

SALMON FROM NORWAY

Quality, Sustainability and Certifications

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TRUE ARCTIC

by CERMAQ

CERMAQ IS A GLOBAL SALMON PRODUCER



SLOW-RAISED ARCTIC SALMON



THE SALMON STORY

What the science says

01 PLANET

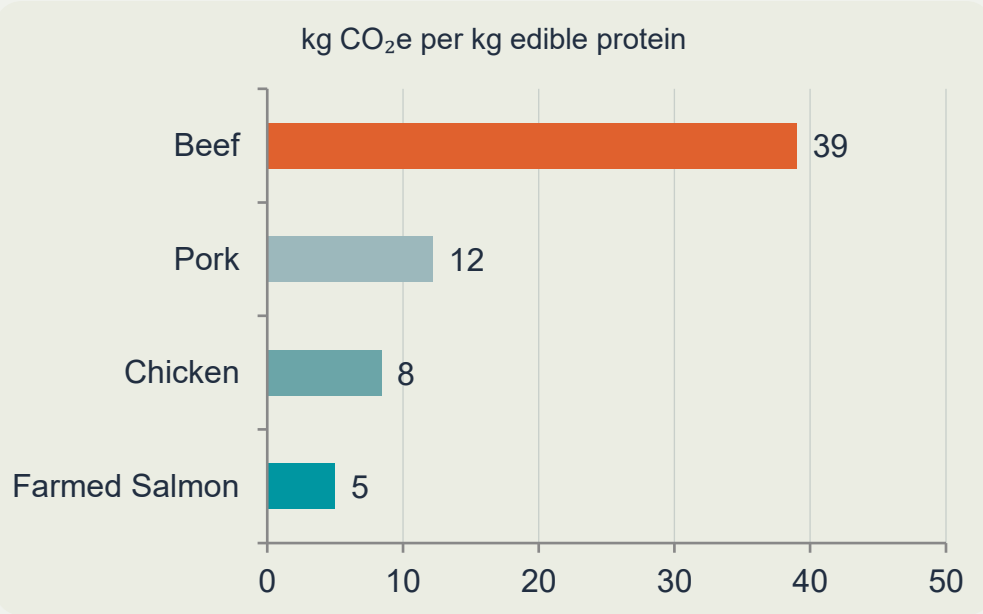
02 FOOD SAFETY

03 BRAIN

04 HEART

05 THE PLATE

LOW ENVIROMENTAL FOOTPRINT



Aquatic animals are energy efficient

- *Keep the same temperature as the water*
- *No energy spent on standing on legs*

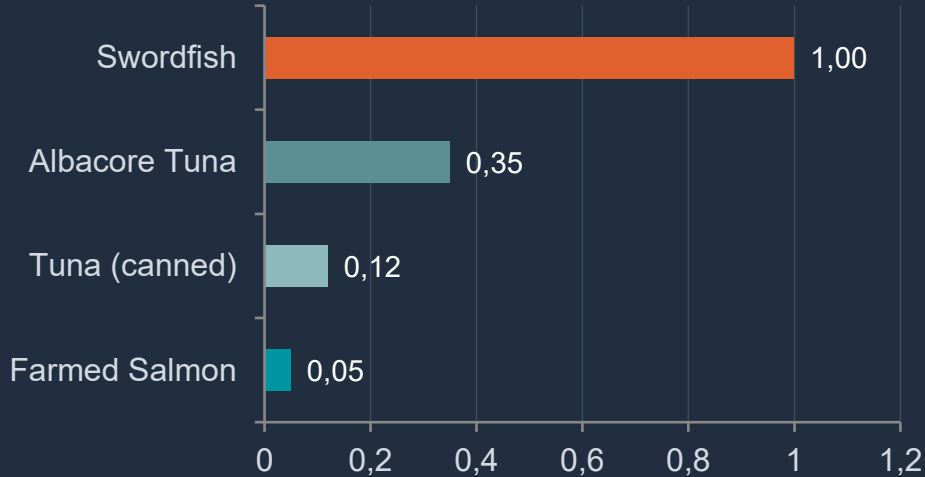
74%
edible muscle yield— >80% incl. skin+blood

-17%
GHG emissions 2023 – 2025, Feed

1.2 - 1.5
Feed conversion ratio (eFCR)

SAFE TO EAT

Mercury content (ppm) — lower is safer



<0.05 ppm mercury

Dioxins/PCBs declining over 20 years

Safe to consume

BRAIN FOOD. HEART FOOD.

Marine omega-3s: EPA + DHA

03 BRAIN

DHA = ~90% of the brain's omega-3 content

- Important for brain development, eye sight
- Associated with reduced cognitive decline & depression



EAT-Lancet: "Fish is a protein that benefits both human health and the planet."

04 HEART

- EPA+DHA lower blood triglycerides & reduce inflammation
- EPA+DHA → reduced coronary disease risk

FARMED SALMON EARNS ITS PLACE ON THE PLATE



NORWEGIAN SALMON FARMING

REGULATED, TRANSPARENT, CERTIFIED

1.72M tonnes

Norway 2025 = ~54% of global Atlantic salmon

Ministry of Trade, Industry and Fisheries

Directorate of Fisheries

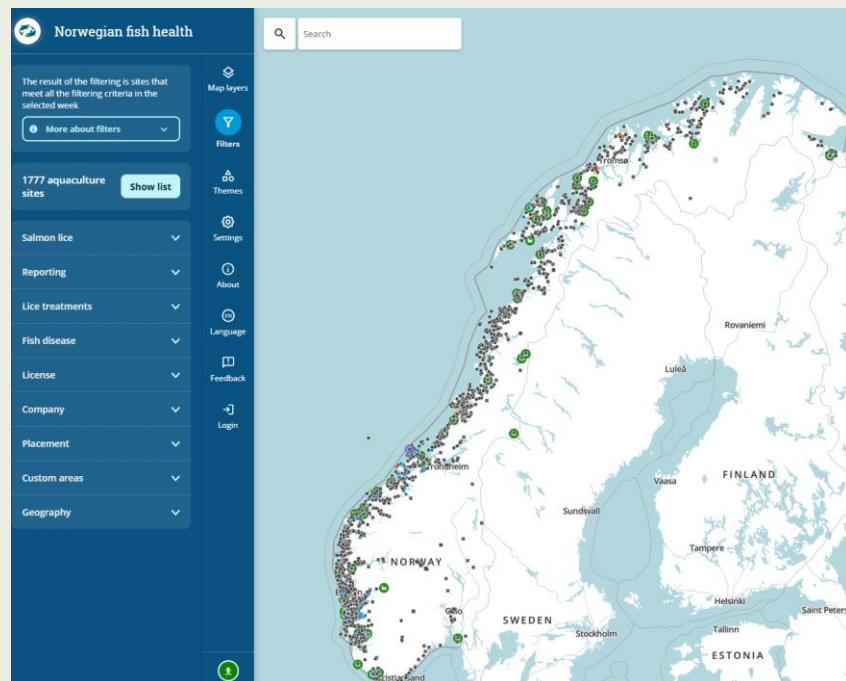
Norwegian Food Safety Authority (NFSA)

Norwegian Environment Agency

Independent certification

ASC ~50% · GlobalGAP ~90% of Norwegian salmon · annual audits by audits by accredited third parties with no commercial stake

Data available on-line



LISTERIA - A SHARED RESPONSIBILITY

Listeria — The Context

- High Fatality in vulnerable groups
- Cold-smoked salmon = listed high-risk RTE product
 - Dairy products, salads, smoked / cured meats
- Contamination is a handling & cold-chain issue — not origin

The New Regulation

- EU Reg 2024/2895
- Enforceable 1 July 2026
- Full shelf-life responsibility
 - not just at production
- Full chain: producer → processor → distributor → retailer

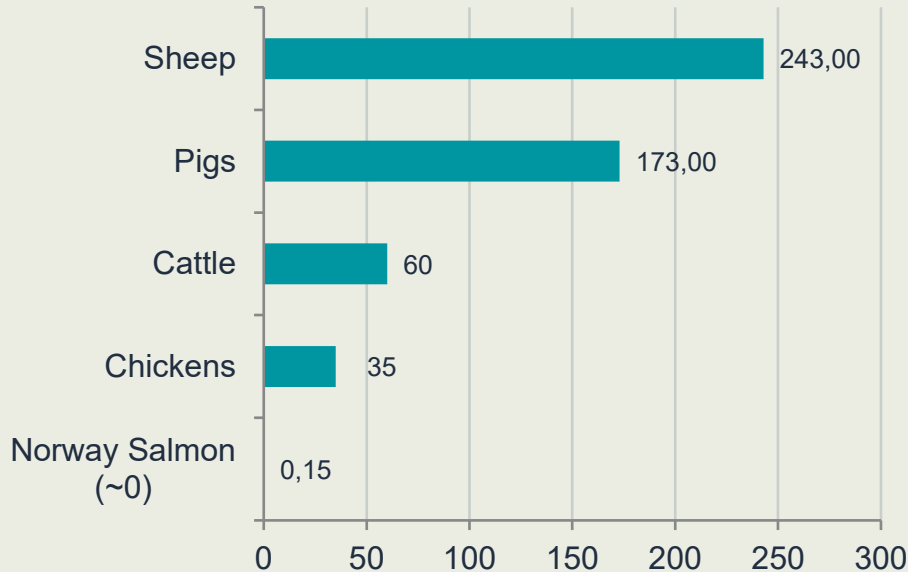
Collective Action

- Zero risk is impossible — Listeria is Listeria is an environmental pathogen
- Collective risk reduction is achievable
- Share data · share best practice
- Recalls = sustainability failure: waste + trust lost

Successful vaccine development has reduced the need for antibiotics

~50 tonnes (1980s) → < 1 tonne today = >99% REDUCTION through vaccine science

Antibiotic use: mg per kg meat (2020)



- 100% of fish is vaccinated
- Screening program (broodstock egg, smolt) to detect diseases before early
- Antibiotics only used as a last resort to safe-guard fish health and welfare
 - No prophylactic use, always after prescription by veterinarian

Sea lice is welfare issue no 1



Prevention First. Treatment as Last Resort.

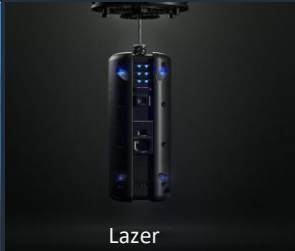
Post-smolt RAS



Preventative lice technology

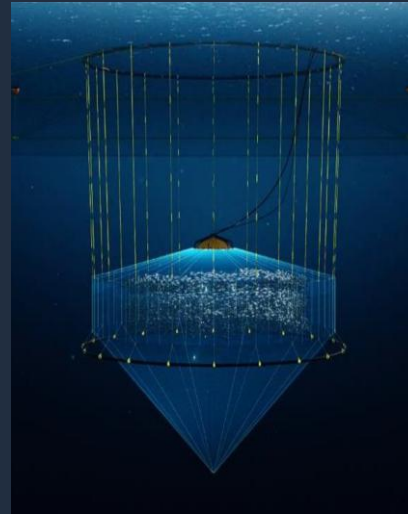


Lice skirt



Lazer

Submersible cages



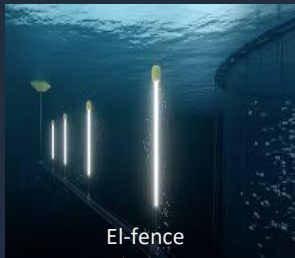
Closed cages



Bigger fish at sea-transfer reduces time fish are exposed to sea lice.



AcuLice



El-fence

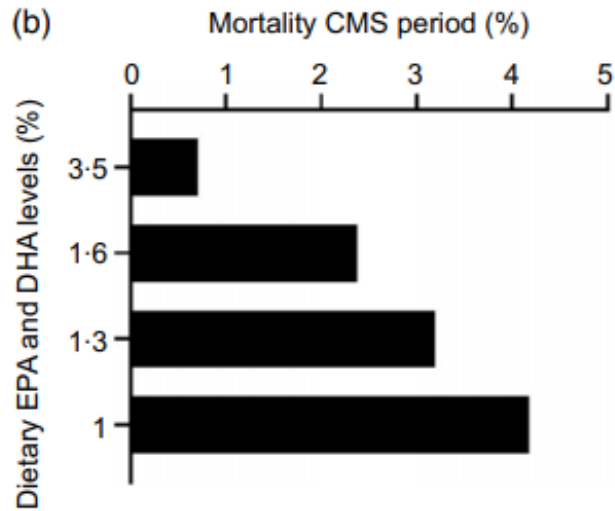
20-50% effect

40-80% effect

90-100% effect

100% effect

Nutrient composition is essential for fish health



Lutfi *et al.*, 2023



Marine omega-3s is beneficial for heart health

We need a larger feed raw material basket

- the access to feed raw materials is shrinking

Sources of marine omega-3s

Fish oils from wild fisheries

By-products from fisheries

Micro algae
=
Limited volumes

Genetically modified plant oils
Oils from salmon
=
Market barrier

Retailer commitments

Decreasing the reliance on reduction fisheries

Improving the sustainability of reduction fisheries

- 1 Achieving a FFDR<1
- 2 Promoting by-products/trimmings
- 3 Promoting novel ingredients
- 4 Studying the use of LAPs

- 5 Promoting certification
- 6 Reducing and improving the sustainability of supplies from West Africa

WHAT SALMON IS



Thank you for listening

True Arctic Salmon
- made by True Arctic People

