# **MEFLUVAC**™ H5+ND7



Inactivated multivalent vaccine for immunization against Highly Pathogenic Avian Influenza H5 subtypes and Newcastle Disease

#### INTRODUCTION

The Newcastle Disease Virus (NDV) classifications include pathotype categorization and genotype distinctions. The utilization of sequencing and phylogenetic analysis of the F gene enables the classification of NDV strains into varied genotypes. Genotypes I and II primarily represent vaccine strains, while the more virulent NDVs are clustered within Genotypes III to X. Intriguingly since the 1990s, Genotype VIII expanded across Asia, South Africa, and parts of Europe; while Genotype VII NDV strains have been frequently reported in Europe, China, the Middle East, and South Africa.<sup>1,2,3,4</sup>

On the other hand, highly pathogenic avian influenza (HPAI) viruses can develop from certain LPAI viruses, usually while they are circulating in poultry flocks.<sup>5</sup>

HPAI viruses can kill up to 90-100% of the flock, and cause epidemics that may spread rapidly, devastate the poultry industry and result in severe trade restrictions.<sup>5</sup>

Avian influenza virus can spread in the farm by both the fecal-oral route and aerosols, due to the proximity of the birds, fomites can be important in transmission and flies may act as mechanical vectors.<sup>5</sup>

Highly Pathogenic Avian Influenza has been found in the yolk and albumen of eggs from chickens, turkeys and quail infected with HPAI viruses.<sup>5</sup>

Vaccination became the primary control measure used to minimize losses.<sup>6</sup>

### COMPOSITION (before inactivation)

- Inactivated reassortant Avian Influenza H5N1 subtype, clade 2.2.1.2  $\geq$  8.5 log10 EID<sub>50</sub> / dose.
- Inactivated reassortant Avian Influenza H5N1 subtype, clade 2.2.1.1  $\ge$  8.5 log10 EID<sub>50</sub> / dose.
- Inactivated reassortant Avian Influenza H5N8 subtype clade 2.3.4.4b  $\geq$  8.5 log10 EID<sub>50</sub> / dose.
- Inactivated Newcastle Disease Virus GII LaSota  $\geq$  8.5 log10 EID<sub>50</sub> / dose.
- Inactivated recombinant Newcastle Disease Virus GVII  $\geq 8.5 \; \text{log10}\; \text{EID}_{_{50}} \; / \; \text{dose}.$

### TARGET SPECIES

Chickens.

### INDICATIONS

For booster vaccination and protection of commercial poultry against Highly Pathogenic Avian Influenza subtypes and Newcastle Disease.

#### **VACCINATION PROGRAM**

Birds can be vaccinated from seven days of age onwards, as per advice from your poultry veterinarian. Booster doses are recommend for long life birds and in case of high-risk seasons and areas.

#### WITHDRAWAL

Zero days.

#### DOSAGE

The vaccine dose (0.5 mL/bird) should be administered subcutaneously in the lower part of the neck or intramuscularly into the chest muscles.



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### TRANSBOUNDARY CONTROL

Inactivated multivalent vaccine for immunization against Highly Pathogenic Avian Influenza H5 subtypes and Newcastle Disease



#### PRESENTATION

MEFLUVAC<sup>™</sup> H5+ND7 is packed and presented in 500 mL (1000 doses) polyethylene terephthalate (PET) bottles.

### ADMINISTRATION

Before use, the vaccine should be shaken well to ensure proper mixing. Sterile injection equipment should be used to avoid contamination.

- <u>Subcutaneous injection</u>: apply in the lower part of the neck. The needle should be inserted just under the skin in a direction away from the head and in a straight line with the neck.
- <u>Intramuscular injection</u>: when applied in the breast muscles the needle must be inserted with a 45° angle to avoid intraperitoneal injection.

For optimal booster effects, the birds should be primed with live NDV vaccines.

#### **STORAGE PRECAUTIONS**

- Store and transport refrigerated ( $+2^{\circ}C$  to  $+8^{\circ}C$ ).
- Do not freeze.
- Store in a dry place protected from direct sunlight.
- Do not use this product after the expiry date.
- Shelf life after first opening the bottle: 3 hours.

#### References

- Abolnik C, Horner RF, Bisschop SP, Parker ME, Romito M, Viljoen GJ. A phylogenetic study of South African Newcastle disease virus strains isolated between 1990 and 2002 suggests epidemiological origins in the Far East. Arch Virol. 2004;149:603–619.
- Herczeg J, Wehmann E, Bragg R, Travassos Dias PM, Hadjiev G, Werner O, Lomniczi B. Two novel genetic groups (VIIb and VIII) responsible for recent Newcastle disease outbreaks in Southern Africa, one (VIIb) of which reached Southern Europe. Arch
- Virol. 1999;144:2087-2099.
  Ke GM, Liu HJ, Lin MY, Chen JH, Tsai SS, Chang PC. Molecular characterization of Newcastle disease viruses isolated from recent outbreaks in Taiwan. J Virol Methods. 2001;97:1–11.
- Liu H, Wang Z, Wu Y, Zheng D, Sun C, Bi D, Zuo Y, Xu T. Molecular epidemiological analysis of Newcastle disease virus isolated in China in 2005. J Virol Methods. 2007;140:206-211.
- The Center for Food Security and Public Health, November 2015, Avian Influenza Fowl Plague, Grippe Aviaire.
- A. Anis, M. AboElkhair, M. Ibrahim, Characterization of highly pathogenic avian influenza HSN8 virus from Egyptian domestic waterfowl in 2017, Avian Pathol. (2018), https://doi.org/10.1080/03079457.2018.1470606.

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