



How can nutrition support fish suffering from viral cardiac disease?

TriNation

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Viral diseases i Norway

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ILA	21	12	8	16	11	4	7	17	10	7	1	2	10	10	15	12	14	13
PD	15	14	22	43	45	58	98	108	75	88	89	137	99	142	137	138	176	163
HSMB				54	83	94	162	144	139	131	162	142	134	181	135	101	93	104
IPN		174	178	172	208	207	165	158	223	198	154	119	56	48	30	27	23	19
CMS				88	71	80	68	66	62	49	74	89	100	107	105	90	100	101

Rapport 6a - 2019

Fiskehelserapporten 2018



Ti uker gammel rognkjekynglet på 5mm foreviget gjennom elektronmikroskop. Foto: Jannicke Wijk-Nielsen, Veterinærinstituttet.



 Veterinærinstituttet
Norwegian Veterinary Institute

Aqura™

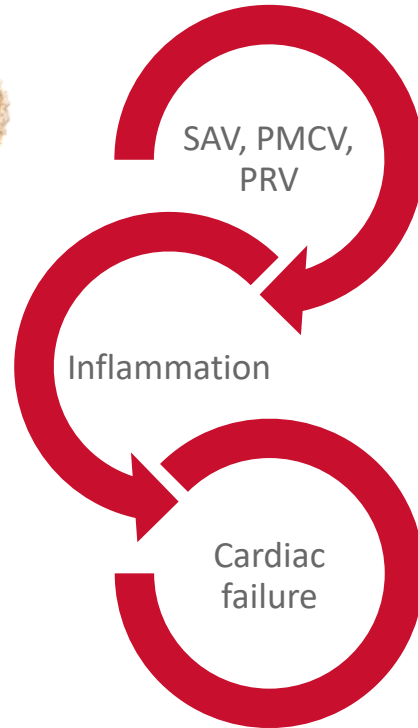
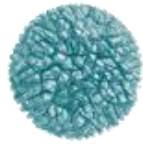


Aqura's raw material

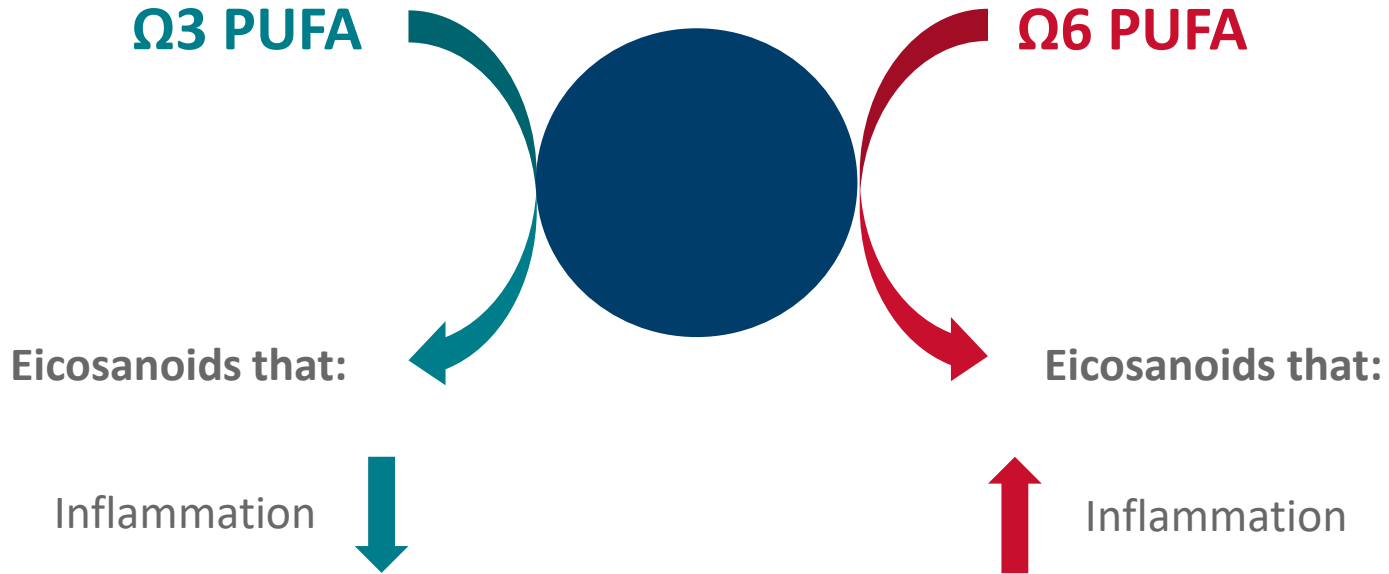
High requirements

Gentle production

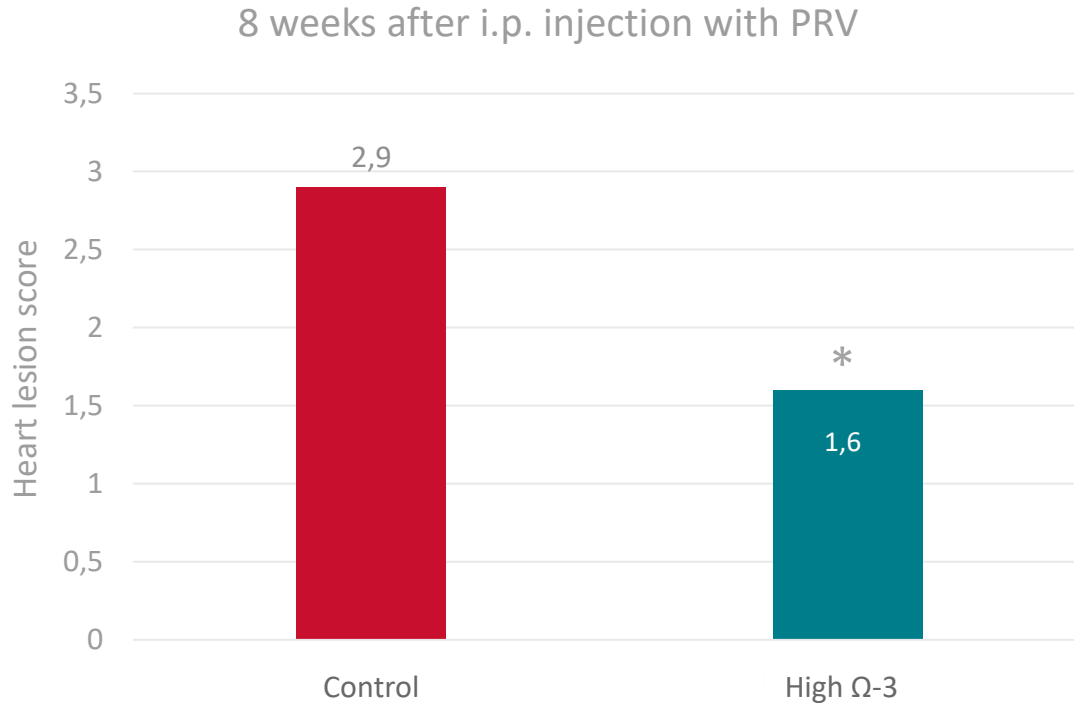
Good palatability and digestibility



Fatty acids can affect inflammatory processes



Ω 3 level affect heart lesions



Ω3 level affects inflammation

- Fish fed different EPA levels before and after infection with PRV.
- Significantly reduced HSMI pathology in the heart 6 weeks after infection.
- Regulation of immune genes in the heart 6 weeks after infection.
- *Conclusion: “The fact that the results showed such good effect of the feed after infection gives good hope of developing a customized strategy that is possible even with today's limited access to marine oils”.*



Rapport 3/2016 • Utgitt januar 2016

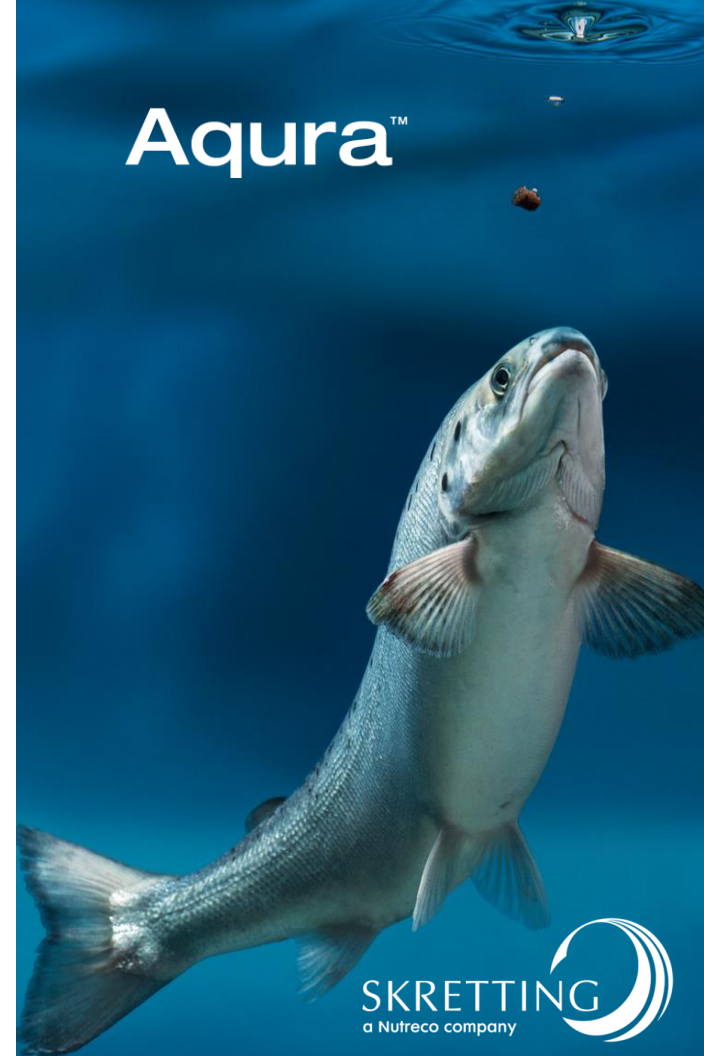
Styrt fettsyresammensetning i fôr for å forebygge utbrudd av viktige virussykdommer i laks

Bjarne Hatlen, Sven Martin Jørgensen, Gerrit Timmerhaus, Aleksei Krasnov, Marta Bou Mira, Bente Ruyter og Øystein Evensen* (* NMBU)



Aqura – a customized strategy

- High in fishmeal
- High levels of EPA and DHA
- Low $\Omega 6$ / $\Omega 3$
- High levels of antioxidants
- A selection of functional ingredients



General recommendation

Minimum 6 weeks after symptoms of PD, CMS or HSMI and for as long as the symptoms occur.

