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PE-14 External factors determining the breeding season of the mangrove crab (*Perisesarma bidens*), in the Manko mangrove estuaries, Okinawa, Japan

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Perisesarma bidens (De Haan), is the most dominant mangrove crab inhabiting in Manko Wetland, which is located at latitude 26^o11' N and longitude 127^o40' E along the Kokuba and Nuha rivers beside Tomigusuku city, Okinawa Island, Japan. However several environmental aspects concerning its reproductive ecology are poorly known. Such information is necessary for better understanding of several biological and ecological aspects of this species. The aim of the present study was to assess the reproductive ecology of *P. bidens* as well as some factors determining its breeding season. The influences of temperature, photoperiod, rainfall, and litterfall on the reproductive activity of this crab were investigated. Monthly collections of *P. bidens* were conducted out from January to December 2006. Crabs were randomly sampled, measured for carapace width (CW) and checked for the presence of eggs on female pleopods. Reproductive seasons of *P. bidens* started from early May to late November and peak of spawning was during month of July, August and September. Completely absent of breeding was observed during the months of January to April and December. We also checked the status of oocyte during non-breeding seasons. Pearson correlations revealed that temperature, photoperiod and litter fall were positively associated with the relative frequency of ovigerous female. Fatty acid biomarkers were used to examine the diet of this mangal crab. Polyunsaturated fatty acids (PUFAs) are important for reproduction of marine invertebrates. Significant variations in fatty acids composition were observed between breeding and non-breeding seasons. Polyunsaturated fatty acids (PUFAs) were dominant during breeding seasons, in particular 18:2 ω 6 and 18:3 ω 3. During Non-breeding seasons, prior to winter, and low rate of litterfall and temperature, there were substantially lower proportion of PUFAs and increased mono-unsaturated fatty acids. The implication of changes in fatty acids for reproductive process, and how these could be factors determining allocation of lipid resources in gonads, is discussed.