



USE OF CHEMICALS DURING COCOON COOKING FOR BETTER REELING PERFORMANCE AND SUPERIOR QUALITY SILK

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ABSTRACT

For a given sample of cocoons, the ease of unwinding of the filaments during reeling process depends upon the quality of cocoon as well as processing techniques. The studies conducted at Central Silk Technological Research Institute (CSTRI), Bengaluru, have proven that the cocoons produced under unfavorable climatic conditions (particularly monsoon season) have lower reelability and are characterized with an average of 0.5~1.0 unit more renditta than the cocoons produced during favourable climatic conditions. Series of studies conducted on this issue attribute it to the high crystalline nature of sericin due to more gelatinisation caused while spinning by silkworms under high humid conditions. Therefore, it is not possible to achieve desired results from these cocoons if we adopt the same reeling technology as set for good quality cocoons. It is well known that sericin is highly sensitive to alkaline media and many efforts have also been made by the researchers to cook the cocoons using chemicals so that softening and swelling of sericin is achieved during cocoon cooking to result in better reelability of the cocoons. There is a lot of scope to continue the work in this area as a desired chemical recipe is not yet attained, and controlling the waste generation being another challenge associated with this procedure. In this line, Silk plus, a formulation of Na_2CO_3 and NaHCO_3 , developed at Central Muga Eri Research and Training Institute, Central Silk Board, Lahdoigarh, Assam, India has been successful in achieving higher reelability and lower renditta from muga cocoons. The present study aimed to ascertain the efficacy of the use of chemicals while cooking the mulberry cocoons particularly those produced under unfavourable conditions, to improve the reelebility and quality of raw silk. Based on the findings, Silk plus and the wetting agent, Ethylene oxide condensate based surfactant are recommended for enhancing the reeling performance.

Key words: Alkaline, reelability, sericin, Silk plus, unfavorable climatic conditions.