

With the goal of developing robust breeds which can be reared throughout the year and under the prevalent sub-optimal conditions the new strategy of molecular marker assisted selection was designed employing digestive amylase enzyme during the breeding process.

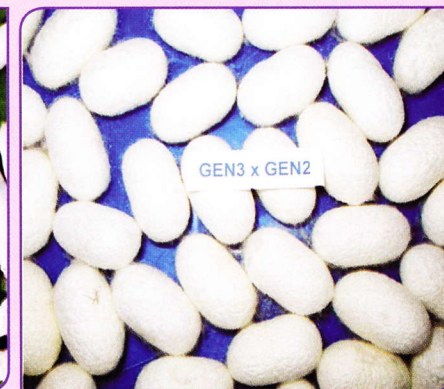
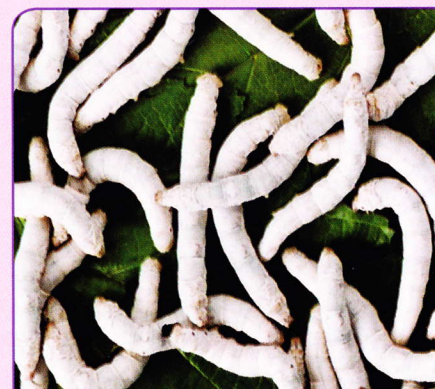
Previous studies have clearly shown the prospects of using amylase as a marker in breeding due to its role in better digestibility and higher survival. The indigenous polyvoltines like Pure Mysore and Nistari with '4 band' and '5 band' pattern of digestive amylase with high activity were used as Donor Parents (DPs) and while the productive bivoltines, CSR2 and CSR5 with null type and very low activity were selected as recurrent parents (RPs).

F1s were raised between the DPs and RPs and the F1 progeny were backcrossed to their respective RPs. In each generation, the BC progeny were screened by amylase assay and those with DP type of amylase were only selected and the progeny with "null" type were rejected. This breeding scheme has resulted in the evolution of two Near Isogenic Lines (NILs), namely GEN3 and GEN2, which have been introgressed with high activity amylase genes, simultaneously retaining the productivity traits on par with those of their respective RPs.

Laboratory evaluation and on-farm trials at regional research stations viz., Kodathi, Salem, Ananthapur and Coonoor indicated the superiority of the hybrid.

The pre-authorization trials of 71000 dfls in different agroclimatic conditions of Karnataka, Andhra Pradesh and Tamil Nadu recorded 62kg/100dfls. The hybrid has been authorized during 2010. The post authorization trials of 134000 from 2010-2013 in southern states throughout the year has recorded an average yield of 63 kg/100dfls and indicated the suitability of the hybrid for rearing in all the seasons under sub optimal conditions of leaf quality.

NEW BIVOLTINE HYBRID GEN3 x GEN2 AUTHORISED IN 2010



Salient features of GEN3 x GEN2

- ☛ Developed by introgressing amylase genes from multivoltine races-Pure Mysore and Nistari in to CSR2 and CSR5
- ☛ Plain larvae with creamish white cocoon
- ☛ Hybrid with high cocoon shell percentage (22-24%)
- ☛ Cocoon yield 60-65kg/100dfls
- ☛ Cocoons are creamish white with intermediate shape and medium grains
- ☛ Better fibre quality (2A-3A)
- ☛ Renditta: 5-6
- ☛ Better digestibility and higher survival under sub optimal conditions of leaf quality
- ☛ Suitable for rearing throughout the year by small and marginal farmers

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GEN3 x GEN2

NEW BIVOLTINE HYBRID FOR SUB-OPTIMAL CONDITIONS



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