

# クロマグロの完全養殖

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## Abstract

Tuna aquaculture is currently dependent on the wild capture of juveniles for production. The development of hatchery technology for the Pacific bluefin and other tunas would be a major step forward in improving sustainability of their aquaculture. The present study overviews the technology in the life cycle completion of the Pacific bluefin tuna (PBT) *Thunnus orientalis* (Temminck et Schlegel) under aquaculture conditions in Kinki University, and the problems to be solved for the establishment of tuna hatchery technology. PBT juveniles were wild-caught in 1987 when they were several months old, and reared to maturity. Fertilized eggs were obtained from these fish in 1995 and 1996, and were used for a mass rearing experiment. Resulting juveniles (the artificially hatched first generation) were reared to maturity and spontaneously spawned on 23 June 2002. Over the summer of 2002, 1.63 million eggs from these fish were used for a mass rearing experiment, and 17,307 juveniles were produced and transferred to an open sea net cage. Of these artificially hatched second generation PBT, 1,000 grew to approximately 105 cm TL and 18 kg BW in 24 months. This procedure means the completion of PBT life cycle under aquaculture conditions which firstly attained among large tuna species. The problems awaiting solution in PBT hatchery production are their unpredictable spawning in captivity, to improve survival during the first 10 days posthatch, to reduce cannibalism in larval and juvenile stages, and to solve collision problem causing high mortality during juvenile stage.