

Responses of purple mud crab (*Scylla tranquebarica*) to various saccharide solutions and the saccharide-coated pelleted feeds

ABSTRACT

Mud crabs (*Scylla* spp.) are economically important portunid species for aquaculture in many countries across the Indo-Pacific region. However, there is still no commercial species-specific formulated feed available for mud crabs, and mud crabs generally reject pelleted feed and the commercial formulated feeds available for other farmed aquatic species. Therefore, diets attractability and palatability are important criteria to develop formulated feed for mud crabs. To identify the suitable chemoattractant for attracting mud crabs to the feed, and also feeding stimulant to promote feed ingestion in mud crabs, the present study examined the *S. tranquebarica* appetitive response towards the solutions of various saccharides (galactose, glucose, sucrose, maltose, fructose, mannose) at 1.0 M, 0.1 M, and 0.01 M in Experiment I, and also its feeding response towards the pelleted feeds, coated with the selected highly stimulative saccharides (galactose, glucose, sucrose or fructose) in Experiment II. In Experiment I, all saccharides tested were stimulative to the *S. tranquebarica*. At 1.0 M, galactose, glucose, and sucrose were the most stimulative saccharides, although they were not as stimulative as the marsh clam extract (positive control). The stimulative effects of galactose and glucose were not significantly reduced when they were tested at 0.1 M. In Experiment II, the pelleted feeds coated with the selected saccharides at 0.1 M were more attractive (higher mean score) to the *S. tranquebarica* than the control feed (without saccharide coating), but only the mean scores of galactose and sucrose were significantly higher than that of the control feed. Nevertheless, no true ingestion on any of the pelleted feeds was observed, presumably due to the non-ideal dietary inclusion method used. Based on these results, it was concluded that all the saccharides tested were potent chemoattractants to the *S. tranquebarica*. However, additional study is needed to further confirm that these saccharides are also feeding stimulants to the mud crab. Additional research is also required to refine the formulation and application method of these saccharides as a practical chemoattractant or feeding stimulant in the farming of *Scylla* mud crabs.