

## ATLANTIC SALMON - SALMON PANCREAS DISEASE VIRUS (SPDV)

### Introduction

Salmon pancreas disease virus (SPDV, belonging to the genus *Alphaviridae*) is the causative agent of pancreas disease (PD) in farmed Atlantic salmon. VESO Vikan offers challenge models with SAV2 and SAV3 to evaluate the efficacy of vaccines, the effect of selective breeding for resistance and the effect of prophylactic feeding and recovery. The outcome parameters are typically viral load (measured by qPCR) and histopathological changes in the heart during the acute phase of the disease, and pancreas pathology and growth/condition factor during the chronic phase of the disease. Mortality in parr/ smolts is typically low and variable and is not recommended as the principal outcome parameter. Mortality in fry is normally 30-60% and usually consistent.

### Challenge models to evaluate the effect of vaccination

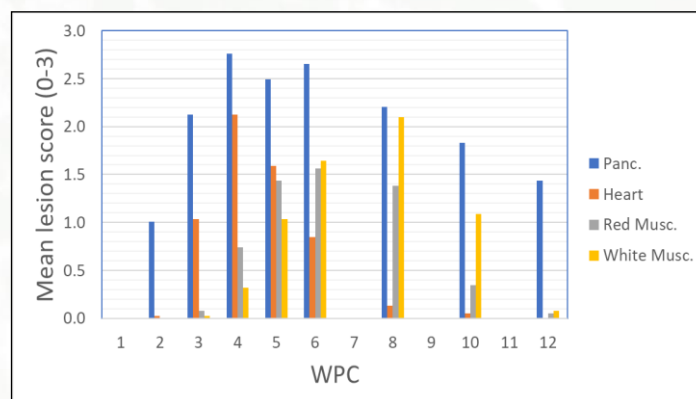
The fish will be vaccinated at the parr stage, immunized and experimentally infected with SPDV by i.p. injection or cohabitation in freshwater or seawater.

### Challenge models to evaluate the effect of feeding

The fish will be acclimatized for minimum two weeks followed by a period of test feeding. After challenge by i.p. injection or cohabitation, sampling for histopathological analysis is done throughout the observation period. Fish growth is essentially absent in unprotected trial groups from 2 to 10 weeks post-challenge.

### Challenge models to evaluate the effect of selective breeding

Salmon smolt/ parr/ fry with different genetic characteristics should preferably be mixed in one tank to reduce possible tank effects. The fish are usually acclimatized for minimum two weeks followed by water borne challenge. Mortality is monitored through a six- to ten-week period. Subpopulations of fish from the challenged fish pool are typically identified by DNA fingerprinting.



Succession of pathologies following from cohabitation challenge of parr with PD SAV3 (from Braceland et al. 2013)

### Available models

Salmon			Water			Challenge model		
Fry	Parr	Smolt	FW	SW	°C	Ip	Bath	Cohab
X	X	X	X	X	12	(X)		X