

Effect of bait type on catch efficiency in the Sri Lankan longline fishery operated targeting yellowfin tuna (*Thunnus albacares*)

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Yellowfin tuna (*Thunnus albacares*), one of the key species in the tuna fishery of Sri Lanka is an important food fish due to its high economic value and extensive international trade. The longline is one of the main fishing gears used in the Sri Lankan tuna fishery which targets yellowfin tuna as the main species. Four years (2016-2019) logbook records of the Sri Lankan longline fishery were used to assess the catch efficiency of the longline gear with respect to the bait type used in the fishery. The popular baits used in the longline fishery are squids (*Loligo divaucei*), bigeye scad (*Selar crumenophthalmus*), flying fish (*Cheilopogon* spp.), milkfish (*Chanos chanos*), scads (*Decapterus* spp.) and artificial baits. Use of artificial baits in the fishery has been abandoned since 2018, and low-cost milkfish bait production has been started locally. Squids were the prominent bait used but its share has reduced (48% in 2017; 35% in 2019) at present due to the increased use of milkfish (2% in 2017; 19% in 2019). Statistical analysis was carried out using one-way ANOVA to find out whether there was any significant difference in the catch rates of the longline fishery for different bait types. Tukey's post-hoc test was used to determine the difference in the effectiveness of each bait type. The study revealed that there was a significant difference in the catch rates among different bait types ($F_{(5, 98689)} = 109.47$, $p < 0.001$) but, according to Tukey's post-hoc test, there were no significant differences in the catch rates ($p > 0.05$) between flying fish, squids and artificial baits. The longlines having *Decapterus* spp. as a bait reported the highest average catch rate in terms of the number of fish per 100 hooks: (1.24 ± 1.47) followed by bigeye scad (0.99 ± 1.23), squid (0.90 ± 1.12), flying fish (0.87 ± 1.00), artificial bait (0.80 ± 0.89) and milkfish (0.70 ± 0.93). The present study further confirmed that locally available baitfish is better than imported squid for catching yellowfin tuna.

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