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Research Paper

DEVELOPMENT OF PRESERVATION TECHNIQUES FOR ERI SILKWORM EGGS (*SAMIA RICINI* DONOVAN: LEPIDOPTERA – SATURNIIDAE)

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ABSTRACT

Of late, eri sericulture has been steadily picking up in India. For the sustenance and full exploitation of the industry under Indian conditions, appropriate egg handling techniques need to be formed. This ensures improvement in the quality of both cocoons and egg production as well. All these years, the eri scenario lacked a suitable egg preservation technology for its adoption in the field. Under this backdrop, series of studies have been conducted at Silkworm Seed Technology Laboratory (SSTL), Bengaluru on the embryonic development, identification of suitable embryonic stages for eri egg preservation and exploitation of different levels of temperature and their combinations with single step and double step refrigeration techniques to develop ideal preservation schedules. Three embryonic stages of 48, 55 and 60 h were identified, that can withstand short-term cold storage. The eggs of these 3 stages were preserved under single step at 5, 10, 15 and 20 °C for different durations of 5, 10, 15 and 20 days. Eggs which were not subjected to preservation served as control. Egg preservation at 5 and 10°C for 10 to 15 days had detrimental effect on hatching in all the 3 age groups , while at 20 °C, hatching was better (>60 %). The poor hatching of eggs under single step prompted to employ double step preservation technique. Preservation of eggs under double step for 11 or 12 days with the different temperature combinations resulted in significant increase in hatching with temperature combinations of "15+20+2.5°C" and "15+20+10°C for 5+1 or 2+5 days. To verify the validity of hatching, bioassay was conducted for the promising treatments. The rearing performance did not show significant difference in any of the rearing parameters between that of control and experimental batches indicating that eri eggs can safely be preserved for 11 to 12 days under double step refrigeration technique.

Key words: Double step preservation, embryonic stage, eri egg preservation, hatching.