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Growth, survival, and pigmentation in reciprocal crosses of wild and farmed olive flounder, *Paralichthys olivaceus*

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The aim was to examine a population of purebred wild and farmed olive flounder (*Paralichthys olivaceus*) and their reciprocal hybrids for performance (growth, survival, and pigmentation) differences between wild and farmed fish. Olive flounder from two sources were used as parental stock fish from a natural population and fish from three commercial flounder farms. Wild and farmed purebred offsprings and their reciprocal hybrids were produced two times through natural spawning in the spring of 2004, and their performance traits were measured from the day of hatching to 215 days of age. A higher final body weight was seen in the farmed purebreds compared with the wild purebreds ($P<0.05$), and the reciprocal hybrid values were generally close to the mid-parent values (mean of purebred wild and farmed flounder) in growth performance. It is concluded that the observed differences in growth performance between the purebred wild and farmed flounder are genetic, and probably reflect the fact that the farmed flounder have been selected for rapid growth for several generations. No differences in survival, pigment abnormality in the blind side and sex ratio were seen among the four crosses, whereas an increased incidence of fish with albinism in the ocular side was observed in a hybrid cross type from wild dams and farmed sires. In conclusion, we speculate that the expectation of improved performance associated with the introduction of novel (wild) genetic material into the farmed population may be realized in a breeding program based on their genetic variation.

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