

ABSTRACT

The supply crisis of highly nutritious fish and economic pressures on the global fisheries sector have been exacerbated by the COVID-19 pandemic and the Ukraine-Russia conflict, exacerbated by the challenges of extreme climate change that have resulted in declining fish production and global food security. This study aims to explore the potential of the cakul wader fish (*Puntius binotatus*) as an alternative solution to the food crisis, given its high adaptability to fluctuating climate conditions. In addition, the cakul wader fish also has good nutritional value including 0.5-2.27 grams of omega 3 fatty acids and 14.88-20 grams of protein. This study used an experimental method with a Completely Randomized Design (CRD) which tested the effect of variations in the type of natural feed on the development of the cakul wader fish gonads. The results showed that feed variations had a significant effect on the growth rate of the cakul wader fish, with the provision of silk worms (*Tubifex* sp.) showing the most optimal results. Gonad Maturity Index (GMI) of female cakul wader fish increased from 3.4% on day 0 to 4.1% to 9.2% on day 28. The highest increase in GMI was observed in the group fed with silk worms. The provision of silk worms has been proven effective in stimulating egg maturation, which is indicated by a decrease in the percentage of primary oocytes from 40.53% on day 14 to 10.77% on day 28, or a decrease of 29.76%. Thus, silk worms have the potential to be an effective feed in the cultivation of cakul wader fish, while also opening up opportunities for more sustainable and adaptive aquaculture practices to climate change.

Keywords: Wader Cakul Fish, Gonads, Natural Food