

Fatty Acids in Female's Gonads of the Red Sea Fish *Rhabdosargus Sarba* During the Spawning Season

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Abstract : Objectives: To determine the fatty acids profiles in female fish, *R. sarba* from the Red Sea during the spawning season. Methods: Monthly individual *Rhabdosargus sarba* were obtained from Bangalah market in Jeddah, Red Sea and transported to the laboratory in ice aquarium. The total length, standard length and weight were measured, fishes were dissected. Ovaries were removed, weighed and 10 ml of concentrated hydrochloric acid were added to 10g of the ovary in a conical flask and immersed in boiling water until the sample was dissolved and the fat was seen to collect on the surface. The conical was cooled and the fat was extracted by shaking with 30 ml of diethyl ether. The extract was bowled after allowing the layers to separate into a weighed flask. The extraction was repeated three times more and distilled off the solvent then the fat dried at 100oC, cooled and weighed. Then 50 mg of lipid was put in a tube, 5 ml of methanolic sulphuric acid was added and 2 ml of benzene, the tube well closed and placed in water bath at 90oC for an hour and half. After cooling, 8 ml water and 5 ml petroleum was added shacked strongly and the ethereal layer was separated in a dry tube, evaporated to dryness. The fatty acid methyl esters were analyzed using a Hewlett Packard (HP 6890) chromatography, asplit /splitless injector and flame ionization detector (FID). Results: In female *Rhabdosargus sarba*, a total of 29 fatty acids detected in ovaries throughout the spawning season. The main fatty acid group in total lipid was saturated fatty acid (SFA, 28.9%), followed by 23.5% of polyunsaturated fatty acids (PUFA) and 12.9% of monounsaturated fatty acids (MUFA). The dominant SFA were palmitic and stearic, the major MUFA were palmitoleic and oleic, and the major PUFA were C18:2 and C22:2. During spawning stages no significant differences in total SFA, MUFA and PUFA, the highest value of SFA was in late spawning (36.78%). However, the highest value of MUFA and PUFA was in spawning (16.70% and 24.96% respectively). During spawning season there were a significant differences in total SFA between March (late spawning stage) and December (nearly ripe stage), ($P < 0.05$).

Keywords : sparidae, *Rhabdosargus sarba*, fish, fatty acids, spawning, gonads, red sea

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