

Shelter colour preference in the purple mud crab *Scylla tranquebarica* (Fabricius)

ABSTRACT

Cannibalism a serious problem in the grow-out of mud crabs in ponds. Studies have proven that presence of shelters decreases aggressive behaviour of *Scylla* spp. in ponds and tanks. In this study, the shelter colour preference was determined in the wild captured purple mud crab *Scylla tranquebarica* (Fabricius) in an outdoor round black tank. Eight out of 48 PVC pipes were painted either blue, green, red, black or white. Other eight were not painted and were provided as grey shelters. The shelters were presented in different two-colour pairs to a group of 35 crabs; eight shelters of one colour and eight of other colour were arranged alternately on the tank bottom, and the number of occupants was recorded. After emptying the shelters, the shelters rearranged for the next observation. Each colour combination was repeated five times, and total of 15 combinations were tested. The number of occupants against each colour of the different pairs were analyzed by the χ^2 -test and Thurstone's law of comparative judgment. The data were converted into mean z-scores and significant biases from zero were noted. Underwater visibility of each colour shelter was visually measured through a waterproof digital CCD camera. The crabs showed a strong bias for blue shelter and white shelter chosen the least under the holding condition. The underwater visibility was highest in blue and white colour shelters among the six colour shelters. The observed colour preference was probably due to colour per se and may be an innate ability, rather than due to relative underwater visibility. During the observations, the shelter occupants were tolerant of intruders; there was no aggressive competition for shelter and two to four crabs shared one shelter. It was hypothesized that the touch stimulus of shelter suppresses the aggressiveness and results in low cannibalism of *S. tranquebarica*.