

# Optimizing DMV/1639 immunity: A Strategic Approach to Infectious Bronchitis Vaccination

Technical Bulletin

Infectious bronchitis vaccine combinations may offer cross-protection against emerging strains like DMV/1639.

Infectious bronchitis is a highly contagious respiratory virus that can spread quickly through flocks. It is especially challenging as a moving target for vaccination strategies because serotypes can quickly evolve and evade established vaccines.

## Keys to bronchitis prevention

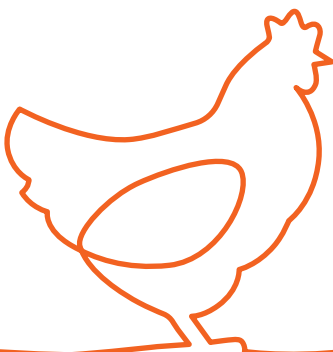
Prevention requires the use of vaccination programs that combine various viral serotypes that result in homologous (immunity to a virus after exposure to that same vaccine serotype) and heterologous (immunity to one viral strain after exposure to nonidentical vaccine serotypes) immunity.

A diagnostic survey of the prevalent field challenge strains affecting a poultry complex will help inform a vaccination strategy, which often requires a combination of multiple infectious bronchitis virus (IBV) serotypes.

## Key takeaways

- ✓ Infectious bronchitis vaccination strategies often require a combination of multiple IBV serotypes.
- ✓ Vaccine combinations containing heterologous strains may offer significant protection against strains for which there is not a commercial homologous vaccine, such as DMV/1639.<sup>1</sup>

This strategy is especially important for strains without a homologous commercial vaccine, such as DMV/1639, which was the third-most isolated serotype and most common wild type in 2020. However, heterologous strains, such as GA08 and Mass, may offer significant levels of protection while allowing continued surveillance of the DMV/1639 wild type.<sup>1</sup>



## Pairing IB vaccines for better protection

In studies, pairing Poulvac® IB Mass with a GA08 vaccine cross-protected better against the DMV/1639 strain than either Mass or GA08 alone.<sup>2-5</sup>

While competing monovalent Mass vaccines may provide similar efficacy, other factors demonstrate the value of Poulvac® vaccines as reliable vaccination options:

- ✓ Poulvac® IB Mass is less reactive than competing vaccines.<sup>2</sup>
- ✓ Zoetis also offers Poulvac® Aero, a vaccine with Newcastle disease B1 plus IB Mass. The B1 strain in Poulvac Aero is not overly aggressive yet effective against NDV challenge.
- ✓ In a study, pairing a competitor IB Mass vaccine with Poulvac® Bron GA08 caused more tracheal damage than was necessary to get solid cross protection.<sup>2</sup>

## Research study

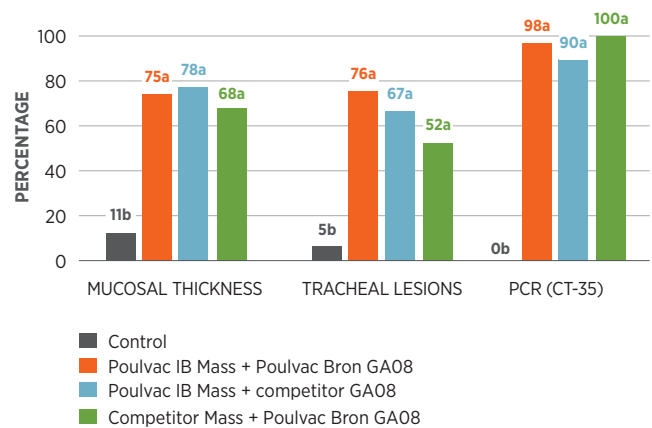
A study was conducted to evaluate the efficacy of various commercial IB Mass (two commercial products) and GA08 (two commercial products) vaccine combinations against serotypes for DMV/1639 challenge.<sup>2</sup>

In the study, 540 1-day-old chicks were divided into five groups of 90 birds and further grouped in five cages (vaccine treatment) with 18 birds per cage. Each group was sprayed with 14 mL/100 chicks of the respective vaccine combinations. At 25 days of age, birds in three cages per group were challenged by eye/nose drop with DMV/1639 IBV.

The study showed that Mass+GA08 vaccine combinations protected birds from a significant DMV/1639 challenge, but numerical differences were observed (Figure 1).<sup>2</sup>

Based on tracheal lesions, Poulvac IB Mass/Poulvac Bron GA08 resulted in 76% protection whereas the competitor IB Mass/Poulvac Bron GA08 combination provided only 52% protection (Figure 1).<sup>2</sup>

## Percent protection against DMV/1639 damage and infections



**Figure 1.** Evaluation of different GA08 and Mass vaccine combinations challenged with DMV/1639 at 25 days of age.<sup>2</sup> a,b Values with different letters are significantly different ( $p < 0.05$ ).

## Important reminders

- ✓ Infectious bronchitis is ubiquitous and can cause production losses if not controlled properly.
- ✓ IBV vaccination programming requires a proper field challenge diagnosis to determine which vaccine serotypes should be used.
- ✓ Zoetis offers a broad IBV vaccine portfolio, supported by an experienced technical service team and diagnostic lab.

**To learn more about these studies, contact your Zoetis representative.**

<sup>1</sup> Data on file, Study Report No. 032419-KL-70AQO-KC6120, Zoetis Inc.

<sup>2</sup> Data on file, Study Report No. RM-0Q0-KC6620, Zoetis Inc.

<sup>3</sup> Data on file, Study Report No. 01-18-70AQO, Zoetis Inc.

<sup>4</sup> Data on file, Study Report No. RM-0Q0-KC6930, Zoetis Inc.

<sup>5</sup> Jordan B, Reith A. Results of an infectious bronchitis virus surveillance program in broiler chickens. In: *Proceedings, Southern Conference on Avian Diseases, International Poultry Scientific Forum*. 2021: T7.