

Nobilis Salenvac

Unique vaccine against
S. enteritidis



- An inactivated *S. enteritidis* phage type 4 vaccine
- Reduces both horizontal and vertical transmission of *S. enteritidis*.
- Grown under conditions of iron restriction, resulting in an improved immune response of chickens to natural infection with *S. enteritidis*.
- Aluminium Hydroxide Gel as an adjuvant: safe for birds and safe for operators in case of accidental self-injection
- A proven tool for the elimination of *S. enteritidis* both poultry meat and eggs

Nobilis Salenvac represents an advance in vaccine technology.
One vaccine, developed for both breeders and layers with an excellent safety profile and proven efficacy.

Nobilis Salenvac

Your contribution to food safety

Description

Nobilis Salenvac contains formalin inactivated *S. enteritidis* phage type 4 grown under conditions of iron restriction. The vaccine contains aluminium hydroxide as an adjuvant.

Indication

Nobilis Salenvac is indicated for the vaccination of breeders and laying type chickens against *S. enteritidis* infections.

Vaccination schedule

The recommended vaccination schedule is:

0.5 ml at 10-12 weeks of age and a booster dose of 0.5 ml at 14 to 18 weeks of age with an interval of 4-6 weeks between the two vaccinations

High risk of early infection:

0.1 ml at day old, followed by 0.5 ml at 4 weeks of age and a booster dose of 0.5 ml at 14 to 18 weeks of age with an interval of 4-6 weeks between the second and third vaccination

Administration

Administration is by intramuscular injection into the leg or breast muscle under aseptic conditions. The breast muscle is the recommended site of injection for broiler breeders, to avoid the risk of leg injuries, due to incorrect vaccination technique.

Presentation

Nobilis Salenvac is available in 250ml and 500ml polyethylene bottles

References

1. British Health Laboratory Services, London 7/2001
2. Salmonella in Livestock production, Veterinary Laboratories Agency, 2000
3. The British Egg Industry Council - Code of Practice for Lion Code Eggs, second version, November 1998
4. A. Schermer et al. *Animal Diseases*, 46:249-252, 2000
5. International Hatchery Practice 7/1995



Intervet Research Makes The Difference

A **heavyweight**
in the **fight** against
Salmonella enteritidis

Nobilis® Salenvac

The unique vaccine with
an excellent track record

Salmonella enteritidis

we can control it

Salmonella enteritidis, a major threat

Since the early 1990's, *S. enteritidis* has emerged worldwide as the most common type of Salmonella isolated from poultry.

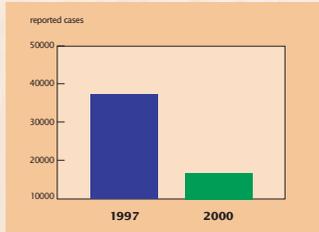
Public awareness of the health risks associated with food borne pathogens is at an all time high. The focus is on *S. enteritidis*. Poultry meat and egg products are often singled out as the source of infection.

Salmonellosis is the most frequently reported zoonotic disease in European countries. The severity of the disease varies, but can be potentially fatal especially in immune compromised individuals, the elderly and infants. In 1999 alone, there were as many as 166 000 reported cases of Salmonellosis infection in humans within the EU countries. Due to this continuous threat the European Community decided to enforce producers to minimize contamination in breeders and layers as regulated in the Zoonosis Directive (EC/92/117).

Vaccination, a valuable tool

By vaccinating against *S. enteritidis*, the poultry producer is satisfying the needs of both the retailer and consumer and avoids the potential financial losses associated with the treatment or culling of a Salmonella positive flock.

General control measures such as improved hygiene, disinfection, biosecurity and antibiotics have not resulted in the desired levels of *S. enteritidis* reduction. Vaccination is proving to be a valuable tool in the control of *S. enteritidis*.



Vaccination of chickens in the UK contributed to a significant reduction in cases of human Salmonellosis.

Vaccination reduces the risk

To reduce Salmonella infections in humans, massive immunisation of commercial layers against *S. enteritidis* was implemented in the United Kingdom starting in 1997. Recently the results of this vaccination programme were published. In 1997, 37 400 cases of human Salmonella infections were reported. In 2000, this number had decreased to 17 000, a reduction of more than 50%. The vaccine used in this successful mass campaign was Nobilis Salenvac.

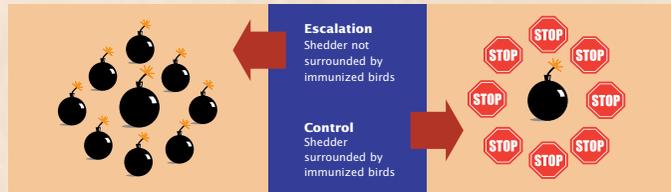
Nobilis Salenvac

Reducing vertical and horizontal spread

Barrier Effect

One infected breeder or chick may cause an outbreak in a flock. However, in an immunized flock the surrounding birds act as a barrier, isolating the infected bird, preventing escalation of the infection. Nobilis Salenvac is an inactivated *S. enteritidis* vaccine, inducing protective levels of antibodies in vaccinated

poultry. Chicks originating from vaccinated breeders have maternal antibodies providing immunity against *S. enteritidis* during the first 21 days. The protective levels of antibodies induced by Nobilis Salenvac act as a transmission barrier to both the vertical and horizontal spread of *S. enteritidis*.



An incidental infected breeder or chick can cause an outbreak in a flock. As immunised surrounding birds isolate the infected bird an escalation of the infection is prevented. Especially in hatcheries such escalations can be devastating

Produced under conditions of iron restriction

Salmonella organisms need iron for their growth. In the environment of the chicken's intestine, iron is bound to proteins, decreasing its availability. To compensate, bacteria such as Salmonella and *E. coli*, form iron-transfer mechanisms on their surface, so-called IRP's (Iron Regulated Outer Membrane Proteins), which enable an active resorption of iron from the intestine. These IRP's are recognized as antigens to which antibodies are formed.

Nobilis Salenvac is produced under conditions of iron restriction, resulting in a proliferation of IRP's. This results in a vaccine which induces an immune response comparable to that of a natural infection, and hence a more adequate reaction against a natural *S. enteritidis* challenge.

Aluminium Hydroxide Gel Adjuvant

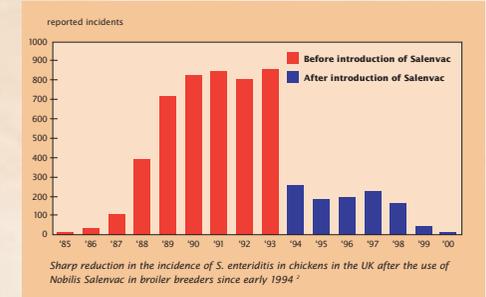
The traditional water-in-oil adjuvants used with bacterins often result in severe local reactions at the site of injection. Nobilis Salenvac contains an Aluminium Hydroxide Gel (AHG) which causes no adverse reactions at the injection site. The result is better flock uniformity with a potential improvement in egg production. In case of accidental self-injection AHG is also safe for the operator.

These properties make Nobilis Salenvac a truly universal and safe vaccine suitable for Salmonella control in both the egg and broiler industries.

Nobilis Salenvac

The vaccine with an excellent track record

Extensive field experience in the Netherlands, Belgium and the United Kingdom with millions of birds show that Nobilis Salenvac can dramatically reduce *S. enteritidis* infections.



Sharp reduction in the incidence of *S. enteritidis* in chickens in the UK after the use of Nobilis Salenvac in broiler breeders since early 1994

44 700 eggs, all free of *S. enteritidis*

3.2 million free range egg layers were vaccinated in the UK in 1997. 44 700 eggs from these layers as bought in the supermarket were bacteriologically sampled. No contaminated eggs were found. In contrast, 39 of 42 642 eggs from a non-vaccinated control group were found to be contaminated. Based on these results the British Egg Industry Council (BEIC) decided to implement vaccination as a condition of participation in their Code of Practice for Lion Quality Eggs. Participation in this code is a prerequisite for the supply of eggs to most UK retailers.†

No infection in 1 100 000 broiler breeders

In a field trial conducted in The Netherlands, 1 100 000 broiler breeders were vaccinated with Nobilis Salenvac between 1995 and the first half of 1996, and monitored by the Animal Health Services for *S. enteritidis* infections. Vaccinated flocks were located on high-risk farms, which based on historical experience had a 17% chance of Salmonella infection. Monitoring was done according to the Dutch Salmonella Control Program. During the observation period no *S. enteritidis* infections were recorded, a significant improvement.†

Less Salmonella in the Processing Plant

Trials conducted by CVL, Weybridge in the UK confirmed that broiler chicks originating from Salenvac vaccinated parents were less susceptible to *S. enteritidis* infections during the first 21 days of life. There was a lower rate of gall bladder, ovary, oviduct and caecal colonisation. Further to this fewer chicks excreted *S. enteritidis*, thus reducing the chance of horizontal transmission.

These results were confirmed in the field by a large UK broiler integration. They started vaccinating their broiler breeder flocks with Salenvac in 1994. The result was a 75% reduction in the percentage of Salmonella positive isolates made from birds at slaughter. This improvement was due to the positive effect of Maternally Derived Antibodies protecting the day old chick during the crucial first weeks of life. In conclusion reduced risk of early Salmonella infection results in a reduction of Salmonella isolation in the processing plant.