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Date: February, 29, 2008

From: Dr. M. Refik Orhun, Fishery Research Biologist, SEFSC-NOAA-DOC

Re: Public comments of Alternative Feeds for Aquaculture

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- 1) Promote the use of aquatic resources to produce alternative feeds and supplements for aquaculture
- 2) Use of Bacteria, Yeasts, microalgae (including cyanobacteria/blue-green algae) and combination cultures of bacteria-microalgae to produce:
  - a. Protein meals, i.e. microalgal or microalgae/bacterial mix meals as partial fish meal replacement
  - b. Oils, microalgal oils to be used as fish oil replacement
  - c. High value feed additives, especially those high omega-3 acid (especially DHA) and astaxanthin for fish feed additives and base for enrichment formulas in aquaculture feeds
  - d. *Schizochytrium sp.* and *Haematococcus* meals for extraction of DHA and astaxanthin, respectively
  - e. Other microalgae/bacterial species for other high-value feeds and supplements needed in aquaculture, such as other omega-3 fatty acids, i.e. EPA and ARA, pigments such as beta-carotene, phospholipids such lecithin, and other "natural" preservatives or anti-oxidants as replacement for Ethoxyquin in fish and other meals used in the production of aquaculture feeds
- 3) Promote the development of omega-3 oil extraction from fish gutting as integral part of marine fish processing plants
- 4) Promote research into large-scale production of *Nereid sp.* (*Polychaeta*) worm meals as fish meal replacement in aquaculture feeds.