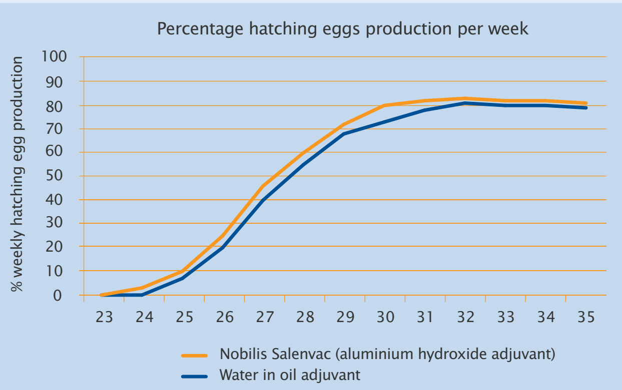
Oil-free adjuvant – minimal vaccine reaction

Nobilis Salenvac T contains Aluminium Hydroxide Gel; this oil-free adjuvant promotes a strong immune response and causes minimal vaccine reactions.

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

Field Trial 1

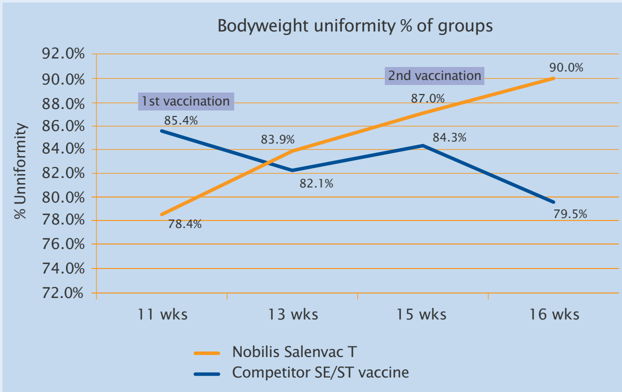
Two groups of broiler breeders were vaccinated with either a Salmonella vaccine (Nobilis Salenvac) with an Aluminium Hydroxide Gel adjuvant or a Salmonella vaccine with a water in oil adjuvant. The percentage of hatching eggs per week is shown below.



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.

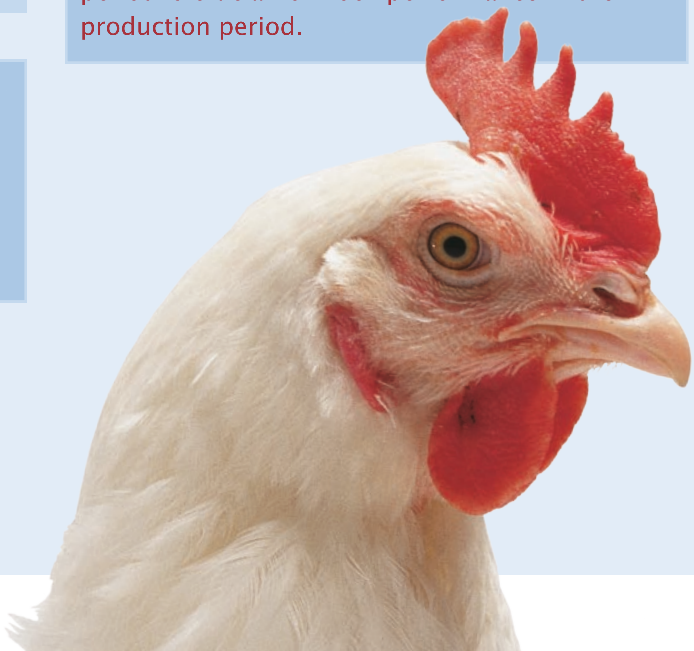
Field Trial 2

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.

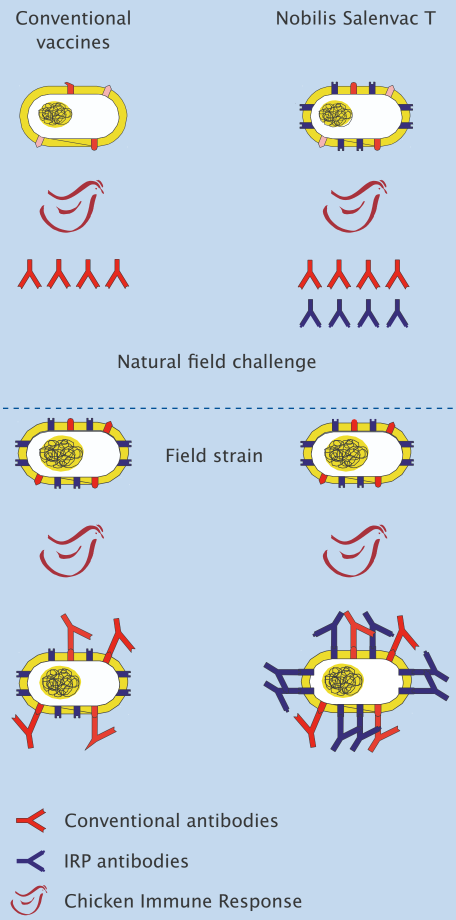
The IRP's are recognized as antigens by the bird's immune system, resulting in maximum IRP antibody expression.

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



Reduction of shedding

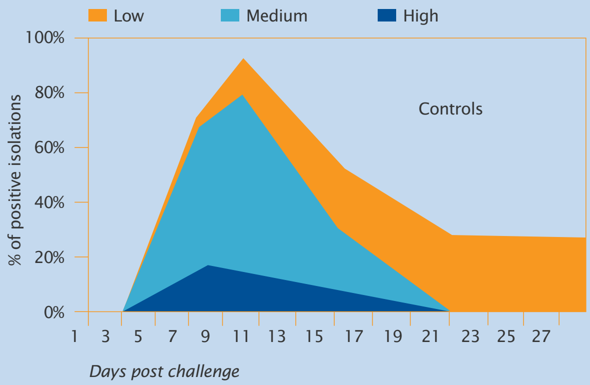
Effect on shedding

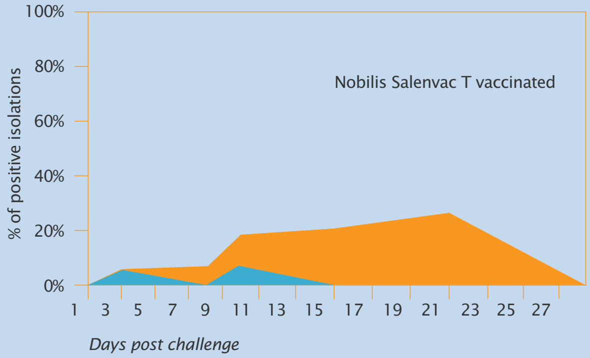
Shedding of wild type *Salmonella* Typhimurium from the gastrointestinal tract of broiler breeders vaccinated with Nobilis Salenvac T and non-vaccinated control birds was evaluated after exposure to seeder birds (birds known to be excreting high levels of *Salmonella* Typhimurium). Shedding of *Salmonella*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

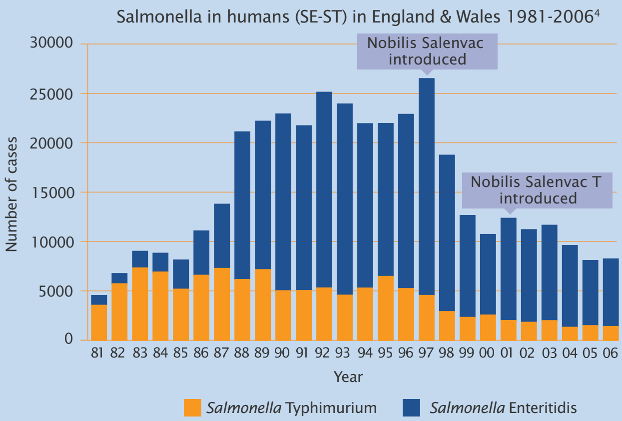
Excellent track record in controlling Salmonella

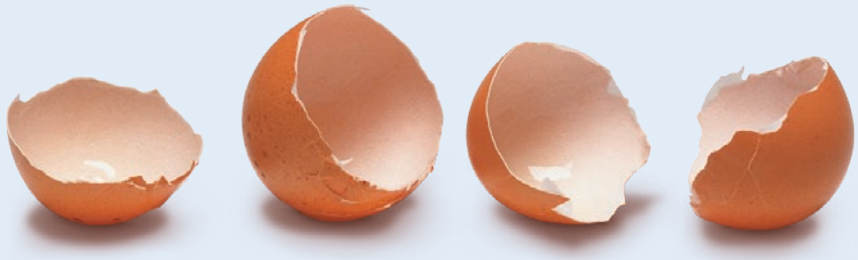
Many countries use vaccination as an important tool in the control of Salmonella. In particular, Nobilis Salenvac and Nobilis Salenvac T are used successfully to control Salmonella.

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 Salmonella control program and has contributed to a significant drop in Salmonella 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 T

the killer punch in the fight against Salmonella

- IRP empowered antibodies; very effective in fighting Salmonella.
- Oil-free and highly effective aluminium hydroxide gel adjuvant; minimal vaccine reaction, better bodyweight development and improved production.
- 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

the killer punch in the fight against Salmonella

More information on Salmonella control:

www.safe-poultry.com

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*

Presentation: An opaque aqueous vaccine suspension containing inactivated cells of Salmonella enteritidis phage type 4 and Salmonella typhimurium DT104. The vaccine contains aluminium hydroxide as an adjuvant and thiomersal as a preservative. Nobilis Salenvac T is grown with IRP technology. **Indication:** For the active immunisation of chickens to reduce caecum colonisation and faecal excretion with S. enteritidis and S. typhimurium. **Minor indication:** In exceptional circumstances chickens from one day of age may be vaccinated in order to protect them in an environment where they are likely to become infected at an early stage in the rearing phase (epidemiologically indicated by recent outbreak of Salmonella or high infection pressure on the site). **Dosage and Administration:** Standard vaccination: Intramuscular injection of one dose of 0.5 ml. Two vaccinations, with an interval of four weeks are should be given. The recommended age for vaccination is 12 and 16 weeks of age. Emergency vaccination (when epidemiologically indicated in high-risk environments) Intramuscular injection of one dose of 0.1 ml in one-day-old chicks. After an interval of 4 weeks a repeat vaccination with a dose of 0.5 ml should be given. Hygiene measures and good husbandry practices should also play an important part of a control programme to reduce the incidence of salmonella infection. **Contra-indications, warnings and further information:** Do not use in birds in lay. The vaccine contains an adjuvant and, and vaccination may result in temporary swellings at the injection site up to 1 cm2 and lasting 1-2 days Histopathological examination of injection sites 2 and 3 weeks after the administration of a single dose revealed that vaccination is associated with an intramuscular inflammatory response involving infiltration of macrophages and plasma cells. Vaccination may also be associated with transient dullness, lethargy and lameness and a reduction in weight gain. In one-day-old chicks (receiving 0.1 ml) the reactions are more noticeable, the whole thigh may become swollen. These reactions are temporary and in the majority of cases resolved by 7 days. Exceptionally, a swelling may still be detectable 15 days after inoculation. Withholding time: zero days The vaccine bottle must be shaken before use. Store at +2°C to +8°C. Protect from freezing and light. Use before the expiry date printed on the pack. No studies have been performed to evaluate the effect of maternally derived antibodies on the response to vaccination. Therefore, for use in 1 day old chicks, only birds from non-vaccinated and non-infected parent flocks should be vaccinated. Vaccination causes a serological response in the chickens which may interfere with a surveillance programme. The vaccine should therefore not be used when serological detection alone is used to assess flocks for S. pullorum/gallinarum. Specific serological methods or bacteriology should be used for the differential diagnosis. In the absence of information, no other vaccines should be administered within 14 days before or after vaccination with the product. Do not mix with any other vaccine/immunological product.In the case of accidental self-injection, seek medical advice immediately and show the package insert or the label to the physician. For animal treatment only. Keep out of reach of children.
Full label text available on request.

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Nobilis® Salenvac T

Fighting salmonella?
Get the killer punch!

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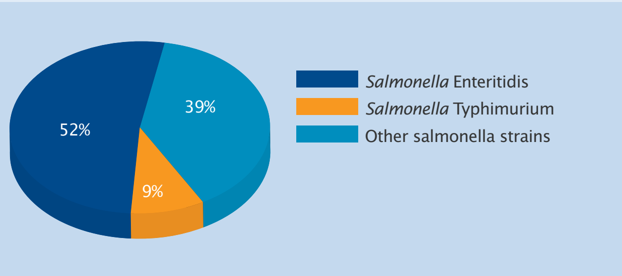
Secure your poultry, secure your income

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.

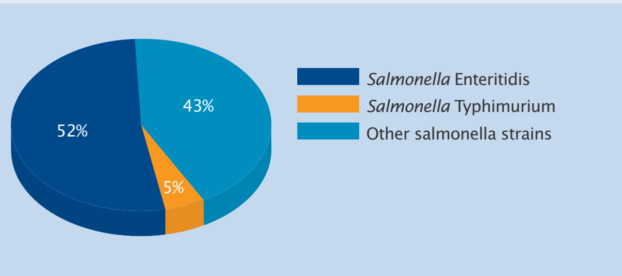
In the poultry related Salmonella cases in humans, *Salmonella* Enteritidis and *Salmonella* Typhimurium are the main identified serotypes (Graph 1).

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

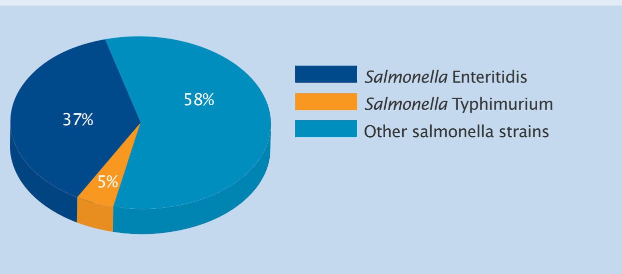
Graph 1: Reported Salmonellosis cases in humans per Salmonella strain (EU)[1]



Graph 2: Salmonella strains in layers (EU)[2]



Graph 3: Salmonella strains in Poultry breeders (EU)[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 rules could have a negative effect on the income of the poultry producer, if his flock is found positive for SE or ST.

Experiences in many countries prove that vaccination is an important tool in the control of Salmonella in poultry.