The First International Fisheries Symposium in Northern Cyprus

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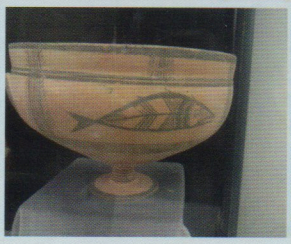

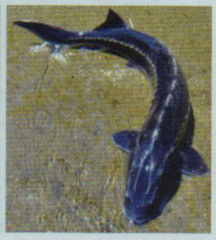

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Title: A comparison of alternative circle hook and J style hook performance in traditional pelagic longline fishery in Turkey

Abstract:

Circle hooks have been encouraged as an alternative to traditional J-hooks in pelagic longline fisheries to minimize bycatch mortality and injury to sea turtles and other marine wildlife. The effects of circle hooks on swordfish (*X. gladius*) catch in a pelagic longline fishery were considered in fishing experiments off the Aegean coast of Turkey. We used conventional J-hooks (Mustad 2315-2/0) and alternative circle hooks (Eagle Claw 4/0) for each fishing operation and compared catch rates, catch compositions of target and non-target species. Prior to this study, nevertheless, circle hooks had not been used by domestic commercial pelagic longline vessels in Turkey. The main objective of this work is to evaluate the efficiency of circle hook in comparison with the J-hook using with sardine (Sardina pilchardus). The relative performance of circle and traditional J-style hooks was tested during twenty-three pelagic longline fishing trips between August 2010 and September 2012. A total of 2300 hooks were used equally divided between circle and J-style hooks consecutively. All fish caught were identified and measured for total and fork lengths, and weights, the time of haulback, and hook type as well as by-catch fish were recorded. A total of 52 fish were caught belonging to 11 species during the sampling surveys. The mean CPUEs were 2711.48 ± 433.57 g/50 hooks for longlining. On average, CPUE was 1937 g/50 hooks for the J-hook and CPUE for circular hooks was 3056 g/50 which was 64% higher making an overall significant difference in CPUE between the J-hook and the circle hooks ($P < 0.05$). The results appeared that, using circle hook, the percentage compositions of target fish (swordfish and dolphin fish) and by-catch fish were different, 84.5% and 15.5% respectively. In similar, J-hook showed a higher difference between these 2 components, target fish 83.7% and by-catch fish 16.3%. Most of the 52 hooked specimens were caught on each hook type (69.2% on circle hooks and 30.7% on J hooks). In particularly, 18 swordfish were captured. Weights of hooked swordfish were different between hook types, 67.5 % on circle hooks and 33.2% from J hooks.

Keywords: Efficiency, circle hook, J-hook, swordfish, pelagic longline fishery, Aegean Sea.