



## **DEVELOPMENT OF MUGA SILKWORM, *ANTHRAEA ASSAMENSIS* (HELPER) EGG PRESERVATION SCHEDULE BASED ON EMBRYONIC GROWTH STUDIES**

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### **ABSTRACT**

In muga culture, during summer (June – July), Aherua pre-seed crop and early Bhodia seed crop (August) are adversely affected with high temperature and humidity and as a result, late Bhodia seed crop (September) and commercial crop of Kotia (October-November) are negatively impacted with inadequate quantity of superior quality eggs for muga silk production. With this backdrop, an experiment was designed to formulate a viable seed preservation schedule to tide over the adverse seasons. In the present investigation, distinct morphological features of the embryo were used as growth markers to identify specific embryonic stages. Muga silkworm eggs of 24, 36, 48, 60, 72 and 84 h age were subjected to single step refrigeration method (SSRM) and distinguished the cold tolerant embryonic stages as of 36 and 72 h. SSRM results indicated that 24 and 36 h age eggs preserved at 10 °C for 10 days required 5/6 days to complete incubation ( $10 + 5/6 = 15/16$  days) resulting in above 75 % hatching. Sixty, 72 and 84 h age eggs preserved at 10°C for 10 days displayed 2-3 days of incubation ( $10 + 2/3 = 12/13$  days) with more than 80 % hatching. SSRM studies unraveled the mystery of developmental response under preservation and provides scope for developing new preservation schedules by ascertaining cold tolerance limits of 24, 36, 48, 60, 72 and 84 h age eggs at 2.5, 5, 10, 15 and 20 °C temperature regimes.

**Key words:** *Antheraea assamensis* (Helper), hatching %, muga embryonic age, preservation, single step refrigeration method (SSRM).