



Elanco™

POWERFUL *SALMONELLA* PROTECTION

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

AviPro™
SALMONELLA DUO

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





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 bird³**

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 hospitalisation⁴ and causes around **59,000 deaths** each year⁵

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 protection¹ against **BOTH** regulated strains of *Salmonella* in layers²

Early protection, from day 1⁶
Easy administration in drinking water, mimicking the natural route of infection

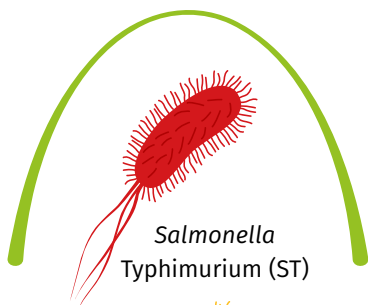
BOTH IS BEST FOR SUPERIOR, DIRECT PROTECTION



PROTECTION
REQUIRED

VACCINE
OPTIONS

PROTECTION
ACHIEVED



Salmonella
Typhimurium (ST)



Salmonella
Enteritidis (SE)



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

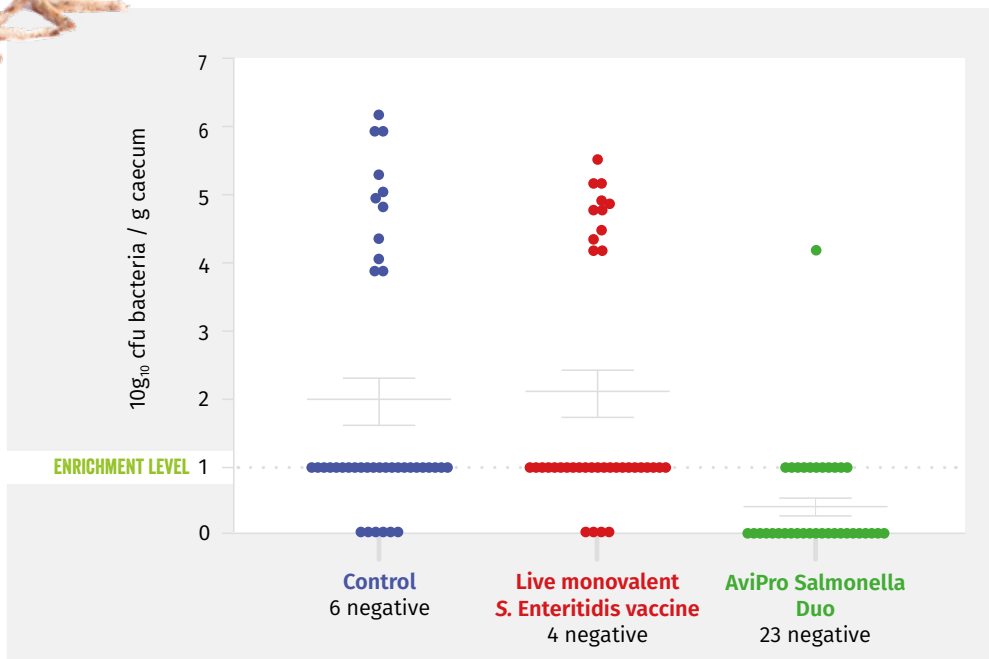
SIGNIFICANTLY LOWER NUMBERS OF FIELD STRAINS IN THE CAECA AND SPLEEN

compared with a live *S. Enteritidis* vaccine from another supplier¹



- ↓ Number of field strains in the caeca
- ↓ Organisms shed by the bird⁸

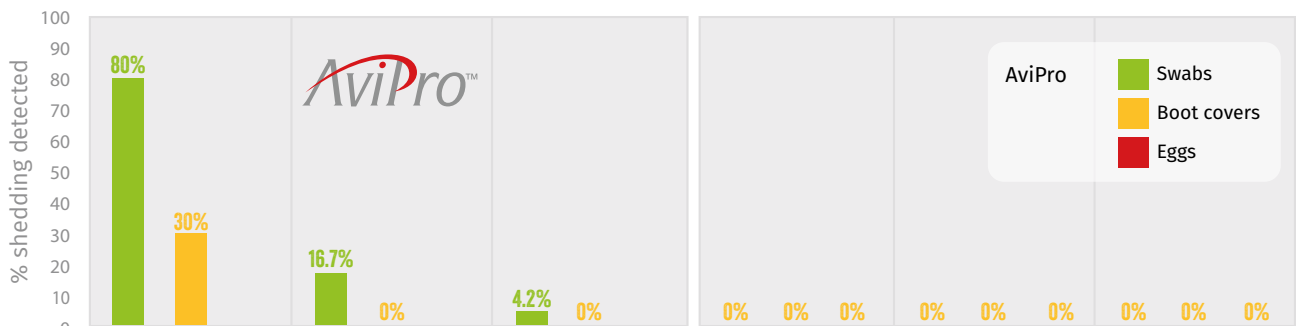
Recovery of *S. Typhimurium* challenge strain from caeca



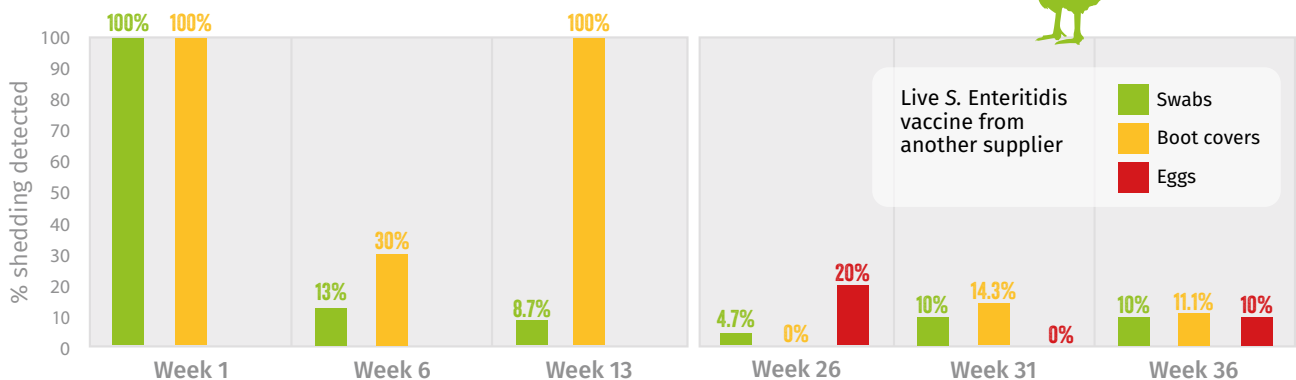


REDUCED SHEDDING INTO THE LAYING PERIOD

Some live vaccines have shedding patterns that can extend well into the production period, potentially exposing the table egg to vaccine residues⁹. 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

AviPro Salmonella Duo reduces faecal excretion of *S. Enteritidis*⁹

VERTICAL

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

AviPro Salmonella Duo reduces colonisation of the reproductive tract of *S. Enteritidis*¹⁰



AviPro Salmonella Duo
IS THE ONLY VACCINE THAT PROTECTS EGGS
from internal contamination with *S. Enteritidis*.^{6a}

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

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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 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. 1×10^8 CFU* and max. 6×10^8 CFU*. Live attenuated *Salmonella* Typhimurium bacteria, strain Nal2/Rif9/Rtt, min. 1×10^8 CFU* and max. 6×10^8 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 °C to 8 °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.

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