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Study suggests krill meal improves tilapia breeding

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A new study has concluded that krill meal inclusion resulted in positive effects on Nile tilapiaâ??s reproductive performance and higher survival of larvae. The study was conducted byÂ LABOMARÂ (the Marine Sciences Institute in NE Brazil),Â Spring Genetics TilapiaÂ in Miami, and Aker BioMarine - one of the world's largest producers of krill meal.

Krill meal is increasingly popular in aquafeeds, as a source of phospholipids, protein, omega-3 fatty acids and astaxanthin. Tilapia is the second most farmed genus of fish in aquaculture, and producers are seeking high quality offspring to improve their overall production. In the present study, scientists specifically assessed how varying levels of krill meal in the Nile tilapia diet influenced factors such as spawning, egg quantity and quality, and survival of larvae.

â??Through previous studies, weâ??ve learned that lipids and essential fatty acids can have a positive effect on reproductive performance of fish. Traditionally, farmers have included fishmeal and fish oil in the feed to meet these needs, but due to growing scarcity and fluctuating costs, more sustainable and effective ingredients are needed, and here krill meal could be a part of the solution to fill the gap,â?• said Kiranpreet Kaur from Aker BioMarine in a press release.

Study: The 12-week feeding trial was run at Spring Geneticsâ?? tilapia breeding facility in Miami. The 792 tilapia broodstock were divided into 12 cages, each with a 3:1 female to male ratio. The fish were fed twice daily, receiving one of the three test feeds: krill meal inclusion of 2 percent, krill meal inclusion of 5 percent, or a control diet mimicking commercial Nile tilapia broodstock feed.

â??As the local partner and facilitator for this study, specialising in Nile tilapia breeding, we continually seek innovative ways to improve growth, survival, and overall yield. Itâ??s important for us to partner with other stakeholders, like Aker BioMarine,

to run trials like this one and learn more about promising ingredients such as krill meal and how it can help us improve broodstock performance,â?• said Hideyoshi Segovia Uno, CEO of Spring Genetics.

Findings of the Study:

Overall egg production: Nile tilapia fed 2 percent krill meal diet achieved 18 percent higher egg production than the control group; Nile tilapia fed 5 percent krill meal diet achieved 30 percent higher egg production than the control group.

Spawning: Nile tilapia fed 2 percent krill meal had 14 percent more spawning females than the control group; Nile tilapia fed 5 percent krill meal had 29 percent more spawning females than the control group. Most females spawned twice when receiving krill meal in the diet in comparison to control fish that mostly spawned once during the trial

Larval survival: The 5 percent krill meal diet had a positive effect on total number of larvae on day 10 after hatching, 10 percent higher than the control group.

Egg composition: The Nile tilapia eggs contained higher fat content when fish were fed krill meal; n-3 fatty acid levels, with EPA and DHA, were higher in the 5 percent krill meal group versus the control group.

â??Overall, this study suggests the positive effects on reproductive performance and larval survival in Nile tilapia when krill meal is included in the diet. These results are a strong indication that krill meal is a viable and nutrient rich marine ingredient for the broodstock Nile tilapia diet. We look forward to further research to learn more,â?• Kaur concluded.