

# Nobilis® Salenvac & Nobilis® Salenvac T

Fighting salmonella?  
Get the killer punch!

Safe  
adjuvant

IRP  
Empowered  
antibodies

TECHNOLOGY  
irp

Intervet

RESEARCH • PERFORMANCE • INTEGRITY



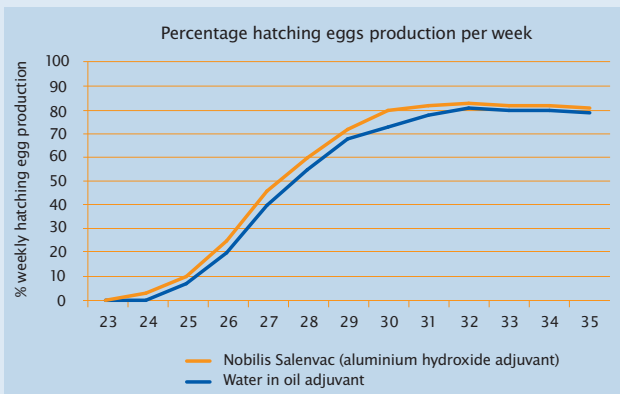
# Safe adjuvant – Improved flock performance

Nobilis Salenvac and Nobilis Salenvac T both contain Aluminium Hydroxide Gel; this adjuvant promotes a strong immune response and causes minimal vaccine reactions. It makes Nobilis Salenvac and Nobilis Salenvac T safe to use in the birds and for the operator in case of accidental self-injection.

Minimal vaccine reaction leads to an improved uniformity and flock performance.

## Field Trial 1

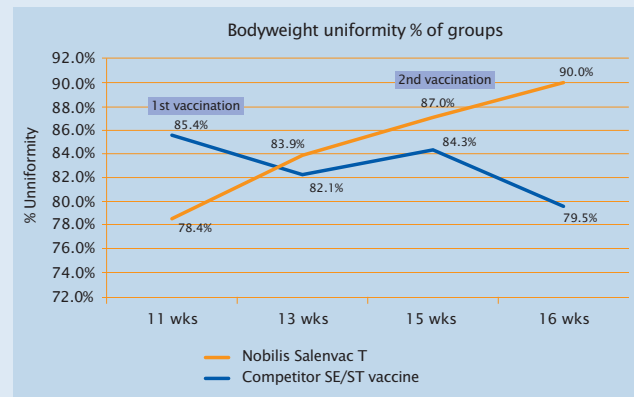
Two groups of broiler breeders were vaccinated with either a Salmonella vaccine (Nobilis Salenvac) with an Aluminium Hydroxide Gel adjuvant or a Salmonella vaccine with a water in oil adjuvant. The percentage of hatching eggs per week is shown below.



During a period of 23 to 35 weeks of age, birds in the group that were vaccinated with the Aluminium Hydroxide Gel as adjuvant produced on average 3 hatching eggs more than those birds vaccinated with the water in oil based vaccine.

## Field Trial 2

Two groups of brown layers were vaccinated with either Nobilis Salenvac T or with a *Salmonella* Enteritidis (SE) and *Salmonella* Typhimurium (ST) vaccine with water in oil as adjuvant. The birds were vaccinated at 11 wks and 15 wks. Uniformity on bodyweight was measured at time of vaccination and several times afterwards.



The birds vaccinated with Nobilis Salenvac T showed an undisrupted bodyweight uniformity development while the birds vaccinated with the water in oil based SE-ST vaccine had poor bodyweight uniformity results.

Bodyweight uniformity at the end of the rearing period is crucial for flock performance in the production period.



## IRP technology – empowered antibodies

Iron is an essential requirement for bacteria such as *Salmonella* and *E. Coli* to grow and multiply. In the chicken intestine iron is bound to proteins, reducing its availability. To compensate, bacteria form on their surface iron regulated proteins or IRP's, to enable an active intake of iron.

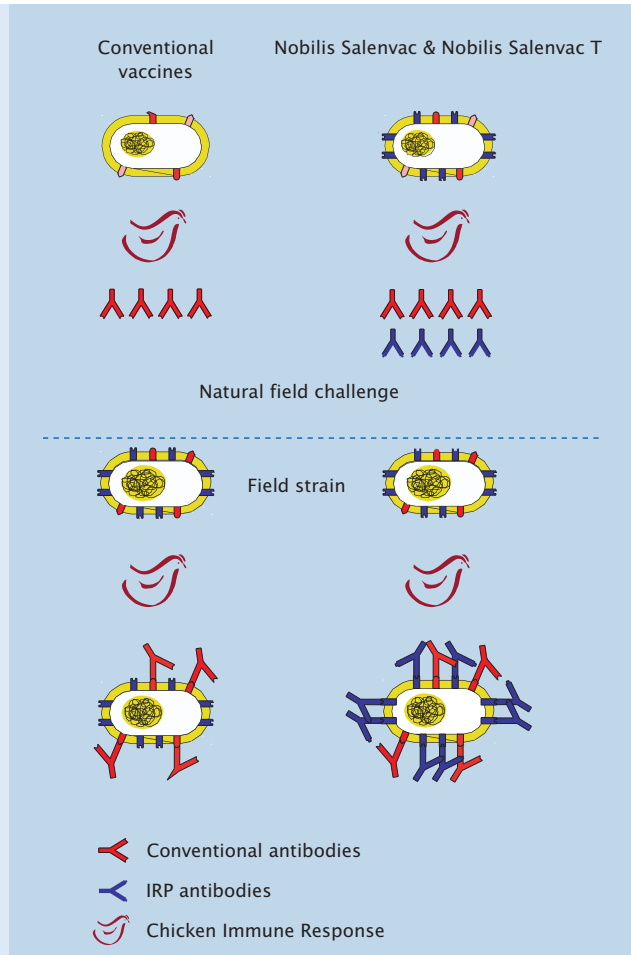
The IRP's are recognized as antigens by the bird's immune system, resulting in maximum IRP antibody expression.

Nobilis Salenvac T is produced under conditions of iron restriction (IRP technology). This IRP technology leads to a maximum expression of IRP's. Maximum expressed IRP's results in maximum induction of IRP empowered antibodies.

IRP technology results in a vaccine that induces a strong chicken immune response, resulting in a powerful reaction against a natural field challenge. Nobilis Salenvac T induces conventional and IRP empowered antibodies.

### Nobilis Salenvac and Nobilis Salenvac T:

- conventional and IRP empowered antibodies
- strong immune response
- powerful reaction against a natural field challenge



# Reduction of shedding

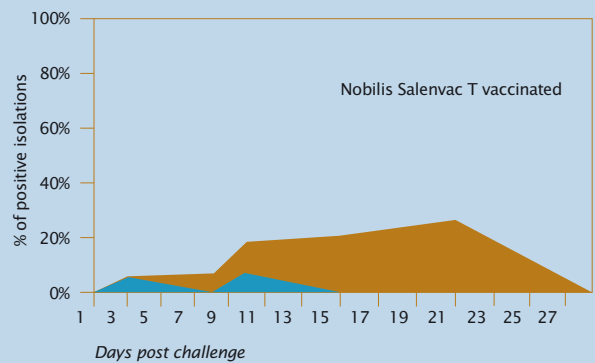
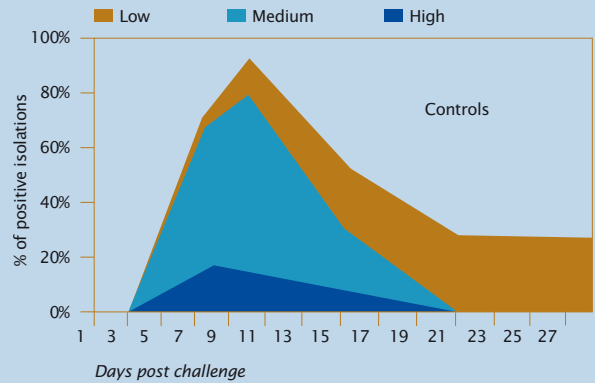
## Effect on shedding

Shedding of wild type *Salmonella* Typhimurium from the gastrointestinal tract of broiler breeders vaccinated with Nobilis Salenvac T and non-vaccinated control birds was evaluated after exposure to seeder birds (birds known to be excreting high levels of *Salmonella* Typhimurium). Shedding of *Salmonella* Typhimurium was evaluated by cloacal swabs sampling.

The graphs on the right show the percentage of positive isolation from the cloacal swabs and the percentage of birds, which were low, medium or high shedders.

**Nobilis Salenvac-T reduces the shedding of *Salmonella* Typhimurium. A second advantage is the reduction of low, medium and high shedders in the vaccinated birds.**

Nobilis® Salenvac T effect on shedding of *Salmonella* Typhimurium after challenge



**High** - Direct growth, >30 colonies per plate  
**Medium** - Direct growth, <30 colonies per plate  
**Low** - No direct growth, Enrichment required



# Nobilis Salenvac; passive immunity from the egg to the progeny

## The effect of passive immunity

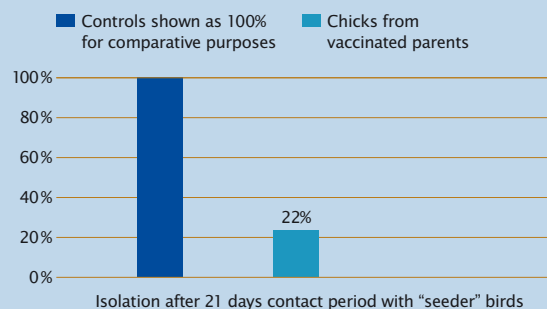
Day old chicks from 57 week-old Nobilis Salenvac vaccinated parents were placed in contact with “seeder” birds orally inoculated with *Salmonella* Enteritidis.

Graph 1 on the right shows the incidence of isolation of *Salmonella* Enteritidis of chicks after a 21 days contact period with “seeder” birds.

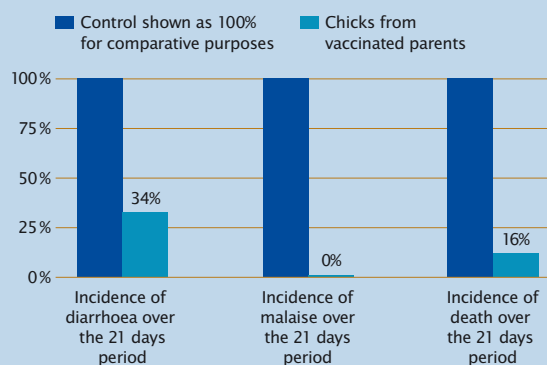
The clinical signs within this 21 days contact period are shown in Graph 2.

These results clearly indicate that chickens of vaccinated breeders have a high level of protection against infection by *Salmonella* Enteritidis during the first 21 days of life.

Graph 1: Total isolation of *S. enteritidis* from gall bladder, ovary, oviduct and caecum of chicks at post-mortem



Graph 2: Clinical signs in birds during 21 days after introduction of seeder birds





# Nobilis Salenvac and Nobilis Salenvac T the killer punch in the fight against Salmonella

- IRP empowered antibodies; superior efficacy in fighting Salmonella.
- Safe and highly effective aluminium hydroxide gel adjuvant; minimal vaccine reaction compared to water in oil based Salmonella vaccines.
- Excellent track record; used successfully in many countries to control Salmonella in poultry.
- Reduction in shedding and active immunization against *Salmonella* Enteritidis and *Salmonella* Typhimurium\*.



\*Nobilis Salenvac T



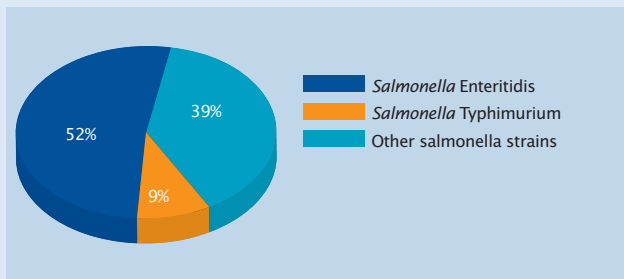
# Secure your poultry, secure your income

**Salmonellosis is one of the most frequently reported zoonotic diseases in humans. Poultry meat and eggs are often identified as a potential source of infection.**

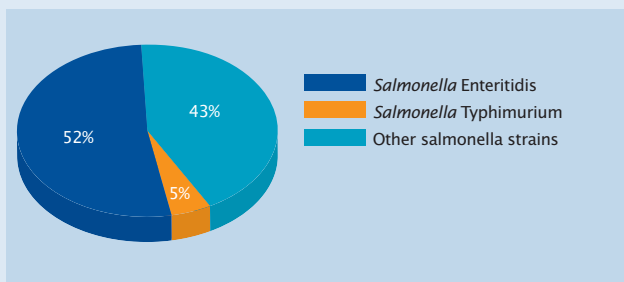
In the poultry related Salmonella cases in humans, *Salmonella* Enteritidis and *Salmonella* Typhimurium are the main identified serotypes (Graph 1).

The European Union (EU) carried out an extensive survey between 2003 and 2006 among layer, breeder and broiler flocks on the prevalence of different Salmonella strains. The prevalence of *Salmonella* Enteritidis (SE), *Salmonella* Typhimurium (ST) and

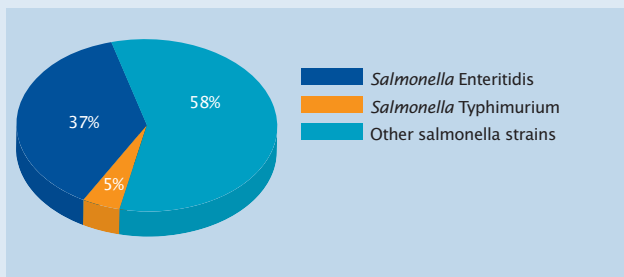
Graph 1: Reported Salmonellosis cases in humans per Salmonella strain (EU)<sup>1</sup>



Graph 2: Salmonella strains in layers (EU)<sup>2</sup>



Graph 3: Salmonella strains in Poultry breeders (EU)<sup>3</sup>



other Salmonella strains in layers and poultry breeders are shown below (Graph 2 and 3).

The findings of this research have led to stricter rules for Salmonella control in the EU. The new rules should result in the further reduction of *Salmonella* Enteritidis (SE) and *Salmonella* Typhimurium (ST).

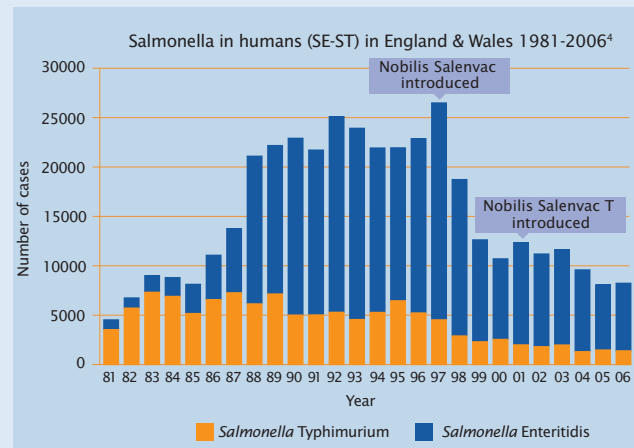
These new regulations could have a negative effect on the income of the poultry producer, if his flock is found positive for SE or ST.

## Excellent track record in controlling Salmonella

Many countries use vaccination as an important tool in the control of Salmonella. In particular, Nobilis Salenvac and Nobilis Salenvac T are used successfully to control Salmonella.

In the UK a massive vaccination campaign of breeders and layers contributed to a significant reduction in the contamination of poultry products, and Salmonella cases in humans.

Nobilis Salenvac was the first vaccine to be used in the UK and has contributed to a significant drop of Samonella cases in the UK from then onwards. The introduction of Nobilis Salenvac T has contributed to a further drop in the *Salmonella* Typhimurium cases in the UK.



# Nobilis Salenvac and Nobilis Salenvac T the killer punch in the fight against Salmonella

## Description

Nobilis Salenvac contains inactivated cells of *Salmonella* Enteritidis PT 4. Nobilis Salenvac T contains inactivated cells of *Salmonella* Enteritidis PT 4 and *Salmonella* Typhimurium DT 104. Both vaccines contain Aluminium hydroxide gel as an adjuvant and thiomersal as a preservative\*. Nobilis Salenvac and Nobilis Salenvac T are grown with IRP technology.

## Indication

Nobilis Salenvac is indicated for the stimulation of active and passive immunity against *Salmonella* Enteritidis. Nobilis Salenvac T is indicated for the active immunization of chickens and to reduce caecum colonization and faecal excretion with *Salmonella* Enteritidis and *Salmonella* Typhimurium.

## Vaccination schedule

Standard vaccination schedule: two vaccinations of 1 dose (0.5 ml) with a minimum interval of 4 weeks. The recommended age for vaccination is 12 weeks for the first and 16 wks for the second vaccination.

## High risk of early infection

The vaccine has been shown to be efficacious when given at one day of age (0.1 ml) with a repeated dose (0.5 ml) of 4 weeks and a recommended booster dose at 18 weeks.

## Administration

Administration is by intramuscular injection into the leg or breast muscle under aseptic conditions.

## Presentation

Nobilis Salenvac and Nobilis Salenvac T are marketed in 500 ml bottles.

\*Preservative for Nobilis Salenvac not registered in all countries

## References:

1. *EFSA Journal, 2006-94: The community summary report of trends and sources of zoonoses, zoonotic agents, antimicrobial resistance, and food borne outbreaks in the European Union in 2005*
2. *EFSA 2006: "Baseline study on the prevalence of Salmonella in laying flocks of Gallus gallus"*
3. *EU report on trends and zoonotic agents in the European Union and Norway, 2003*
4. *Source: www.hpa.org.uk*

More information on Salmonella control:

[www.safe-poultry.com](http://www.safe-poultry.com)

