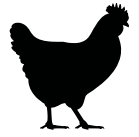


# MEFLUVAC™

## H5 + H9 + ND7

Inactivated hexavalent vaccine for immunization against HPAI (H5N1, H5N8), LPAI (H9N2) and NDV (GII and GVII)

TRANSBOUNDARY  
CONTROL



### INTRODUCTION

Highly pathogenic avian influenza (HPAI) is an extremely contagious, multi-organ systemic disease leading to high mortality in poultry<sup>1</sup>. The disease is caused by H5 and H7 subtypes of type A influenza virus, belonging to the family *Orthomyxoviridae*.<sup>1</sup> These HPAI viruses can develop from certain LPAI viruses, usually while these are circulating in poultry flocks.<sup>2</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>2</sup> Avian influenza virus can spread in the farm by the fecal-oral route and aerosol route. Due to the proximity to the birds, fomites can be important in transmission and flies may act as mechanical vectors.<sup>2</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>2</sup>

Field results indicate that movement control, systematic surveillance for wild birds, serological monitoring in commercial poultry, complemented with biosecurity measures and vaccination, are crucial to mitigate the impact caused by HPAI and LPAI strains.<sup>3</sup>

On the other hand, the Newcastle Disease Virus (NDV) 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 has been frequently reported in Europe, China, the Middle East, and South Africa.<sup>4,5,6,7</sup>

### COMPOSITION (before inactivation)

- Inactivated reassortant Avian Influenza H5N1 subtype clade 2.2.1.1 [rgA/CK/Egypt/ME1010/2016]  $\geq 8.5 \log_{10} \text{EID}_{50}/\text{dose}$ .
- Inactivated reassortant Avian Influenza H5N1 subtype clade 2.2.1.2 [A/Chicken/Egypt/RG-173 CAL/2017]  $\geq 8.5 \log_{10} \text{EID}_{50}/\text{dose}$ .
- Inactivated reassortant Avian Influenza H5N8 subtype clade 2.3.4.4b [rgA/chicken/ME-2018/H5N8]  $\geq 8.5 \log_{10} \text{EID}_{50}/\text{dose}$ .
- Inactivated Low Pathogenic Avian Influenza H9N2 subtype, G1-lineage, [A/Chicken/Egypt/ME543V/2016]  $\geq 8.5 \log_{10} \text{EID}_{50}/\text{dose}$ .
- Inactivated Newcastle Disease Virus, Genotype II LaSota [ME/NDV3]  $\geq 8.5 \log_{10} \text{EID}_{50}/\text{dose}$ .
- Inactivated recombinant Newcastle Disease Virus, Genotype VII [rgNDV1/ME.G7/2017]  $\geq 8.5 \log_{10} \text{EID}_{50}/\text{dose}$ .

### TARGET SPECIES

Chickens.

### INDICATIONS

For immunization against Highly Pathogenic Avian Influenza H5 subtypes, Low Pathogenic Avian Influenza H9N2 subtype, and Newcastle Disease.

### VACCINATION PROGRAM

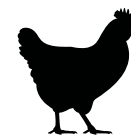
Birds can be vaccinated from seven days of age onwards, as per advice from your poultry veterinarian. For optimal booster effects, the birds should be primed with live NDV vaccines.

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### PRESENTATION

MEFLUVAC™ H5 + H9 + ND7 is packed and presented in 100 mL (200 doses), 250 mL (500 doses), 300 mL (600 doses) and 500 mL (1000 doses) polyethylene terephthalate (PET) bottles.

For further information please contact us:

[kemin.biologics@kemin.com](mailto:kemin.biologics@kemin.com)

or visit:

[kemin.com/eu/en/markets/vaccines](http://kemin.com/eu/en/markets/vaccines)



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PTP-12220

### IMMUNITY

- Onset of immunity: 3 weeks after the first vaccination.
- Duration of immunity: conditioned to the vaccination scheme established for the local epidemiological situation.

### DOSAGE

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

### ADMINISTRATION

Before use, the vaccine should be shaken well to ensure proper mixing. Sterile injection equipment should be used to avoid contamination. Do not use MEFLUVAC™ H5+H9+ND7 if you notice critical irreversible separation of the emulsion.

- Subcutaneous injection: 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.
- Intramuscular injection: in the chest muscles by inserting the needle with a 45° angle to avoid intraperitoneal injection.

### STORAGE PRECAUTIONS

- Store and transport refrigerated (+2°C to +8°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

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7. 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.

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