



Elanco™

**POWERFUL *SALMONELLA* PROTECTION**

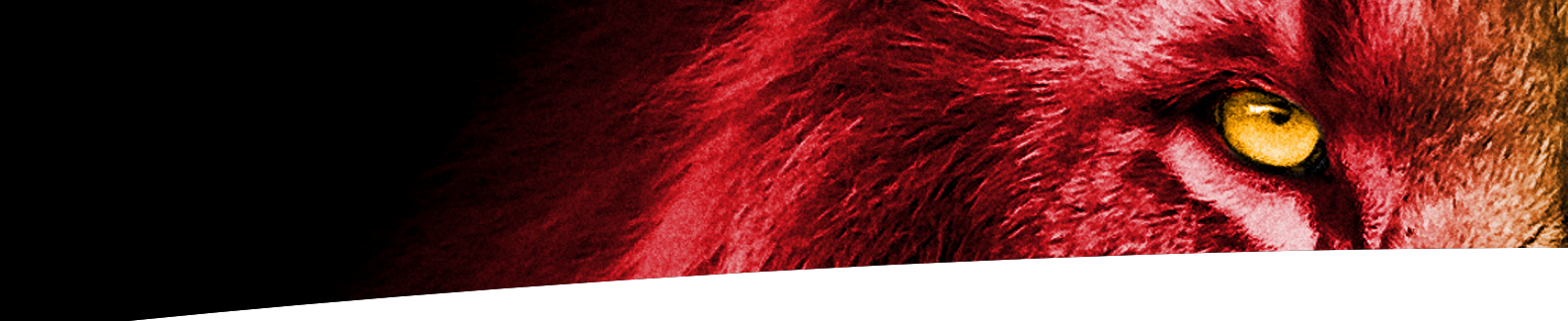
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**THE ONLY LIVE **DUAL-STRAIN** VACCINE  
CONTAINING **S. ENTERITIDIS** & **S. TYPHIMURIUM****

*AviPro*™  
SALMONELLA DUO

Providing **superior, direct protection**<sup>1</sup> against both regulated *Salmonella* strains in layers.<sup>2</sup>

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# OPTIMAL *SALMONELLA* PROTECTION IS A PRIORITY

*SALMONELLA* IS...

## COSTLY

A *Salmonella* outbreak among free-range birds in the UK can cost producers up to **£17 per bird<sup>3</sup>**

ROBUST CONTROL OF *SALMONELLA* REQUIRES A HOLISTIC AND INTEGRATED APPROACH, WITH VACCINATION AT ITS CORE

## CONCERNING

*Salmonellosis* represents half of all global foodborne outbreaks requiring hospitalisation<sup>4</sup> and causes around **59,000 deaths** each year<sup>5</sup>

Excellent biosecurity and hygiene

Effective vaccination strategy

Good monitoring & flock management

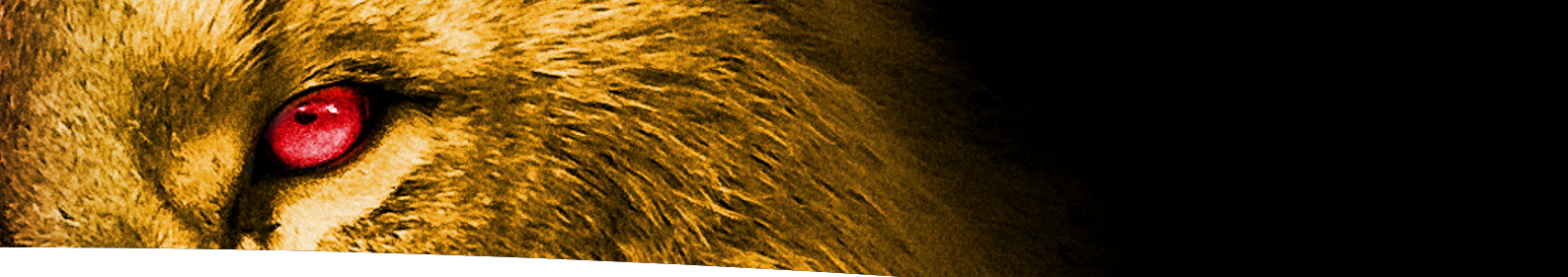
### AviPro *Salmonella* Duo

The only live vaccine that contains two *Salmonella* serovars (*S. Enteritidis* and *S. Typhimurium*)

Superior, direct protection<sup>1</sup> against **BOTH** regulated strains of *Salmonella* in layers<sup>2</sup>

Early protection, from day 1<sup>6</sup>  
Easy administration in drinking water, mimicking the natural route of infection

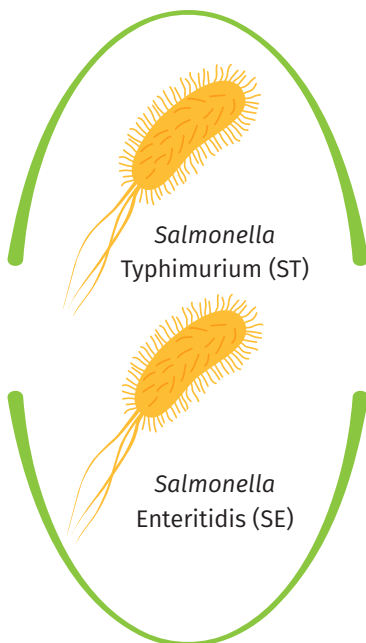
## **BOTH** IS BEST FOR SUPERIOR, DIRECT PROTECTION



**PROTECTION  
REQUIRED**

**VACCINE  
OPTIONS**

**PROTECTION  
ACHIEVED**



**AviPro Salmonella Duo**  
Derived from two target serovars  
matching both target *Salmonella*  
threats (bivalent)

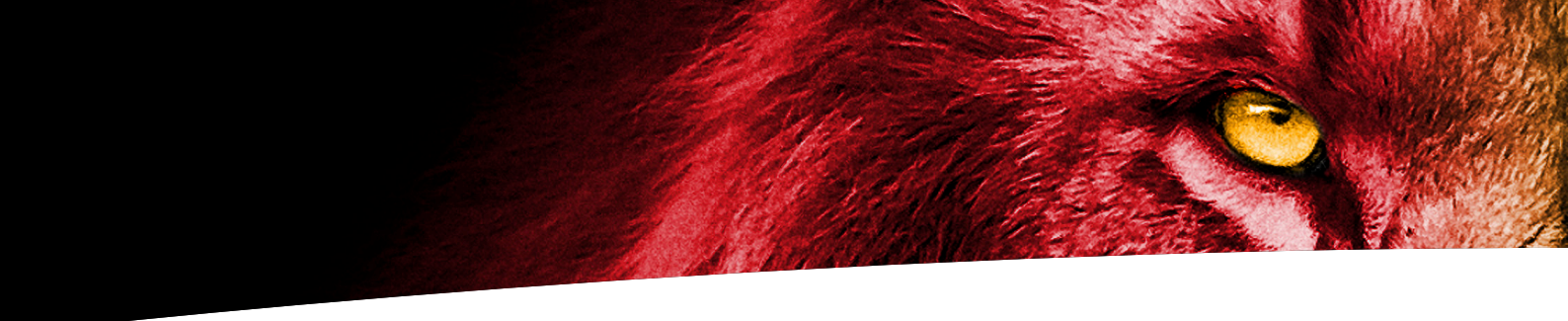
**Strong direct protection  
against BOTH serovars**



**S. Enteritidis live vaccine**  
Derived from a serovar for one  
of the target *Salmonella* threats

Direct protection  
against *S. Enteritidis*  
Variable cross-protection  
against *S. Typhimurium*

***S. Typhimurium* may still infect  
some parts of the bird's system'**



# AVIPRO: LEADING THE FLOCK

## BETTER PROTECTION

When challenged with a field strain of *S. Typhimurium* (at much higher levels than would be seen in the field via natural infection), birds vaccinated with **AviPro Salmonella Duo** had

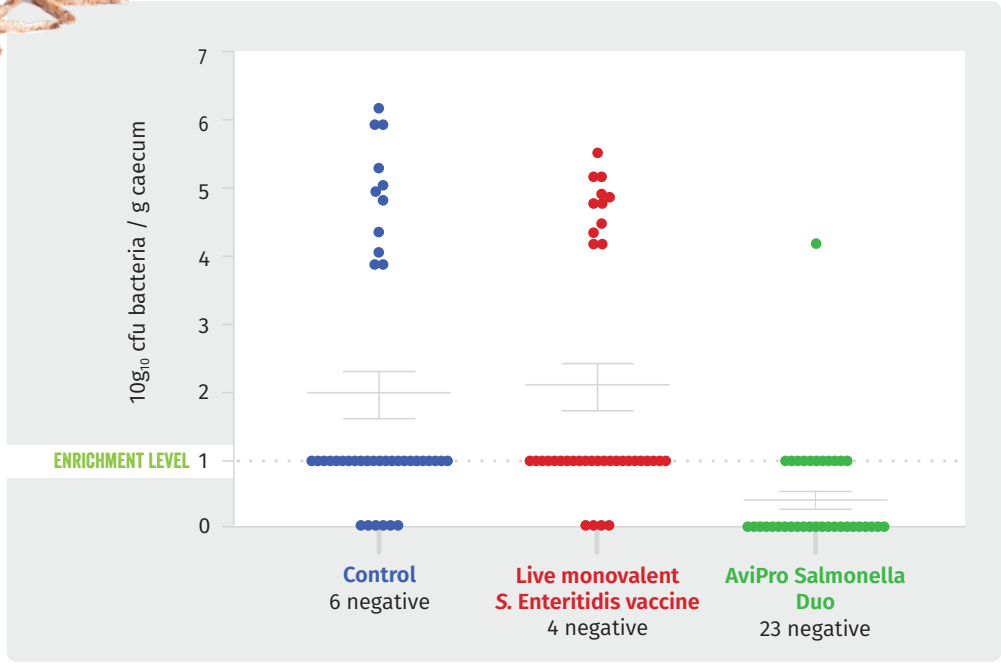
### SIGNIFICANTLY LOWER NUMBERS OF FIELD STRAINS IN THE CAECA AND SPLEEN

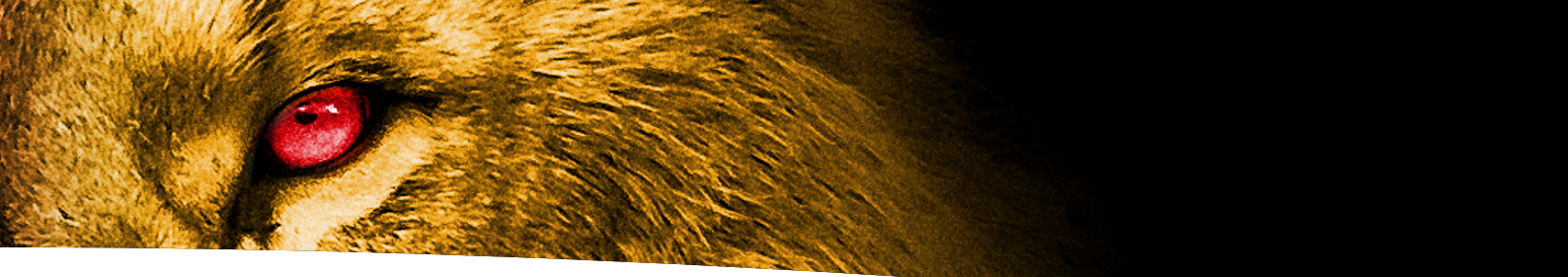
compared with a live *S. Enteritidis* vaccine from another supplier<sup>1</sup>



- ↓ Number of field strains in the caeca
- ↓ Organisms shed by the bird<sup>8</sup>

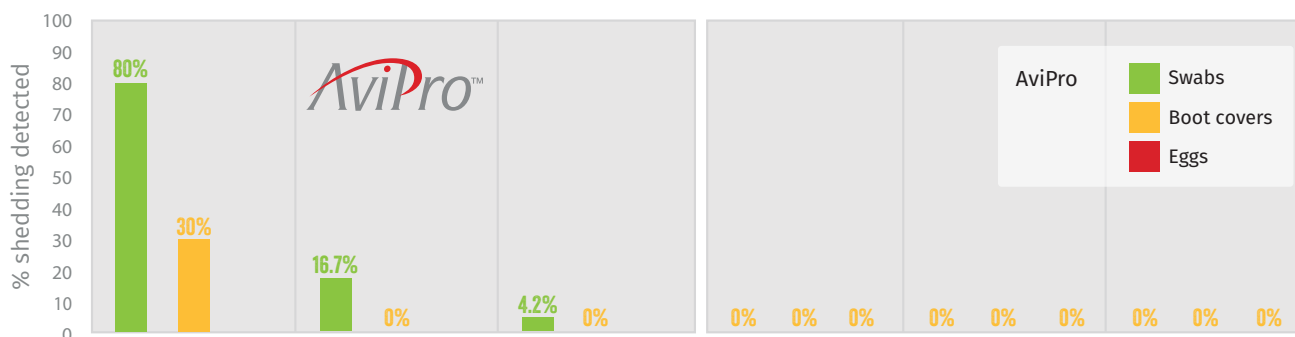
Recovery of *S. Typhimurium* challenge strain from caeca



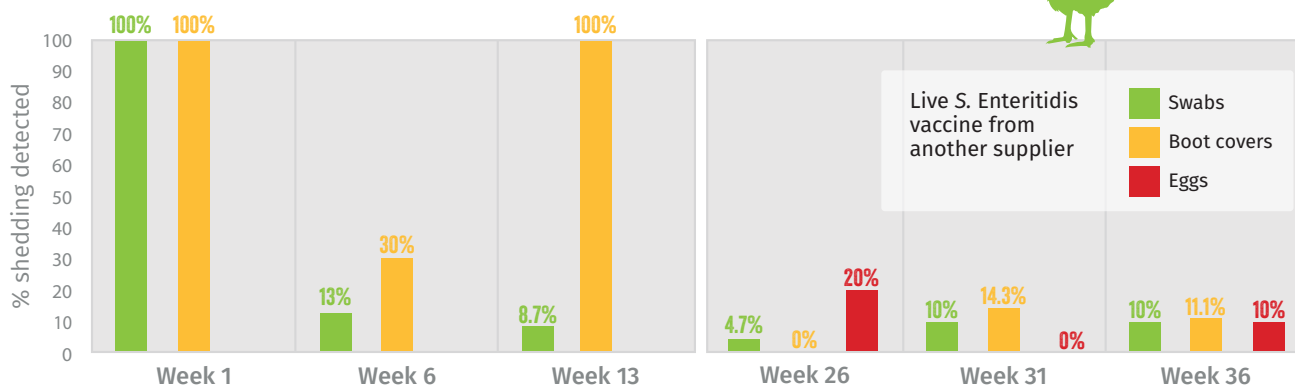


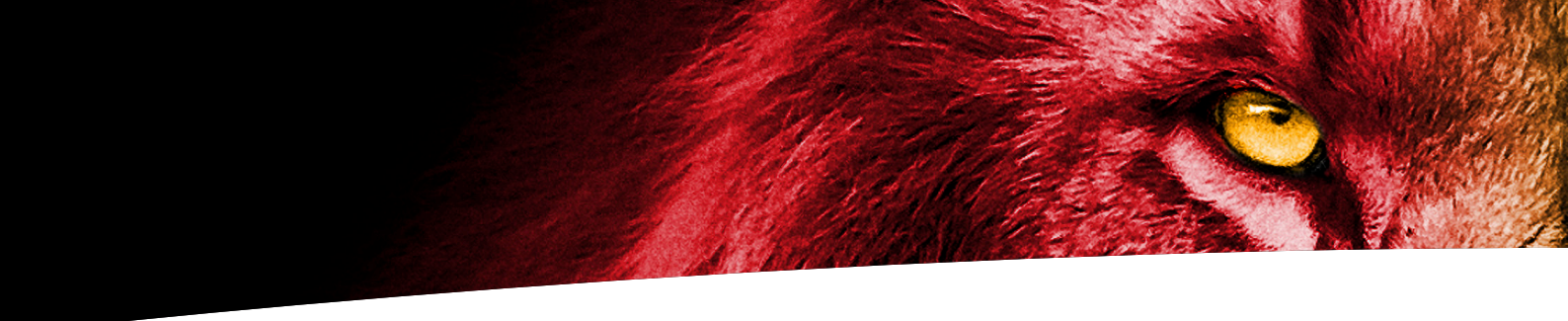
## REDUCED SHEDDING INTO THE LAYING PERIOD

Some live vaccines have shedding patterns that can extend well into the production period, potentially exposing the table egg to vaccine residues<sup>9</sup>. AviPro vaccines provide the efficacy of live vaccines but are not shed by vaccinated birds during the production period.



## REARING PRODUCTION





## IMPROVED EGG SAFETY

There are two possible routes of egg contamination by *Salmonella*:

### TRANS-SHELL

*Salmonella* from contaminated faeces penetrate the shell immediately pre or post-lay, before the cuticle hardens

### VERTICAL

Hen's reproductive tract is infected  
→ *Salmonella* in the yolk, albumen or membranes before laying

**AviPro Salmonella Duo**  
**reduces faecal excretion**  
of *S. Enteritidis* and  
*S. Typhimurium*<sup>9</sup>

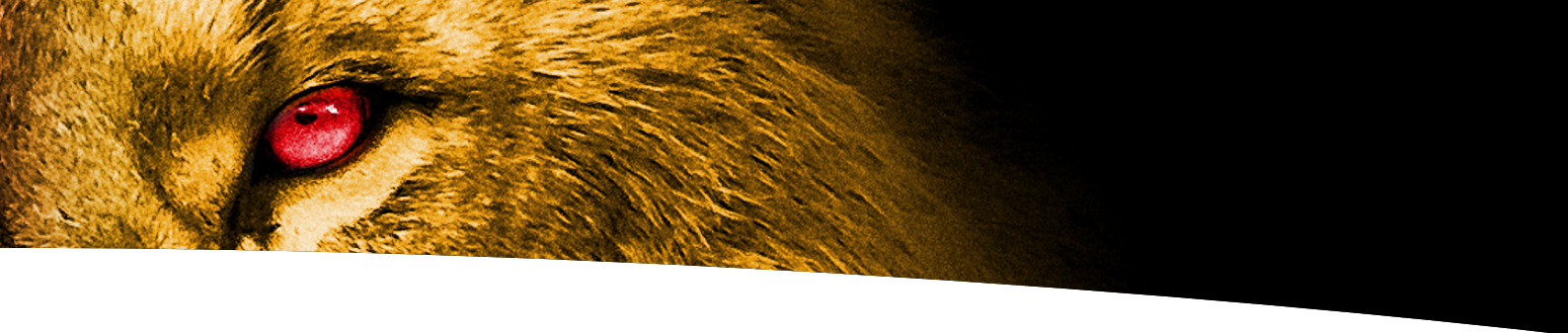
**AviPro Salmonella Duo**  
**reduces colonisation of the reproductive tract**  
of *S. Enteritidis*<sup>10</sup>

**AviPro Salmonella Duo**  
**IS THE ONLY VACCINE THAT PROTECTS EGGS**  
from internal contamination with *S. Enteritidis*.<sup>6</sup>



### EXCELLENT VACCINE SAFETY PROFILE

**AviPro Salmonella Duo** is manufactured using unique techniques to ensure reliable attenuation and genetic stability. The vaccine strain demonstrates reduced virulence and poor survival in the environment, coupled with optimal maintenance of immunogenic properties.



## MORE THAN JUST VACCINATION



FOOD SAFETY PROGRAM

### Food Safety Program (FSP) from Elanco

FSP is a bespoke, systematic and innovative process that **evaluates the risks** related to *Salmonella* contamination at different stages of egg production, **provides tailored recommendations** to minimise risk, and facilitates the development of **evidence-based benchmarking** across the entire industry.

Integrating, analysing and advising on all interventions for *Salmonella* control.  
Science-based, internationally tested and trusted.  
Leading key industry benchmarking.

# POWERFUL SALMONELLA PROTECTION



## Scan here to find out more about AviPro Salmonella Duo

**References:** 1. Koerich, P. and Doblies, D. Comparison of the efficacy of a live bivalent Salmonella vaccine with a monovalent vaccine against a challenge with a Salmonella Typhimurium field strain. IPPE International Production & Processing EXPO, Atlanta (2023). 2. UK National Control Programme for Salmonella in Layers (gallus gallus): 'Laying hens and flocks: poultry testing for salmonella' government guidance. <https://www.gov.uk/guidance/salmonella-get-your-egg-laying-hens-tested> 3. Elanco Market Research Cost of a Salmonella Outbreak 2023 Free Range 320000 - Scrutton Bland 4. EFSA Journal 2021. The European Union One Health 2019 Zoonoses Report. EFSA Journal;19(2):6406 5. WHO Estimates of the Global Burden of Foodborne Diseases 2007-2015. [https://apps.who.int/iris/bitstream/handle/10665/199350/9789241565165\\_eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/199350/9789241565165_eng.pdf). 6. AviPro Salmonella Duo Summary of Product Characteristics b. compared to 2 other SE live vaccines 7. REF-03435 — Development of a third generation vaccine to prevent Salmonella infections Salmonella infections. 8. Barrow, P.A., et al. Faecal shedding and intestinal colonization of Salmonella enterica in in-bred chickens: the effect of host-genetic background. Epidemiology & Infection 132.1 (2004): 117-126. 9. Koerich P; Mueller- Doblies D. (2023) Evaluating the shedding pattern of two live S. Enteritidis vaccines in laying hens during the early phase of production. Poster presented at IPPE International Production & Processing EXPO- Atlanta Jan 2023 10. Gantois I, Ducatelle R, et al. Mechanisms of egg contamination by Salmonella Enteritidis. FEMS Microbiology Reviews. 2009; 33[4]:718-38.

AviPro Salmonella Duo: Lyophilisate for use in drinking water. Statement of the active substance and other ingredients: One dose contains: Live attenuated *Salmonella* Enteritidis bacteria, strain Sm24/Rif12/Ssq, min.  $1 \times 10^8$  CFU\* and max.  $6 \times 10^8$  CFU\*. Live attenuated *Salmonella* Typhimurium bacteria, strain Na12/Rif9/Rtt, min.  $1 \times 10^8$  CFU\* and max.  $6 \times 10^8$  CFU\*. \*CFU = Colony Forming Units. Indications: Chickens: For active immunisation of healthy and susceptible chickens to reduce faecal excretion and colonisation of internal organs with *S. Enteritidis* and *S. Typhimurium* field strains and to reduce colonisation of eggs with *Salmonella* Enteritidis field strains. Onset of immunity: 15 days. Duration of immunity: 52 weeks against virulent *S. Enteritidis* and 46 weeks against virulent *S. Typhimurium* from the time of the last vaccination when used according to the recommended vaccination schedule. Turkeys: For active immunisation of healthy and susceptible turkeys to reduce colonisation of internal organs with *Salmonella* Enteritidis and *Salmonella* Typhimurium field strains. In general, the colonisation of internal organs of vaccinated turkeys with challenge bacteria is reduced compared to unvaccinated turkeys. Onset of immunity: 21 days after first vaccination. Duration of immunity: for turkey breeders: 30 weeks against virulent *Salmonella* Enteritidis and 28 weeks against virulent *Salmonella* Typhimurium from the time of the last vaccination when used according to the recommended vaccination schedule. For turkeys for meat production: duration of immunity for 10 weeks against virulent *Salmonella* Enteritidis and against virulent *Salmonella* Typhimurium from the time of the last vaccination when used according to the recommended vaccination schedule. Ducks: For active immunisation of healthy and susceptible ducks to reduce the colonisation of internal organs with *Salmonella* Typhimurium field strains. Onset of immunity: 22 days. Duration of immunity: 43 days. Vaccination scheme: Chickens (layers and breeders): A single dose from first day of life followed by a second vaccination at an age of 6 to 8 weeks and a third vaccination around the 16th week of life at least 3 weeks before onset of lay. Turkey breeders: A single dose from the first day of life followed by a second vaccination at an age of 6 weeks, a third vaccination at an age of 16 weeks and a fourth vaccination at an age of 23-24 weeks. Turkeys for meat production: A single dose from the first day of life followed by a second vaccination at an age of 6 weeks. Ducks (for meat production): A single dose from first day of life. Administration: For oral use after resuspension in drinking water. **Contraindications:** none. **Adverse reactions:** None known. If you notice any serious effects or other effects not mentioned in this leaflet, please inform your veterinary surgeon. **Withdrawal period:** For chicken and ducks: meat, offal and eggs: 21 days. For turkeys: meat and offal: 70 days after the first vaccination, 49 days after repeated vaccination. **Special storage precautions:** Keep out of the reach and sight of children. Store and transport refrigerated ( $2^\circ\text{C}$  to  $8^\circ\text{C}$ ). Do not freeze. Protect from direct sunlight. Do not use after the expiry date stated on the label. Shelf-life after dilution or reconstitution according to directions: 4 hours. **To be supplied only on veterinary prescription:** POM-V. Further information is available from the Summary of Product Characteristics.

Use medicines responsibly. [www.noah.co.uk/responsible](http://www.noah.co.uk/responsible).

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