

Vaccination of

# Salmon

against *Yersinia ruckeri*



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## Choice of vaccination regime for vaccination of salmon against yersinosis

**Yersinosis in salmon has recently increased in prevalence and extent. A problem traditionally associated with hatcheries, in recent years several more outbreaks have been seen in the sea.**

Most of the outbreaks occur within 3 months following transfer to sea, but clinical outbreaks have also been experienced in fish of harvest size. This means that one must think about the choice of vaccination strategy to use. Several hatcheries previously used bath-vaccination against yersinosis. Treatment was usually carried out at 2-3 grammes size and again at 6-8 gramme. This is a method that is relatively gentle on fish, but which provides a limited protection and duration of immunity.

To protect fish throughout the hatchery phase and further into the sea, it is necessary to combine dip-vaccination with injection vaccination. Choice of vaccination regime will depend on when the disease occurs.

## Vaccination in the fry phase (hatchery)

**Vaccination against yersinosis occurs most frequently by dip-vaccination of small fish. The purpose is to protect fish until they have reached a size suitable for injection. When the disease will occur varies from site to site.**

It is therefore important that the vaccination regime is tailored to an individual site. To achieve protection early in the fry phase, fish can be dip-vaccinated from 1gm size. Dip vaccination at this size will give a somewhat limited effect and duration of immunity (expected protection 2-3 months). The vaccination of small fish must be followed up with a subsequent dip-vaccination, typically at 5 grams. Expected duration of protection is then 4-6 months.

It is recommended that dip-vaccination be co-ordinated with other required handling / sorting of fish so as to avoid unnecessary handling in connection with vaccination. Stress associated with handling can be a trigger for a disease outbreak.

## Administration of dip-vaccine

1:10

The vaccine is diluted 1:10, which means 1 litre of vaccine is mixed with 9 litres of water. Up to 100 kilos of fish can be vaccinated per 10 litres of pre-mixed vaccine solution.

30-60  
SEC

The fish are held in the vaccine solution between 30 and 60 seconds. Ensure that the fish have plenty of space, so they can swim freely in the vaccine solution to ensure the best possible uptake of the vaccine. Add air / oxygen to the vaccine solution as required.

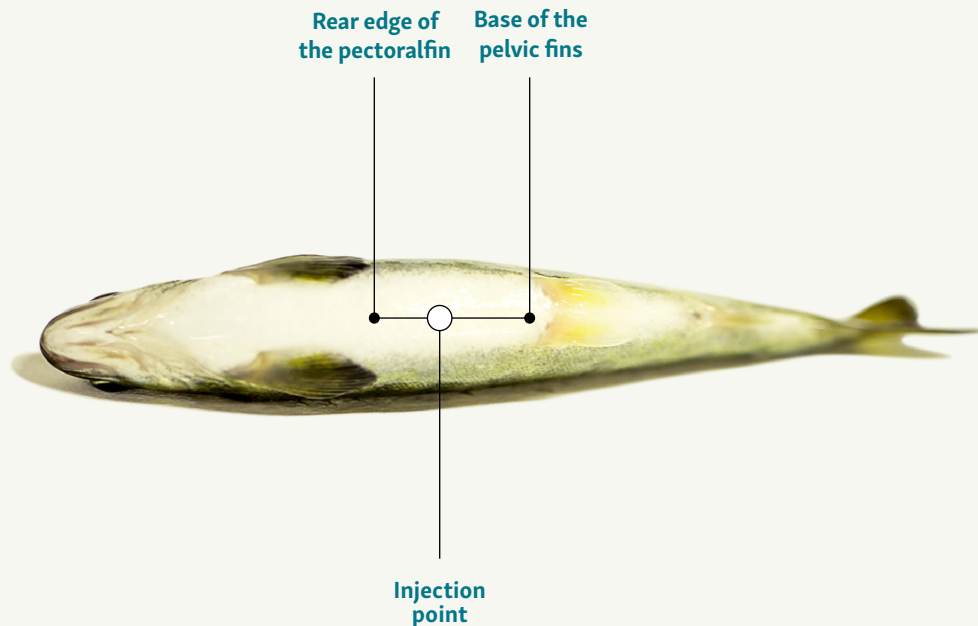
HEALTHY  
FISH

Only healthy fish should be vaccinated.

## Injection vaccination

**Injection vaccination is carried out mainly to achieve a longer duration of protection against disease after transfer to cages.**

The recommended injection point is in the mid-line 1-1.5 pelvic fin lengths in front of the base of the pelvic fins (see figure). Needle length used depends on the size of the fish, to ensure that the vaccine is deposited freely in the abdominal cavity. Deposition of vaccine in the abdominal wall can lead to acute mortality, depending on which adjuvant is used in the vaccine.



## Administration of injection vaccination

**25  
G**

Recommended minimum size for vaccination is 25 grammes individual weight.

**0,05  
ML**

A single dose of 0,05 ml is injected freely in the abdominal cavity.

**5-15  
°C**

Recommended temperature at vaccination is 5-15°C.

**12  
MTHS**

Expected protection: 12 months.

**HEALTHY  
FISH**

Only healthy fish should be vaccinated.

## Contact us

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