

IMPROVING AQUACULTURE PRODUCTIVITY WITH **OPTIMUM OMEGA NUTRITION™**



North Atlantic Seafood Forum
June 2022

 **veramaris**[®]
A JOINT VENTURE OF DSM AND EVONIK

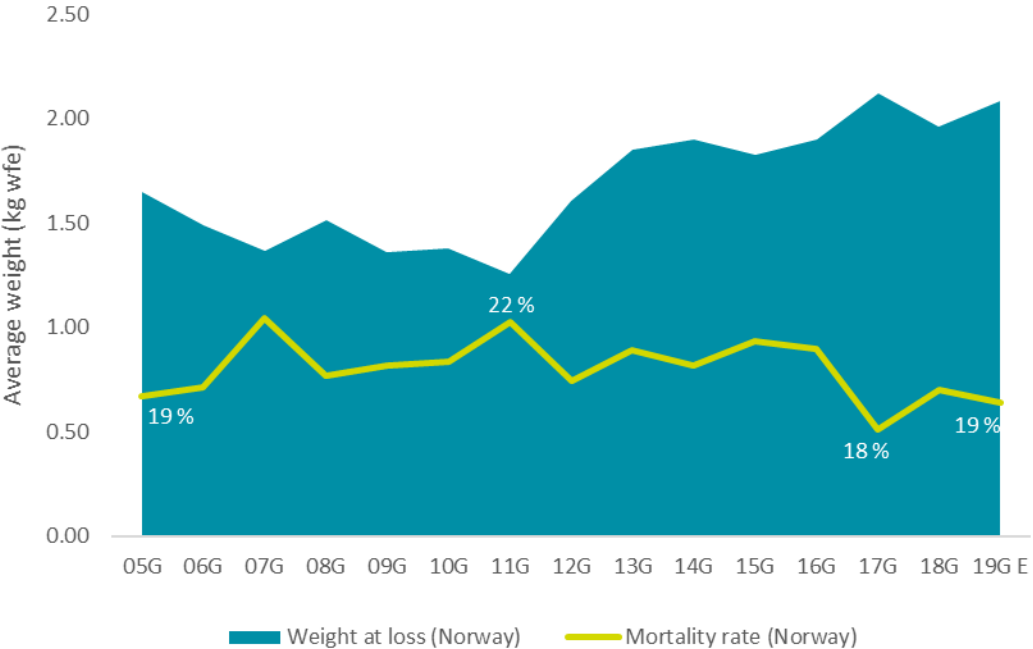


35% of all fish,
crustaceans and molluscs
harvested from oceans,
lakes and fish farms are
WASTED or lost
before they ever reach a
plate

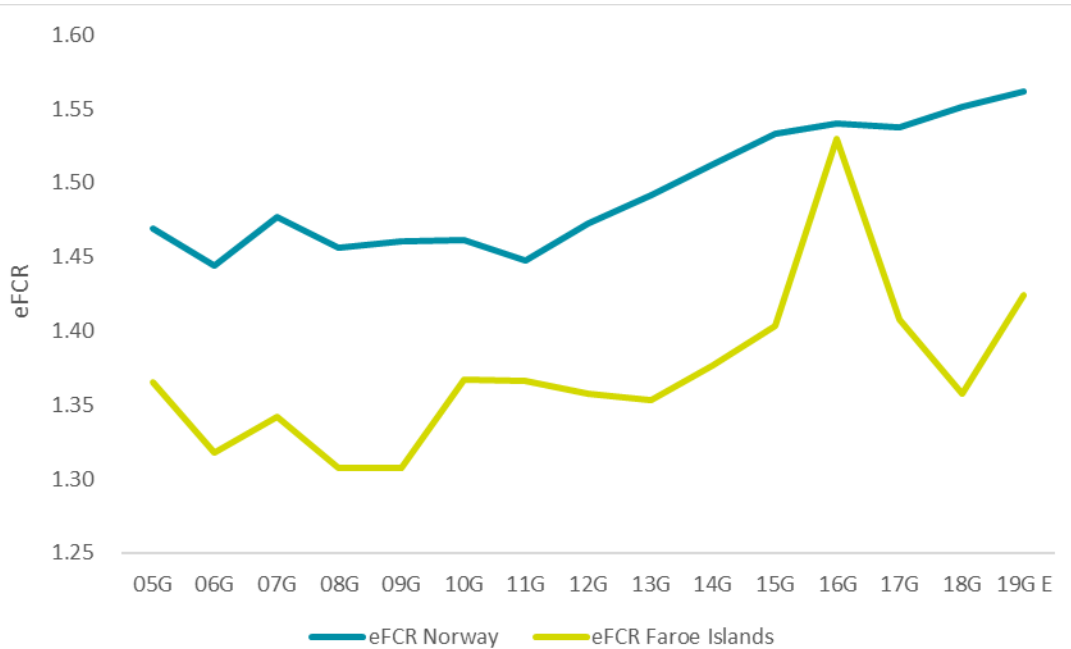
UN FAO, 2020

IS SUB-OPTIMAL NUTRITION CAUSING WASTE?

WASTE of FISH

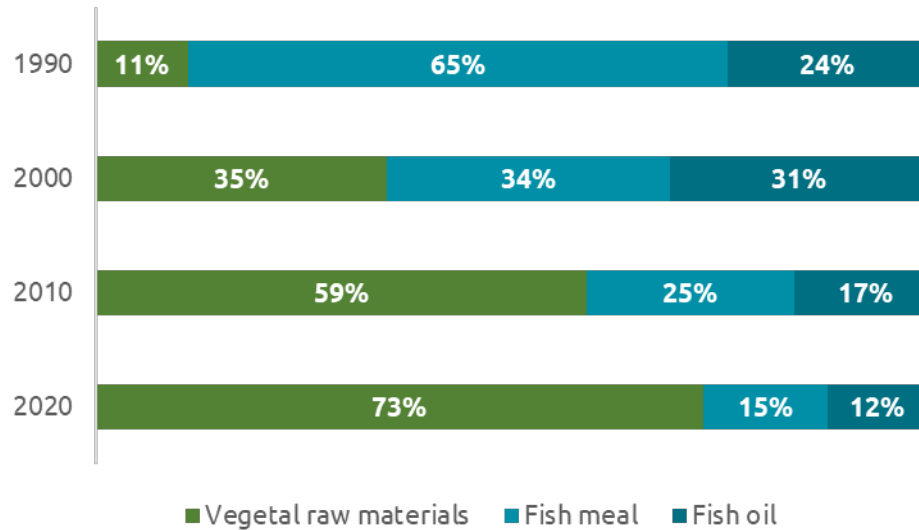


WASTE of FEED

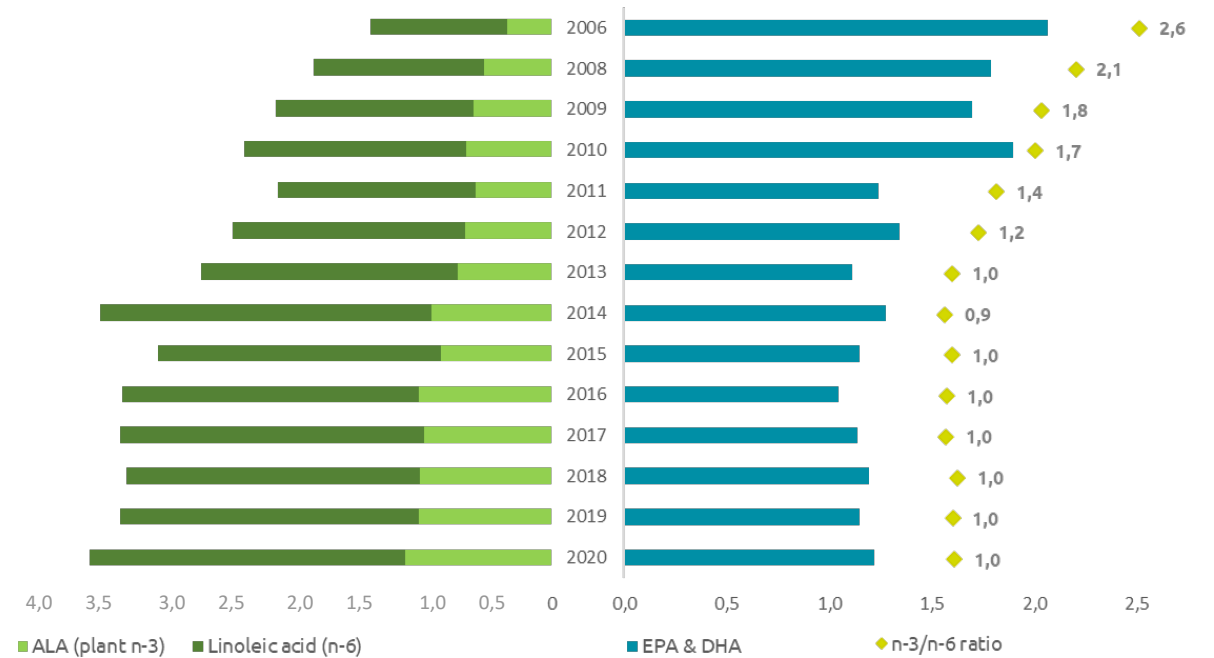


SALMON FEED: NOT WHAT IT USED TO BE

Raw materials in Norwegian salmon feed

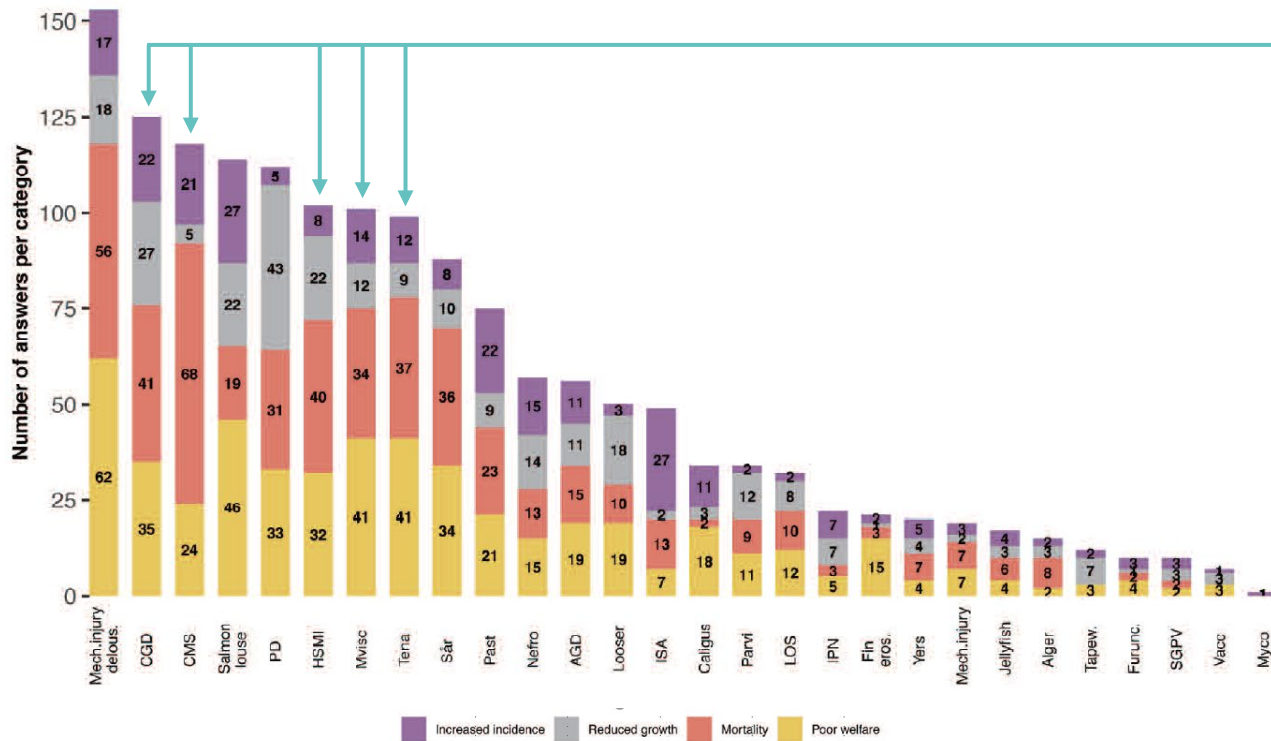


Fatty acids in Norwegian salmon flesh



HEALTH PROBLEMS IN ONGROWING SALMON

Results from a 2020 survey of fish health professionals:
Top 5 most important problems?



Health professionals name:

- CMS
- CGD
- HSMI
- Winter Ulcers

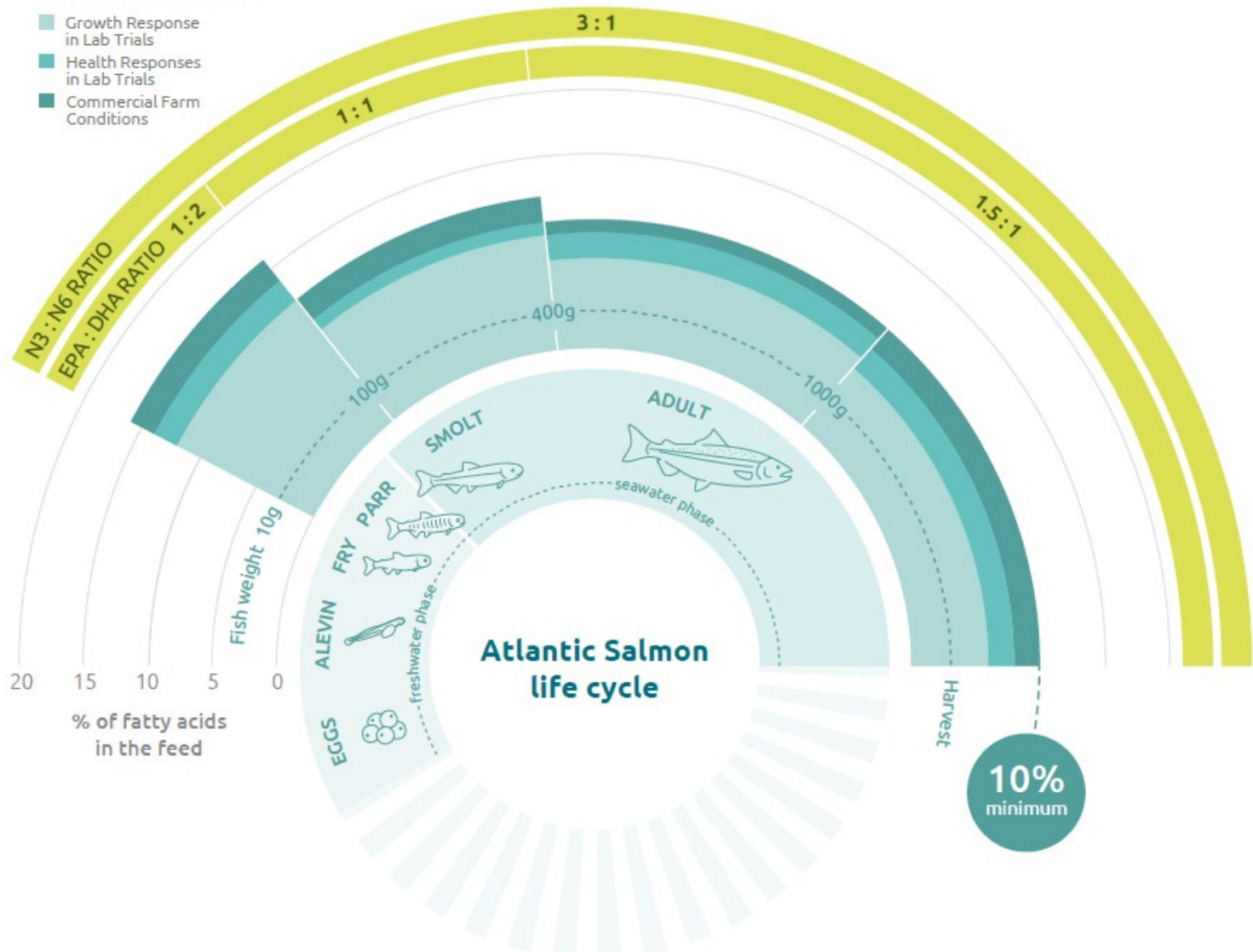
(typical & atypical)

as the main contributors to mortality
(besides mechanical injury from de-lousing)

What role does nutrition play in helping to improve these issues?

TOTAL EPA & DHA REQUIREMENT

- Growth Response in Lab Trials
- Health Responses in Lab Trials
- Commercial Farm Conditions



OPTIMUM OMEGA NUTRITION™

A protocol to improve fish health & welfare



OPTIMUM OMEGA NUTRITION WITH ALGAL OIL

WHAT'S THE BUSINESS CASE?



SMALL
Feed
Investment



BIG
Production
Benefits



BIG
Market
Benefits

- Optimum Omega Nutrition™
- Boost both EPA & DHA fatty acids in the diet
- Small incremental feed investment (getting smaller)
- Added resilience to vulnerable feed raw materials
- **LESS WASTE**
- Improvement of harvest weight
- Less mortality
- Combined improvement in FCR and Downgrades
- Huge potential for salmon category growth
- Delivering on new and changing retailer needs
- Stronger claims for sustainability leadership

ASC-MSC Certified Algal Oil:

- ✓ Reduces feed formulation risk
- ✓ Enables sustainable growth of salmon farming
- ✓ Ensures the health & welfare of salmon in production
- ✓ Improves the safety and quality of farmed salmon post-harvest
- ✓ **An easy decision to de-risk aquaculture!**



INDUSTRY EXAMPLES

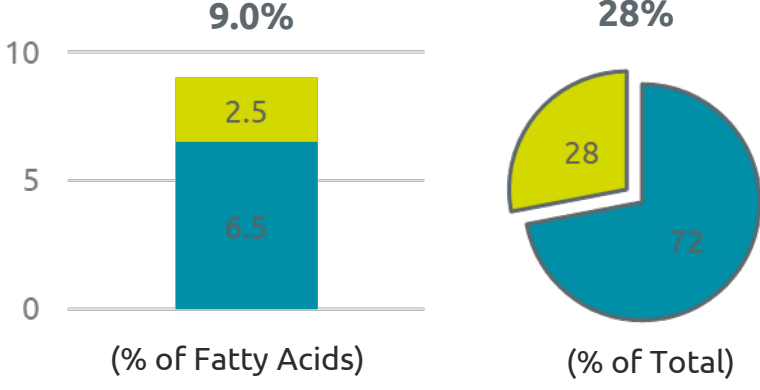
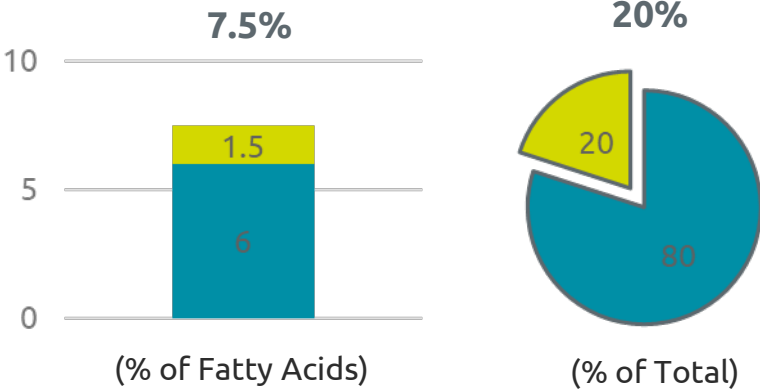


"MICROALGAE HELPS LERØY TO INCREASE THE LEVEL OF EPA+DHA IN THE FEED WITHOUT FURTHER INCREASING THE DEPENDENCY ON TRADITIONAL FISHERIES"

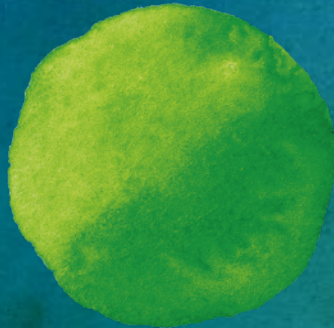
"IN 2020 THE COMPANY STARTED USING ALGAE IN OUR FEED WHICH CONTRIBUTES TO IMPROVED FISH HEALTH AND WILL CONTRIBUTE TO REDUCED CO2"

EPA & DHA IN THE FEED

EPA & DHA IN THE FEED



- EPA & DHA from Fish Oil
- EPA & DHA from Algal Oil



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For more details, please contact me @
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