

## ABSTRACT

This work was conducted in the central laboratory for Aquaculture Research (CLAR), Abbassa, Abu-Hammad Sharkia Governorate. This study was designed to investigate the effect of replacement of fishmeal by micro algae on fish performance of Nile Tilapia in wet lab "in door condition".

A 12-week feeding trail following by a 2-week digestibility trail were conducted with Nile tilapia fingerling (*Oreochromis niloticus*), to evaluate micro algae (*Scenedesemus spp*) as an alternative component to fish meal in complete diets. A control diets without micro algae served as a reference from which inclusion levels of 5, 10, 15 and 20% micro algae were investigated by the replacement of fish meal. All diets were formulated to be isonitrogenous and iso caloric in terms of crude protein (32%) and gross energy (400 kcal/100 gm diet). On the basis of feeding and digestibility trails also physiological performance micro algae (*Scenedesemus spp*) was found to successfully replace up to 15% of the fish meal in the practical diet, may be this is ascribed to the companion effects of micro algae and fish meal protein also feeding behavior of Nile tilapia (herbivorous). However, fish fed 10 and 15% showed significant increase growth rate 1.16 and 1.22 than other diet. Fish fed 10 and 15% produced best feed conversion 2.33 and 2.38 respectively while fish fed control diet showed poor feed conversion (2.81). Diet containing 15% algae gave higher condition factor (1.88), while control diet gave lower value (1.60). Fish fed 15% algae resulted the higher value of chemical composition of dry matter, crude protein and Ash, while fish fed

20% algae resulted higher value of ether extract and gross energy. Diet containing 15% algae product increased significant of digestibility coefficient of dry matter, crude protein, ether extract and growth energy, while no differ significant between all treatments in N.F.E. Fish fed 15% resulted best value of creatinine, total protein, triglycerides and follicle stimulating hormone, while control diet gave best value of uric acid, diet containing 10% algae gave best value of S.G.P.T., S.G.O.T, cholesterol, Glucose and low density lipoprotein, diet containing 5% algae gave best value of high density lipoprotein.

Generally, the replacement by micro alga 15% was higher significantly than other treatments. More research is needed to determine the optimum level of replacement by alga on different fish species and fish size "life stages" under different conditions.

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