LACK OF EFFECT OF SALINE FERTILIZATION SOLUTIONS ON LANDLOCKED FALL CHINOOK SALMON EGG SURVIVAL

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ABSTRACT

Landlocked fall Chinook salmon (Oncorhynchus tshawytscha) eggs spawned from Lake Oahe, South Dakota, typically exhibit very poor survival rates when incubated at McNenny State Fish Hatchery in Spearfish, South Dakota. This study explored the impact on egg survival of using saline solutions during fertilization, a technique sometimes used at other hatcheries. Four different fertilization solutions were prepared: hatchery water, hatchery water with 0.75% NaCl, distilled water, and distilled water with 0.75% NaCl. Eggs were spawned from 12 females. The eggs from each female were separated into the four fertilization solutions and then mixed with the same pooled milt from multiple males. There was no significant difference in egg survival to the eyed stage among fertilization solutions, with mean survival for all females ranging from 12.3% to 16.0%. These results indicate that saline solution use during fertilization does not appear to improve egg survival in Lake Oahe Chinook salmon, although it likely does no harm to the eggs. Therefore, the additional step of using saline solutions need not be included as part of routine Lake Oahe Chinook salmon spawning procedures.