

PD & functional nutrition

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Product Manager Functional Diets

Overview

- Functional diets in Skretting
- PD trials
- CMS trial

History of functional diets in Skretting

- First trials in 1989
- Respons was launched in 1992
- Second generation Response in 1995
- Protec and React launched in 2007
- Second generation of Protec launched in 2013

protec™

The fine art of protection

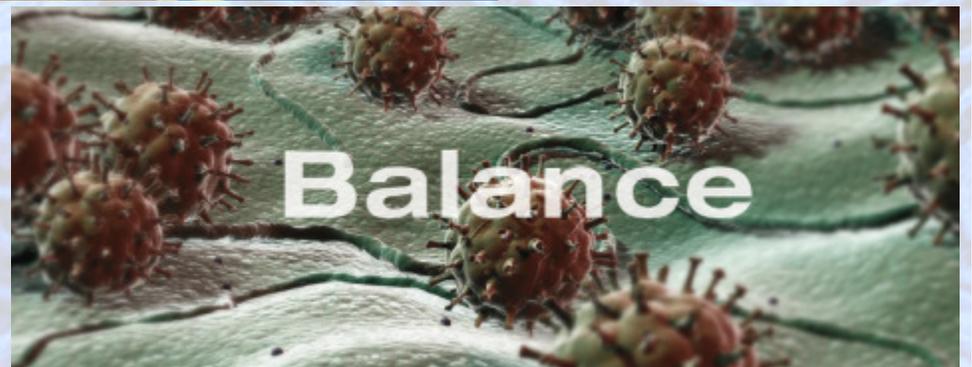


Skin
Gills
Gut

The immune system
Cell regeneration
Anti-oxidative



Virus
Parasites
Bacteria





Skretting: controlled clinical PD trials

1. *ILAB*

- challenge (intraperitoneal)
- feed either control diet or recovery diet (*React Pan*)
- samplings

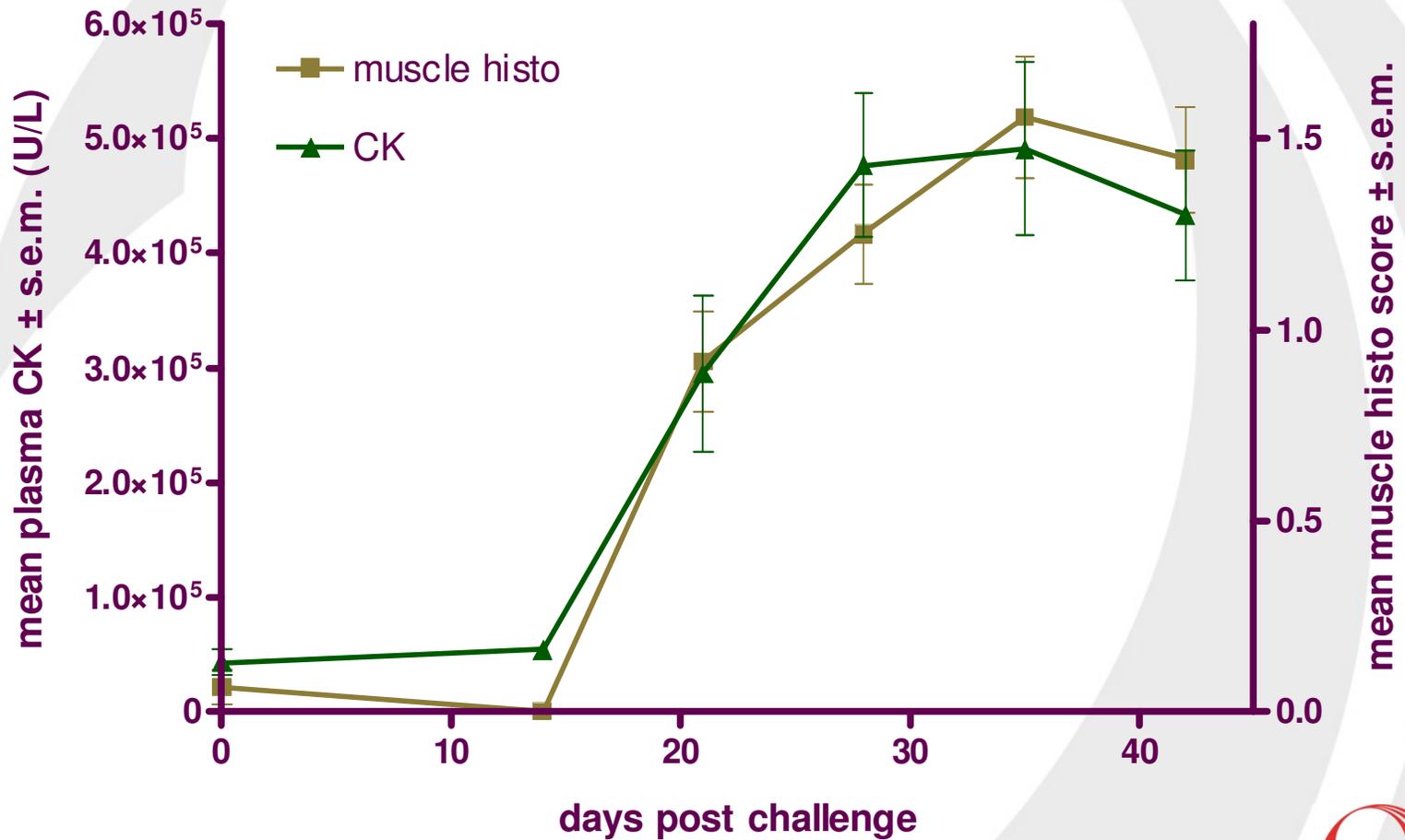
2. *VESO Vikan*

- feed either control diet or proactive diet (*Protec*)
- challenge (cohabitation)
- samplings

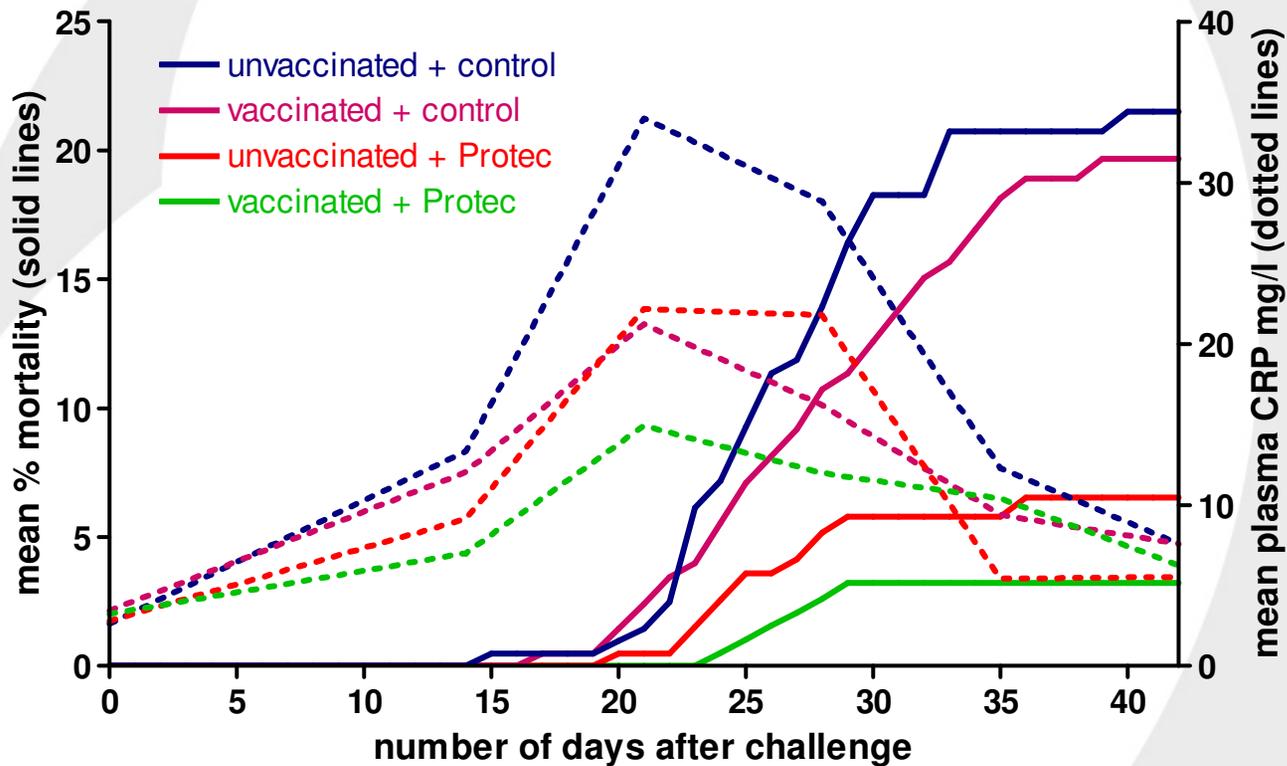
3. *VESO Vikan*

- vaccinate half of the fish population
- feed either control diet or proactive diet (*Protec*)
- challenge (cohabitation)
- samplings

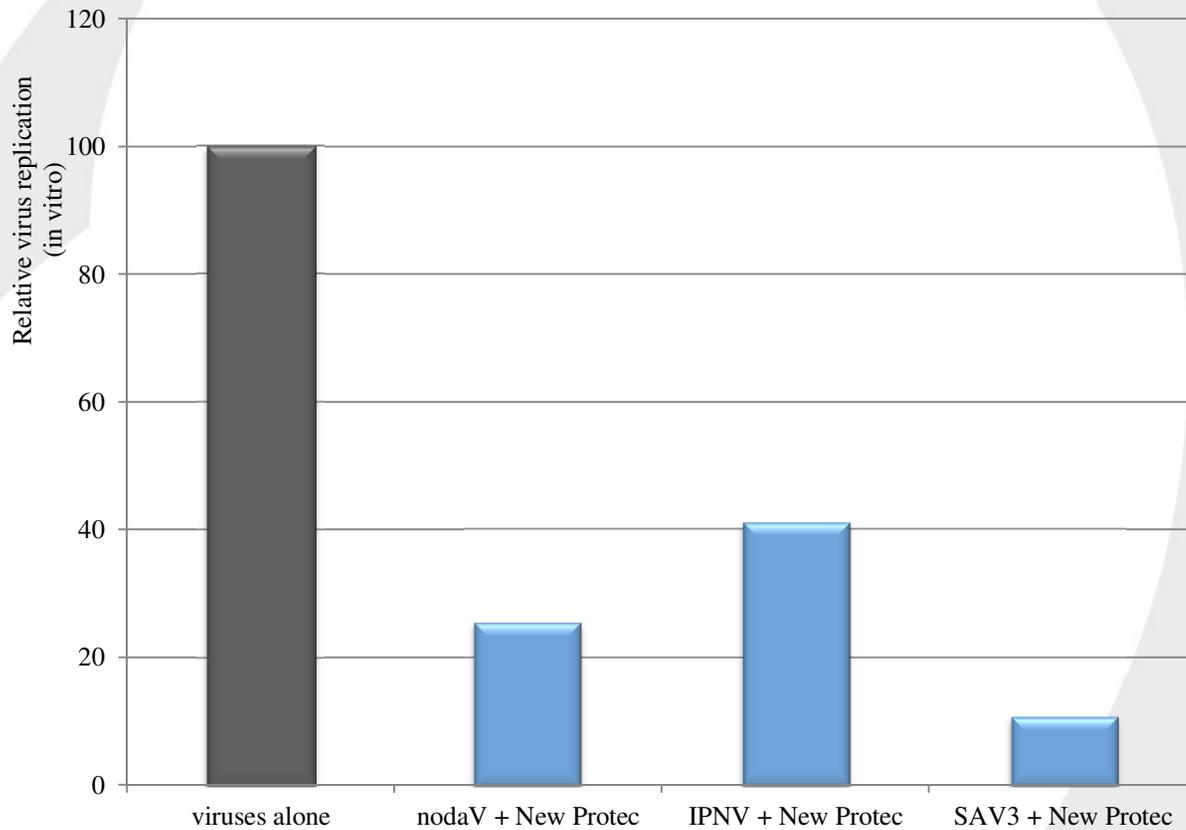
Creatine kinase as an indicator of muscle histology



CRP as a precursor of mortality

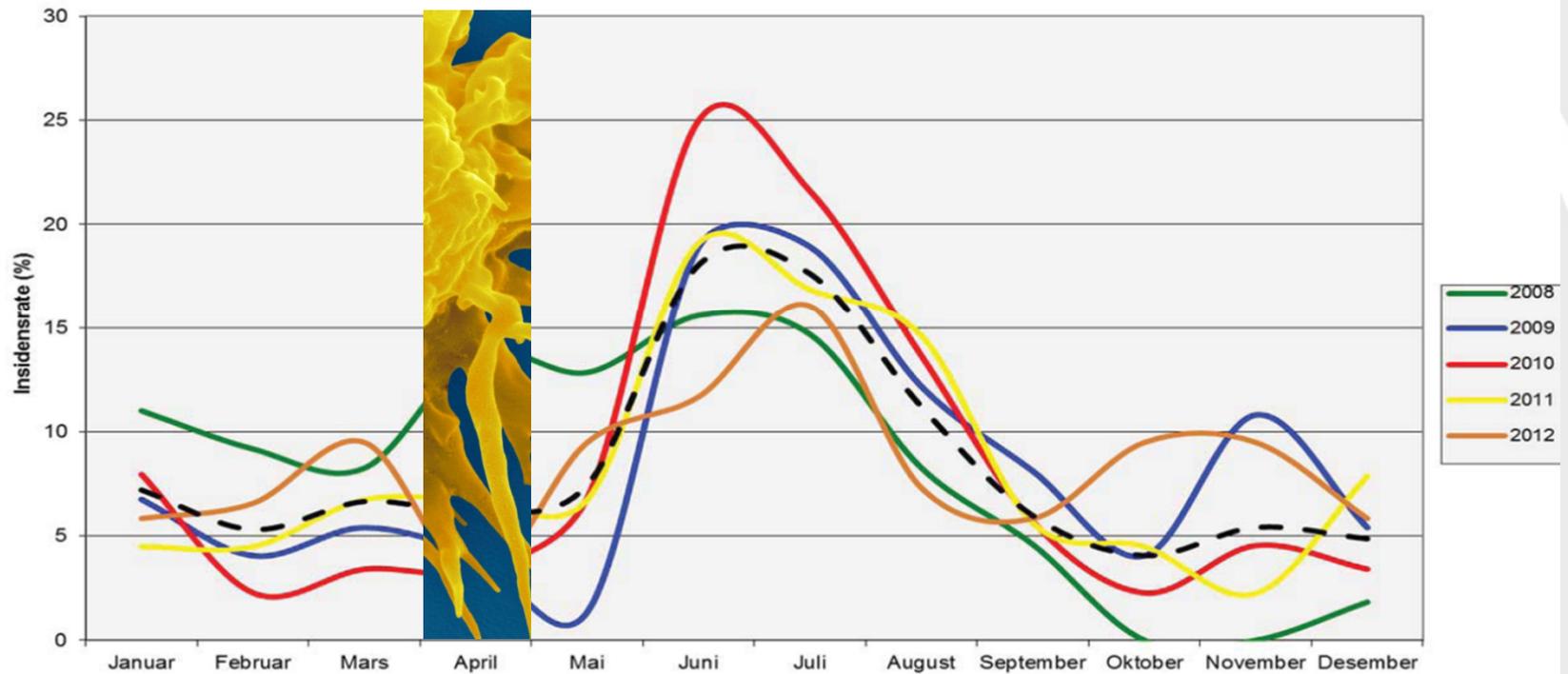


New Protec reduce virus replication

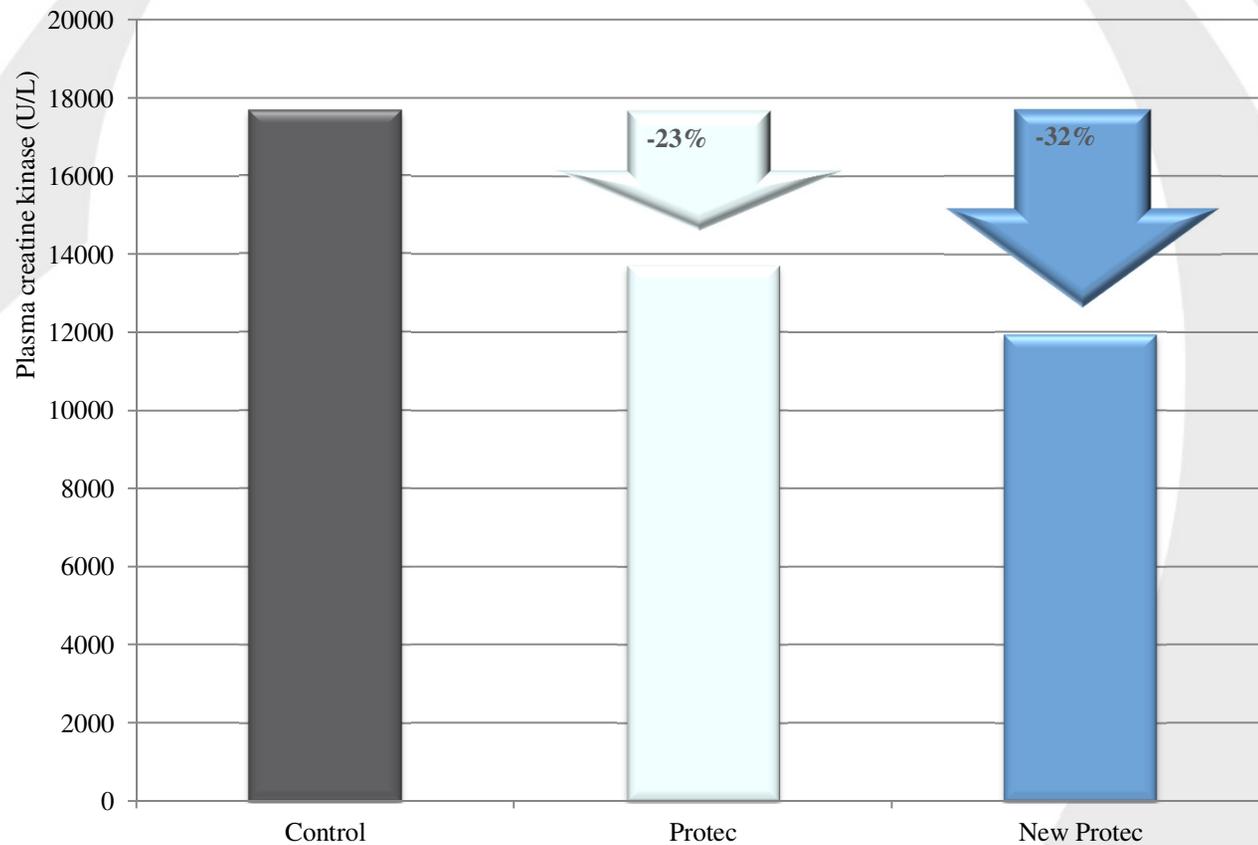


Timing is a success factor

Månedlig insidensrate for PD i 2008-2012



Cardiomyopathy Syndrome (CMS)



Summary

- Protec have shown effect on a wide range of pathogens
- React have shown lower mortality and organ damage after PD challenge
- This can give important support for the fish
- Timing and a systematic approach is important for a successful use of health diets