

hooks. Experiments were conducted at two aqua tourism sites in Narakal, Kerala with 'J' hook (No. 19) and circle hook (No.12) using shrimp as bait. Hooking location and presence and extent of bleeding were recorded soon after hooking and immediately the fishes were tagged and released to floating cages of 1x0.6x0.6 m. Incidence of mortality was observed for 72 h. In the case of circle hook, maximum fishes were hooked at upper lip (56.25%), followed by buccal cavity (31.25%) and lower lip (12.5%). In 'J' hook, incidence of buccal cavity hooking (56.25%) was predominant followed by upper lip (43.75%) and lower lip hooking (6.25%). Contrary to most reports, no deep hooking was observed in either 'J' or circle hooks and consequently, the extent of bleeding at the hooking point was also very minimal. In fishes caught by 'J' hook, 57.14% did not have bleeding while 17.85% had slight bleeding, moderate bleeding in 14.28% and severe bleeding in 10.71%. In fishes caught by the circle hook, values were 54.54, 36.36 and 9.09 % respectively for no bleeding, slight bleeding, and moderate bleeding. In circle hook, no severe bleeding was recorded in any of the fishes caught. No fish mortality was recorded within 72 h of post-release. Low physical injury coupled with less handling time and sturdy nature of fish could be the reasons for no mortality and the very small mouth opening of tilapia would have prevented deep hooking. This study is preliminary and more studies using different types of fishes needs to be undertaken for substantiating the results.

FS PO 22

Effect of mesh lumen area on girth of fishes and catch in deep sea gill nets operated off Cochin

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Gill net is one of the most common and a very selective fishing gear used all around the world. A wide range of designs with different hanging ratios are often used in the fishery. The present study compared the effect of different hanging ratios of drift gillnets on catch rates, size composition and catch per unit effort (CPUE). Maximum girth of fish caught was compared to lumen area of the mesh with reference to different hanging ratios. The experiments were conducted with three drift gillnets of 140 mm mesh size made of polyamide 210x9x3 rigged at three hanging ratios, E= 0.4, 0.5 and 0.6 respectively. Experiments were conducted onboard FV Sagar Harita at 40-60 m depth off Cochin during September 2016 to February 2017. The major species caught were *Scomberomorus commerson*, *Sphyraena jello*, *Caranx* sp., *Rastralliger kanagurta*, *Parasromateus niger* and *Istiophorus platypterus*. Maximum catch was recorded in nets rigged at 0.5 (53.16%) followed by 0.4 (23.56%) and 0.6 (23.26%) hanging ratio. Among different modes of capture, wedging & entangling (37.26%) and wedging (29.61%) contributed the most to the catch. Maximum girth of three species, *R. kanagurta*, *P. niger* and *S. commerson* were compared with mesh lumen area. The maximum girth at which *P. niger* was caught decreased with increase in hanging ratio and the trend was reverse for *S. commerson*. The relationship was different in case of *R. kanagurta*, where the maximum girth decreased initially from 0.4 to 0.5 and then increased at 0.6 hanging ratio. Comparing mesh lumen area with maximum girth could be a novel concept for determining optimum size of fishes as per minimum legal

size/sustainability is concerned. The results of the finding are discussed in the paper.

FS PO 23

Diversity of species caught in ring seines off Cochin region, Kerala

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Total number of marine fishery resources landed along the Indian coast during 2015 was 735 species. Among the maritime states, Kerala recorded maximum number of species in the marine landings and the number increased by 70 compared to 2014 figures. The study was conducted from January to December 2016, to analyse the diversity of species caught in ring seines in Cochin area in different seasons (pre-monsoon, monsoon and post-monsoon) from different categories (small meshed type I, small meshed type II and large meshed) of ring seines based on indices of species richness, diversity and evenness. Ring seines with 10 mm mesh size are categorized as small meshed and 20 mm as large meshed. The study revealed the presence of 86 species belonging to 54 genera, 34 families, 14 orders and 5 classes from all three categories of ring seines. The Margalef richness indices showed highest value in small meshed ring seine type II during the pre-monsoon season and lowest value was observed in large mesh ring seine during the monsoon season. Diversity indices were highest in small meshed ring seine type II during the post-monsoon season and the lowest was observed in large mesh ring seine. The evenness indices showed highest value in small mesh ring seine type II during the post-monsoon season and lowest value was observed in

large mesh ring seine during the pre-monsoon season. Oil sardine (*Sardinella longiceps*) was the most dominant species landed in all the three types of ring seines. The study is important to understand the diversity of fish landed which will be helpful in management and conservation programmes.

FS PO 24

Non biodegradable marine debris in the fishing grounds along the peninsular coasts of India

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Non-biodegradable marine debris (NBMD) such as derelict fishing gears and their parts, polythene covers, carry bags, synthetic packaging materials etc. cause serious damages to the benthic ecosystem including the marine biota. Pollution by plastic debris is one of the major threats to marine life and plastics constitute most of the marine litter worldwide. We report here the monthly variation in the plastic marine debris and its relative percentage in the quantity of fish caught from the trawling grounds off Cochin, Ratnagiri and Mumbai along the west coast as well as from Visakhapatnam and Tuticorin along the east coast of India. The mean values of NBMD from the fishing grounds registered a maximum of 49.11 kg/km² off Mumbai and the lowest value of 2.25 kg/km² off Visakhapatnam. When the fishing grounds along the west coast showed steady increase in the mean weight of NBMD