

Genetic selection of Pompano brood fish based on the offspring growth trait

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Florida pompano (*Trachinotus carolinus*) is a high-value marine fish species, which is an excellent candidate for commercial aquaculture in the USA. In this study, candidate broodstock of Florida pompano were genotyped using the selected microsatellite markers, and then only the unrelated adults were chosen for the further spawn. After the mass spawning event, the offspring from 20 breeders were grown into 45 days post-hatch. Subsequently, subsets of fast (515 individuals) and slow (485 individuals) growing progeny were also genotyped. A molecular based parentage assessment was undertaken, and individual parental contributions to larval production were detected and quantified. As a result, six females and five males were contributing to the spawning, respectively. Among the six female contributors, two breeders have the higher fast-growing offspring contribution over 50%. While only one male breeder has the higher fast-growing offspring contribution over 50%. Furthermore, the two couples composed of the above-mentioned two females and one male also turn out to be the best couples in this study.