ATLANTIC SALMON - INFECTIOUS PANCREATIC NECROSIS VIRUS (IPNV)

Introduction

Atlantic salmon are susceptible to IPN by experimental infection as first feeding fry (fresh water) and as post-smolts (sea water). Challenge by bath and cohabitation closely mimics natural infection. The gentic characteristics of the test fish (susceptibility to IPN) influence on the level of control mortality. An IPNV strain originating from an outbreak in post-smolts is used for all challenges. The virus is a serotype Sp/N1, characterised as highly virulent and carrying putative molecular virulence marker motifs.

Challenge models to evaluate the effect of vaccination

Pre-smolts to be included in a bath or cohabitant challenge study are photoperiod-manipulated to smoltify. Challenges can be performed within 1-3 weeks after transfer to sea water. For cohabitant challenge studies, 20% shedders (i.p. injected) are introduced to the challenge tank. Fish are observed throughout a <35 days period.

Challenge models to evaluate the effect of feeding

The fish will be acclimatised for minimum two weeks followed by a period of feeding. After challenge by bath or cohabitation, mortality will be recorded throughout a five weeks observation period.

Immersion challenge of fry (fresh water)

Fish of different genetic characteristics can be kept in separate tanks, or mixed in one tank during challenge. By mixing all families in one tank, possible tank effects can be reduced. The fish (0.1-0.2 grams in average weight) will be challenged by immersion 1-3 weeks after onset of start feeding. Mortality is recorded for 35-50 days. Subpopulations of fish from the challenged fish pool are typically identified by DNA fingerprinting.

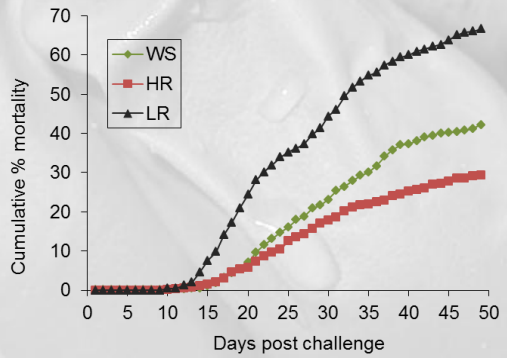

Figure. Challenge test in three Atlantic salmon strains with different susceptibility to IPN. High resistance (HR), low resistance (LR) and wild salmon (WS).

Available models

Salmon			Water			Challenge model		
Fry	Parr	Smolt	FW	SW	°C	Ip	Bath	Cohab
X		X	X	X	10-12		X	X