

BioMar fish health strategies

Premix A (market specific):

Combination of numerous nutraceuticals that act in synergy to provide a wide range of biological functions with benefits for fish health (higher cost)

Premix B (market specific):

Yeast extract based product that is cost effective for use in grower feed over longer periods (lower risk sites)

Smolt input documentation trial

Trial design:

- Smolt input trial, 62g - 600g (Ardnish FTU, Scotland).
- Triplicate 5 m pens of 250 fish

Diets:

- Control CPK
- + Premix A
- + Premix B

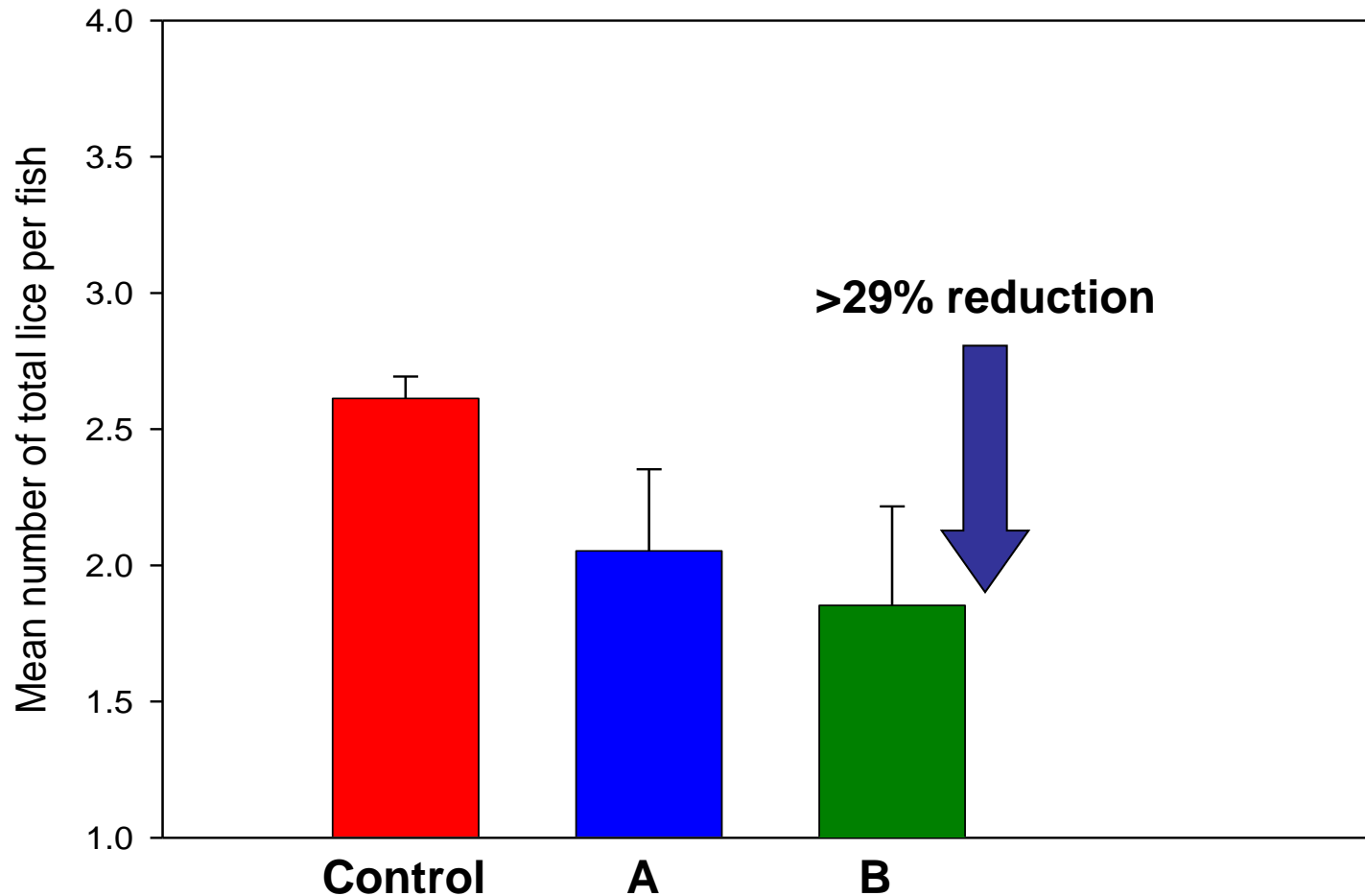


At end:

- Assessed sea lice burden
- skin mucus collection
- tissues sampled for gene expression studies

Sea lice resistance

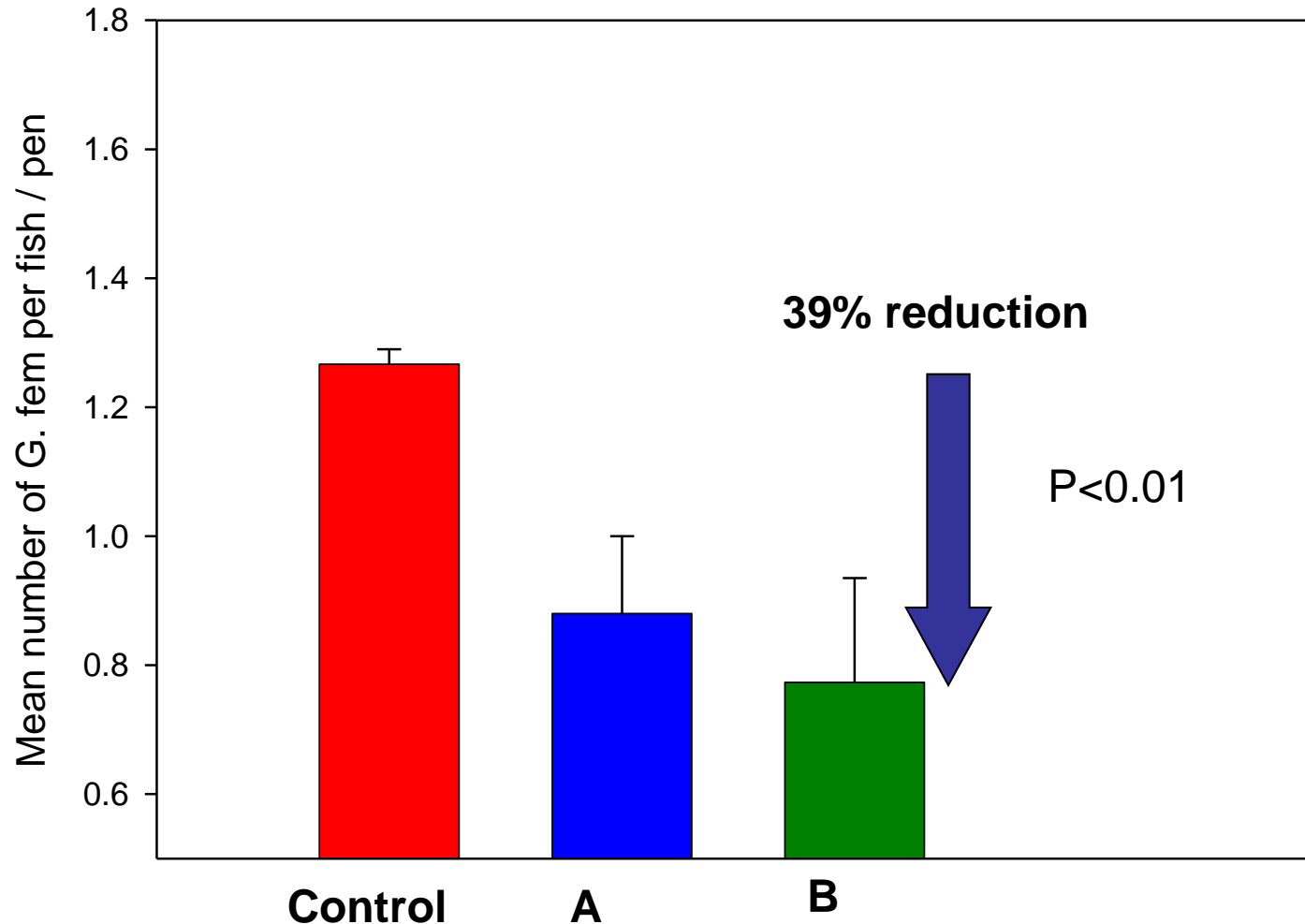
Assessment on 10% of population in each pen (mean of triplicate pens)



- **>29% less total lice on fish fed premix B ($P < 0.05$)**

Sea lice resistance

Assessment on 10% of population in each pen (mean of triplicate pens)



- **39% less *G. females* on fish fed premix B**

Recommendations for use

Challenge	A	B
Transfer – 500g	✓	
Disease pre & post outbreak	✓	
High health risk sites	✓	
Low health risk sites	✓	✓
Sea lice	✓	✓
Handling (grading, moving etc)	✓	✓
Oral medicaments? (prior to)	✓	✓

Recommendations to customers

- Designed to provide balanced package of nutraceuticals for farmed fish under challenging environments
- Not a medicine
- Not a treatment
- Used as part of an integrated lice control management
- Current activity in investigating the mechanisms of action of both premixes at the biochemical & molecular level.