PRODUCTION OF MITOTIC GYNOGENESIS OF MASU SALMON IN JAPAN USING PRESSURE SHOCK

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ABSTRACT

Chromosome manipulation techniques have been adopted in aquaculture to improve breeding selection and performance. One of the approaches in chromosome manipulation is gynogenesis. This study aims to identify the time duration of pressure shock applied to the eggs after fertilisation. UV irradiated sperm was used to fertilised eggs of masu salmon (*Oncorhynchus masou*). Pressure shock of 650 kg/cm^2 for 6 minutes 30 seconds was given on 56, 58, 60, 62 and 64 minutes after fertilisation (AF). Intact Control (IC) and Gynogenetic Control (GC) were produced by fertilising eggs with fertile sperm and inducing retention of second polar body (haploid) respectively. Ploidy level was verified using microsatellite markers while the percentage of hatching rate, swim-up rate and normal fries were analysed using One Way ANOVA. Results showed 100% success in producing diploid mitotic gynogen for all different time duration. Yet, hatching rate, swim-up rate and the normal rate of all treatment significantly low in comparison to normal control (IC). This study suggests the effectiveness of pressure shock in producing diploid mitotic gynogen and its verification using microsatellite markers. However, further study is needed to improve the success rate.

Keywords: Aquaculture; Mitotic ; Gynogenesis ; Microsatellite Markers; Masu Salmon

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