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Induction of All-triploid Japanese Flounder (*Paralichthys olivaceus*) by Cold Shock

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Abstract

Cold shock is a useful method of inducing triploidy in some fish species. In this paper, triploidy in Japanese flounder (*Paralichthys olivaceus*) was induced by applying cold shocks of 3°C, three or four minutes after fertilization, for 15, 25, 35, 45, 55, or 65 min. Ploidy of fry was analyzed using a ploidy analyzer. Survival was lower in treatments shocked at four minutes than in treatments shocked at three minutes after fertilization, and decreased as the duration of the cold shock increased. The abnormality rate increased with the shock duration. The best results were achieved in the treatment shocked three minutes after fertilization for 25 min, resulting in 100% triploidy with the highest survival rate (93.27%) and one of the lowest abnormality rates (15.87%). This study shows that cold shock is a highly effective method for inducing triploidy in the Japanese flounder.

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