A3

Long-Term Refrigerative Conservation Test of About Three Hundred Races of Silkworm Gene Resources

Bong-Hee Sohn, Yong-Soon Kim, Pil-Don Kang, and Sang-Uk Lee
Department of Sericulture and Entomology, NIAST, RDA, Suwon 441-100, Korea

Long term refrigeration conservation experiment was performed for 2 years on approximately three hundreds of silkworm races which is being conserved, as one of long term safe conservation technology development. Six treatments were conducted for 680days from July 1st 2000 to May 1st 2002. The results are as follows:

1. Embryo test was conducted to each treatment. There are no differences among treatments and origins in 400 day conservation experiment, the level of whole embryo growth was Eul B and condition of eggs was good. In 650 day conservation experiment, differences were reveled among origin and treatment, the level of whole embryo growth was Byeong A and condition of eggs was good. The order of growth stage is European races > Tropical, Korean races > Japanese, Chinese races, thus European races showed fast embryo growth. Control(treatment A) and treatment C showed faster growth than other treatments. And treatment D and F showed stable individual growth among all treatments. 2. The examination with naked eye and embryo conducted in hatching period showed 61% of high average line succession possibility among all 6 treatments. But treatment A and B showed no hatching, and 3 lines of treatment C, 48 lines of treatment D, 1 line of treatment E, and 29 lines of treatment F hatched. Thus treatments D and F which showed stable embryo were expected high hatching possibility. 3. The two treatments D and F showed better results than other treatments. Conservation periods exposed in -2.5℃ temperature of treatment D and F are 235 days and 310 days, respectively. And the exposure periods of two treatments were longer than other treatments. 4. Numbers of hatched races of treatment D and F are 48 and 29, and occupied 15.6% and 9.4% of all tested races, respectively. 5. Average hatching ratio of treatment D and F were 54.5% and 71.6%, and average dead egg ratio were 33.0% and 25.0%, respectively. These results show that average ratio of hatching dead eggs in treatment D and F are higher than general race. Thus reconsideration of hatching condition on treatment D and F is needed.