Salenvac T

The food safety vaccine

The new combined vaccine against *Salmonella enteritidis* and *Salmonella typhimurium* for breeder chickens

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Salenvac® T

British technology for a global market

1. Intervet trial, data on file
2. PHLS report, 2002
3. Davies & Breslin, Vet Record 2003, 152, 283-287
4. Clifton-Hadley et al, Salmonella & salmonellosis 2002, 619-620

Nobilis Salenvac T contains inactivated cells of *Salmonella enteritidis* phage type 4 and *Salmonella typhimurium* DT104.
Salenvac contains inactivated cells of *Salmonella enteritidis* phage type 4.
Both can only be prescribed by your veterinary surgeon. Legal category POM

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The food safety vaccine

Most breeder flocks in the chicken industry, through Assured Chicken Production, are vaccinated against salmonella. But unlike other diseases, vaccination is a tool to protect the consumer from food poisoning, rather than to protect the birds themselves.

The stakes are therefore high, and no farm can afford to take unnecessary risks. Indeed, from 2004, the European Zoonoses Directive will demand the slaughter of any flock found to be infected with a salmonella species of significance to human health.

Fortunately, in the fight for food safety, no single vaccine can offer more protection to both birds and consumers than Nobilis Salenvac T. This mailer describes its many unique benefits.

Salenvac: the only vaccine proven to provide passive protection to the breeder's chicks[1]

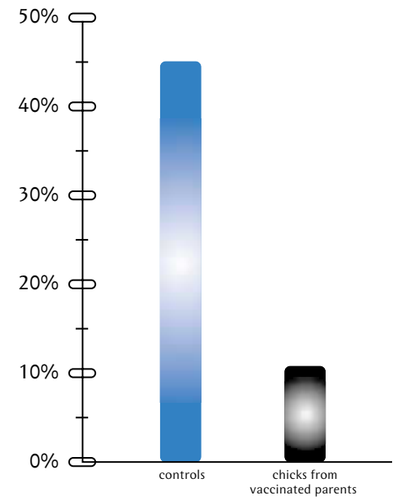
For broiler breeders, it is absolutely vital to prevent the transmission of salmonella from the mother to her chicks – as that protects the meat that is sold. This is so-called 'vertical transmission' and can only be prevented by maternally-derived antibodies (MDA), which are able to provide immunity. Only Salenvac is proven to provide MDA.

It can do this because it is an inactivated injectable salmonella vaccine. Since it is administered into the body, rather than being restricted to the gut (as with live drinking water vaccines), it generates humoral antibodies which are concentrated in the eggs. The egg antibodies are then absorbed by the chick before it hatches, giving protection even before it is born.

This MDA against *S. enteriditis* has been demonstrated in challenge trials involving 21-day old chicks from vaccinated and unvaccinated parents.

Salenvac T is authorised to reduce horizontal transmission between birds as well as faecal shedding.

Maternally-derived immunity prevented 8 out of 10 chick infections



Isolation of *S. enteritidis* from gall bladder, ovary, oviduct and caecum of chicks at post mortum after 21 days (% positive)

One vaccine to protect against the two most dangerous salmonellae

Salenvac T is the *first* and *only* multivalent salmonella vaccine for poultry. It combines the *S. enteritidis* fraction from the original Salenvac with new cover against *S. typhimurium* DT 104 – all from just two injections.

Almost 80% of all human salmonellosis cases currently involve either *Salmonella enteritidis* or *Salmonella typhimurium*[2], and they remain a continuing challenge to the poultry industry. Both organisms have been shown to survive in poultry farm environments even after depopulation and disinfection[3].

The need for fully-protected birds is paramount.

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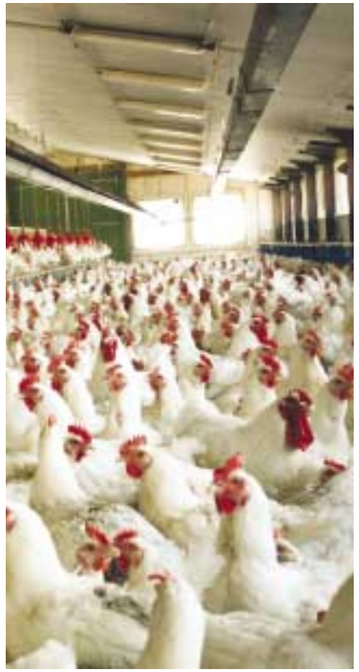
Salenvac T's advanced IRP vaccine technology for greater protection against natural challenge

Salmonellae grown in laboratory conditions are different from those found naturally in a chicken's intestine. This is because nutrients such as iron are less available to natural, wild bacteria. To obtain iron, they express Iron Regulated Proteins (IRPs) on their surface, which are then recognised by the chicken's immune system as antigens. If the vaccine is made with standard laboratory-grown bacteria (provided with high levels of iron), they never develop these IRPs, and the vaccine is deficient.

However, if the salmonella vaccine is manufactured with a shortage of iron, similar to conditions in the wild, it allows the vaccinated chicken to produce extra antibodies against these IRPs. The IRP antibodies then provide greater protection against natural challenge.

This British-developed IRP Technology is the manufacturing process used in Salenvac T, and is unique to Intervet.



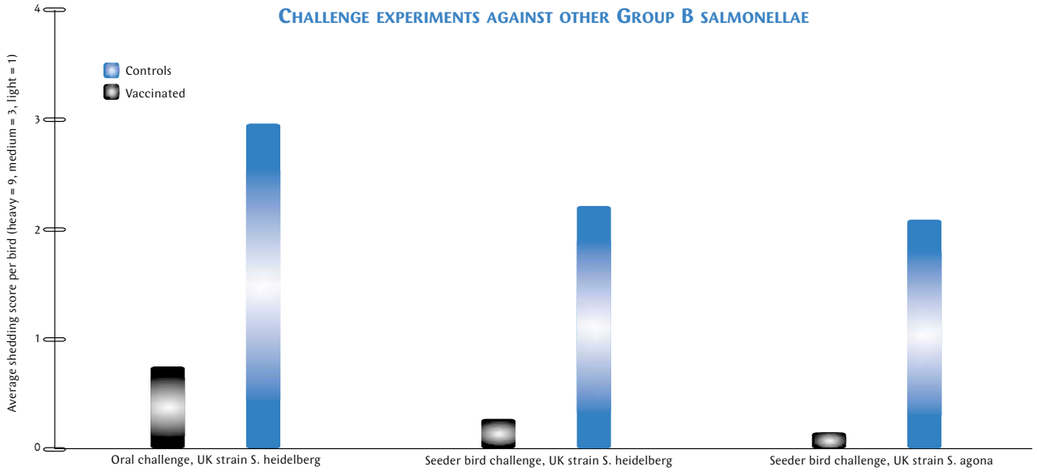
Research update

Salenvac T and its predecessor Salenvac are two of the best researched vaccines in the industry. Both vaccines have attracted many published papers, the most recent are summarised below.

Efficacy of Salenvac T in reducing other Salmonella serogroup B infections in poultry[4]

Salenvac is proven to protect against *S. enteritidis* (serogroup D). But in this trial, 92 salmonella-free birds were vaccinated at 4 and 6 weeks of age with Nobilis Salenvac T. At 8 weeks of age, groups of vaccinated and matched unvaccinated controls were challenged either orally or using seeder birds with wild-type poultry isolates of *S. heidelberg* and *S. agona* from the UK. Both salmonellae are from serogroup B, as is *S. typhimurium*.

Results were as follows:



The paper concluded that Salenvac T induces cross-protection against challenge with other salmonellae from serogroup B.