

Fatty acid composition and fat-soluble vitamins content of  
sprat (*Sprattus sprattus*) and goby (*Neogobius rattan*)  
from Bulgarian Black Sea

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**Abstract** Sprat and goby are commercially important Bulgarian Black Sea fish species. The fatty acid (FA) composition was analyzed by Gas Chromatography with MS detector. Lipid extraction was done according to the Bligh and Dyer method. The monounsaturated FA accounted were 26.93 % for sprat and 30.38 % for goby and palmitoleic (C 16:1) and oleic (C 18:1) acids were dominants in this group. In comparison with other groups, the polyunsaturated FA showed the high level in goby – 37.60% including eicosapentaenoic (C 20:5 n3, EPA), docosahexaenoic (C 22:6 n3, DHA) acids, and lower level on sprat – 34.33%. The level of n 3 polyunsaturated fatty acid was higher than the total n 6 polyunsaturated fatty acid in the all analyzed Black Sea fish species. HPLC method was used for determination of Vitamin A (all-trans-retinol), Vitamin D<sub>3</sub> (cholecalciferol) and Vitamin E ( $\alpha$ -Tocopherol) content. The results from fat-soluble vitamins show the differences between sprat and goby. The present studies suggest that both fish species are good sources of n 3 fatty acids and vitamins A, D<sub>3</sub> and E.

**Keywords:** Black Sea fish, fatty acids, PUFA, Vitamin A, Vitamin D<sub>3</sub>, Vitamin E

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