OIL POLLUTION IN THE SURFACE WATER OF THE AEGEAN SEA IN 2007 AND 2008

Esra Billur Balcioglu [1]*, Pelin Saliha Ciftci [1] and Mine Cardak [1]
[1] Istanbul University Fisheries Faculty Ordu cad. No 200 Laleli/Istanbul, Turkey - ebillur@istanbul.edu.tr

Abstract
Oil pollution of the Aegean Sea was investigated at 13 stations in August 2007 and 11 stations in August 2008. The oil level was calculated using references as Iraq crude oil and chrysene. The highest oil pollution was found as 63,09 µg/L at Station 13 in 2007 and 93,58µg/L at station 2 in 2008. A comparison of the present results with data obtained earlier in the same region the oil pollution level increased during the years.
Keywords: Aegean Sea, Surface Waters, Pah

Oil pollution is a major problem of sea water. In this study oil pollution was determined in the surface water of the Aegean Sea at 13 stations in 2007 and 11 stations in 2008. The samples were collected by R/V YUNUS-S during the August in 2007 and August in 2008. Sampling stations are shown in Fig.1. The seawater was taken in 2,8 L amber glass bottles and 15 ml dichlormethane (DCM) was immediately added for preservation. The seawater samples were extracted with DCM. The extract was distilled and the residue was taken with hexane and analyzed by spectrofluorophotometer (Shimadzu RF 5301) at 310/ 360 nm (ex/em). References used are Iraq crude oil was used as reference according to suggestion [1] and chrysene (Aldrich) [2].

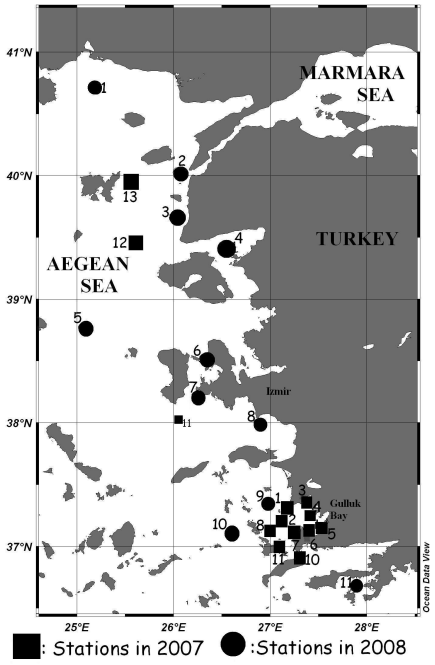

Fig. 1. Sampling station in Aegean Sea

The equation of calibration curve for Iraq crude oil: y= 427,50xC + 2,38 r^2= 0,99 for chrysene: y= 2134,05*C – 3,55 r^2= 0,99. The oil pollution amount in sea water samples are shown in Fig. 2. Oil pollution of the Cretan Sea, Southern Aegean Sea was found at the range of 0.092- 0.317 µg/L [3] in the region of Northern Aegean Sea (Thermaikos Gulf), Greece. Total PAH concentration was ranged from 9,7 to 36,2 ng/L [4]. In Turkish part of Aegean Sea, the oil concentrations were found in coastal and open sea area 0.09- 25.5 µg/L [5], 0.10-2 µg/L and Aliaga and Izmir Bay 10-25 µg/L [6], in Northern Aegean Sea, 0.1-12.5 µg/L [7] and 3.93- 38.28 µg/L in the surface water of the Aegean Sea [8]. As can be seen in Fig.2 the highest oil pollution level was found highest at station 13 as 63,09 µg/L in 2007 and station 2 as 93,58µg/L in 2008. Limit value of oil in sea water is reported as 2.5 µg/L by WHO. According to our findings the pollution level of examined area are higher than limit value given by WHO. When compared all results with earlier findings, the oil pollution level was found are higher than previous studies.

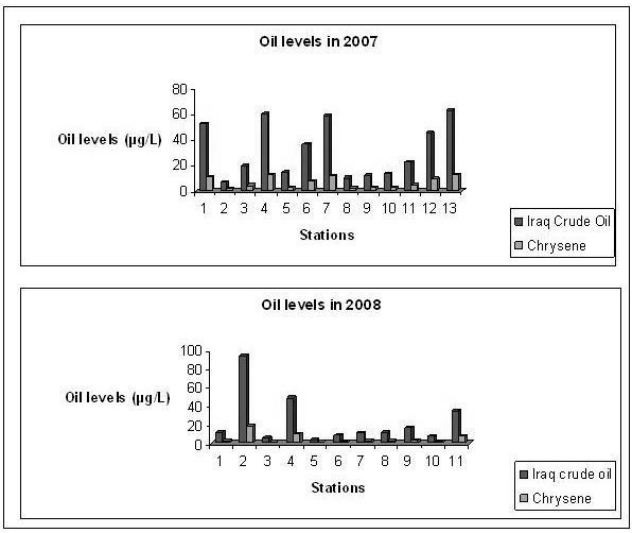

Fig. 2. The oil concentrations found in the samples (µg/L)

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