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PRE- AND POST-TRANSFER PROBIOTIC CONDITIONING WITH SANOLIFE® PRO FMC IN ASIAN SEABASS (*Lates calcarifer*): IMPACTS ON GUT HEALTH, MICROBIOME COMPOSITION, GROWTH, AND SURVIVAL

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A commercial field trial in SE Asia (April–June 2025) evaluated Sanolife® PRO FMC (INVE Aquaculture), a multi-strain *Bacillus* probiotic (≥1 × 10^{11} CFU/g), as a pre- and post-transfer dietary supplement in Asian seabass. Juvenile fish (~69 g) received a 6 mm transfer diet with or without PRO FMC (0.5 g/kg) for 20 days onshore prior to sea transfer (~116 g) and for 35 days in offshore marine cages (150 fish/cage). Sampling assessed health, growth, fin condition, gut histology, and hindgut microbiome composition (PacBio full-length 16S rRNA sequencing; Genics Pty Ltd) at key timepoints.

Survival was excellent and equivalent across groups (99.9% onshore; 99.8% offshore), with no disease outbreak. No significant differences in specific growth rate were observed, though PRO FMC fish trended toward higher body weight at Day 35 (168 g *vs*. 161 g) with a significantly improved biological FCR (1.47 *vs*. 1.53; p=0.04). The standout clinical finding was reduced tail fin erosion: 32% of control fish presented with eroded fins after 35 days at sea versus only 21% in the probiotic group.

Microbiome analysis revealed substantially lower gut Vibrionaceae burdens in PRO FMC-fed fish (5× lower pre-transfer; 54× lower at Day 35; **Fig. 1**), higher Shannon diversity, and greater prevalence of beneficial hindgut anaerobes (*Clostridium*, *Terrisporobacter*, *Carnobacterium divergens*). Gut histomorphometry confirmed significantly thicker mucosal/serosal walls (243 *vs*. 163 µm; p=0.008), denser villous architecture, and greater mucus cell density (**Fig. 2**).

Results demonstrate that PRO FMC supplementation during the transfer window delivers measurable improvements in gut architecture, microbiome resilience, and pathogen exclusion, supporting reduced fin erosion and improved feed utilisation.

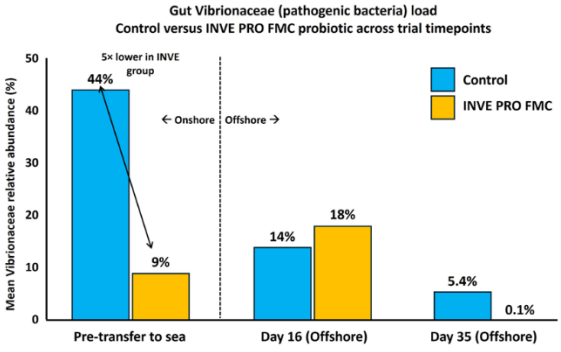


Fig. 1. Mean relative gut Vibrionaceae abundance in control and Sanolife® PRO FMC-supplemented Asian seabass at pre-transfer, Day 16, and Day 35 offshore.

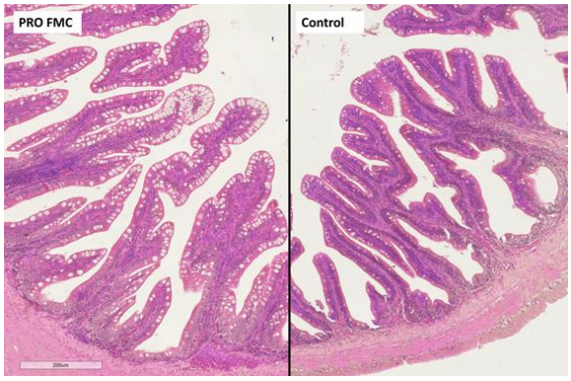


Fig. 2. Sanolife® PRO FMC promoted denser villous architecture and greater mucus cell density (+25%), indicative of a more absorptive and functionally efficient intestinal epithelium.