

**Development of Nistari line for longer larval duration using molecular markers for increased silk content.**

The *Bombyx mori* strain, *Nistari* a native multivoltine strain is preferred by sericulturists of the plains in West Bengal as it can withstand any adverse climatic condition. However, generally they are characterized by shorter larval duration which causes less accumulation of stored nutrients leading to low fecundity and low silk content. In order to overcome these shortcomings this laboratory successfully carried out artificial selection of long larval duration (LLD) and short larval duration (SLD) lines based on ISSR and SSR primer analysis from a base population of *Nistari*. The selection resulted in the identification of one ISSR and one SSR marker specific to long duration lines. Both the DNA markers segregated in the F2 generation (LLD female x SLD male) and showed significant association with long larval duration. During extended larval duration, larvae accumulate more nutrients that lead to more efficient energy allocation increasing fecundity and silk production (20% increased silk content). This long duration *Nistari* line with increased silk content will be a boon for the West Bengal sericulturists is being evaluated under multilocational locational performance trials.



**Inheritance pattern of the ISSR locus UBC873<sub>1074bp</sub> and SSR locus BmSat 106 (size: 106 bp) in the F2 generation developed from LLD female x SLD male parent. Arrow shows segregating loci in LLD parent and F2 individuals**

