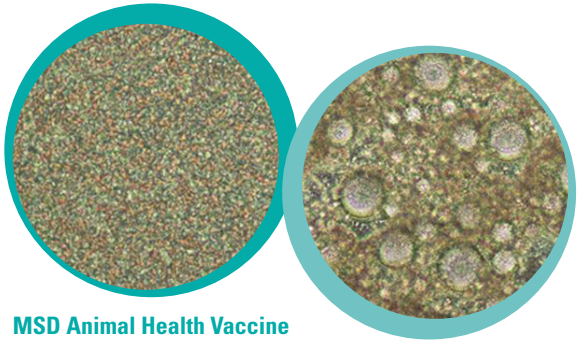
For IB and ND however, it is important to prime birds with a live vaccine prior to vaccinating with **NOBILIS® IB+ND+EDS** to ensure adequate protection against these 2 diseases. In tests where chickens have been vaccinated using this program of live-priming and inactivated boosters there has been found to be a clear correlation between the high antibody titre and protection for the vaccinated birds themselves[5].



VACCINATION

The importance of choosing the correct inactivated vaccine[5]

- MSD Animal Health vaccines are uniform homogenous emulsions ensuring an even distribution of the antigen to the birds.
- An even distribution of the antigens ensures a strong and consistent immune response.
- Following live priming with an inactivated vaccine induces a higher antibody response with an extended duration of immunity for the birds' own protection.
- Inactivated vaccines often utilise adjuvants to aid in creating a stronger immunological response that is more effective and longer lasting.
- MSD Animal Health mineral adjuvants augment mainly humoral immune responses. A strong humoral immune response leads to high uniform long lasting protection in the vaccinated bird and their progeny.



MSD Animal Health Vaccine

Competitor Vaccine

VACCINE ADMINISTRATION

Important points to remember when administering inactivated vaccines

- Always follow package insert instructions when administering inactivated vaccines – vaccinate via the recommended route.
- Mix vaccines thoroughly prior to vaccination.
- Allow the vaccine to reach room temperature before administering to prevent cold-shock from occuring.
- When vaccinating via the intramuscular route, ensure that the vaccine is correctly administered into the muscle.
- Needles should be replaced every 500 – 1 000 birds.
- Perform post-vaccination checks to ensure that the vaccine has been administered correctly.

VACCINATION PROGRAM

Nobilis® IB+ND+EDS should be given to chickens around 16 to 20 weeks of age, but not less than 4 weeks before the expected onset of lay.

For an optimal booster effect, the chickens must be primed with live vaccines of the separate component strains.

The best results will be obtained if vaccination with inactivated IB vaccine takes place 6 weeks or more after administering the live vaccine but under no circumstances should it be done earlier than 4 weeks after priming.

BENEFITS OF NOBILIS® IB+ND+EDS

- Infectious Bronchitis, Newcastle Disease and Egg Drop Syndrome protection in one convenient shot.
- Complete protection against Egg Drop Syndrome 1976 without priming.

BIBLIOGRAPHY

1. Merck & Co. (2016). *Newcastle Disease in Poultry*. Retrieved August 30, 2017, from Merck Veterinary Manual: http://www.merckvetmanual.com/poultry/newcastle-disease-and-other-paramyxovirus-infections/newcastle-disease-in-poultry
2. Browning, G. (2016). *Overview of Infectious Bronchitis in Poultry*. Retrieved August 30, 2017, from Merck Veterinary Manual: http://www.merckvetmanual.com/poultry/infectious-bronchitis/overview-of-infectious-bronchitis-in-poultry
3. Smyth, J. (2016). *Overview of Egg Drop Syndrome '76 in Poultry*. Retrieved August 30, 2017, from Merck Veterinary Manual: http://www.merckvetmanual.com/poultry/egg-drop-syndrome-76/overview-of-egg-drop-syndrome-76-in-poultry
4. Intervet International bv. (2011). As sure as eggs are eggs - Nobilis EDS. Netherlands.
5. Intervet International B.V. (2016). Nobilis Inactivated Vaccines.

NOBILIS® IB+ND+EDS | Reg. No. G2613 (Act 36/1947)

Contains immunogenic strains of Infectious Bronchitis virus (Massachusetts), and Newcastle Disease virus and the BC strain 14 Egg Drop Syndrome '76 virus.

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