Tropentag, September 18-21, 2016, Vienna, Austria

"Solidarity in a competing world — fair use of resources"

Improve the Productive Performance in Marine Fish Cage Farms in Mariout Valley, Egypt

Mohamed Essa, El-Said El-Ebiary, Mohamed Elokby

National Institute of Oceanography and Fisheries, Aquaculture Division, Egypt

Abstract

Mariout valley (12 thousand acre) in Alexandria Governorate is one of the three promising areas for marine fish culture in Egypt. The most important obstacles to the sustainable development of aquaculture in this area are: lack of sufficient experience, the use of low levels of technology and low quality protein feeds (trash fish) especially for cage culture. Mariculture in Mariout valley is based on two species: gilthead sea bream, *Sparus aurata* and European sea bass, *Dicentrarchus labrax*. As trash fish has a negative impact on the aquatic environment, the present work aimed to improve productive performance in one of the cages guideway farms in Mariout Valley through the use of a balanced pelleted diet (45 % crude protein and 525 kcal gross energy per 100 g diet) at a rate of 3 % of total biomass/day with 2 g kg^{-1} diet prebiotic Bio-Mos®. Sea bream and sea bass fingerlings of mean initial body weight of 57.72±0.78 g $fish^{-1}$ were stocked separately in floating net cages (300 m^3 each) at a density of 3600 fish $cage^{-1}$ and represented in 3 feeding treatments for each species for 7 months fattening period. The results of the present study proved that, adding prebiotic Bio-Mos® to a balanced fish diet improved greatly productive performance parameters for sea bream and sea bass compared with counterpart fed on trash fish only or just balanced diet without Bio-Mos®. The following criteria were improved in sea bream and bass, respectively: 1) the growth rate by 50.69 % and 32. 22 %., 2) the survival percentage by 18.84 % and 15.11 %., 3) feed conversion ratio by 86.88 % and 80.73 %., 4) fish production per cage by 66.96 % and 46.03 %, and 5) economic evaluation parameters (operating ratio, return on sales, return on costs, return on equity). The pre-biotic diet confirmed its ability to bear the burden of increased costs of production by covering the costs resulting in an higher economic surplus than trash fish treatment which achieved lowest fish production and net income.

Keywords: Cages, economic, Mariout Valley, prebiotic, productive, sea bass, sea bream

Contact Address: Mohamed Essa, National Institute of Oceanography and Fisheries, Aquaculture Division, Samy Raouf Str. No. 8 from Iskander Ibrahim Miami, Alexandria, Egypt, e-mail: messa51@yahoo.com