

# Mysuru institute tests GM, disease-resistant silkworms

TNN | May 15, 2016, 02.54 AM IST



**B**ENGALURU: A quiet movement from traditionally known ways of raising silkworms to inserting new genes to strengthen them against Grasserie disease, which causes a loss of 20% annually, is under way at the Central Sericulture Research and Training Institute (CSRTI) in Mysuru's Srirampura.

The institute is testing a transgenic, the first-of-its kind in India, which will eventually help fight off BmNPV (Bombyx mori nucleopolyhedrovirus), which causes Grasserie disease.

According to a textile ministry document, the genetically modified worms "can prevent the losses caused by the Grasserie disease, which is

responsible for up to 20% crop loss in silkworm".

Scientists are also confident that the transgenic silkworms can prevent this loss as they develop resistance to the virus causing the disease. Grasserie disease, generally caused in the summers, affects the cocoon production considerably.

According to a research paper from the Indian Institute of Science (IISc), "since there are no specific preventive measures for the occurrence and spread of BmNPV infection other than sanitised breeding and rearing methods, the only commercial practice today is to discard large stocks of worms in case of infection."

Silk farmers in Karnataka's Silk City Ramanagaram, about 50km southwest of Bengaluru, say this year has been worse due to

the Grasserie.

"Unlike a few other diseases wherein there are indications when the worm is really young, Grasserie gives us no clue until the very end. You suddenly see deaths occurring," Goutham Gowda, district president, Ramanagaram Silk Farmers' Association, said. "With no rain this season, I have personally lost nearly 100kg in just one crop due to the disease. I was anticipating a yield of 200kg to 220kg but due to the disease, I got only 100 kg," Goutham said, adding that tens of other farmers have been affected too.

CSRTI director Dr Vankadara Sivaprasad told STOI: "We've tried it on one crop. 100 eggs of the modified hybrid variety have been tested." The institute is looking at testing 10 crops amounting to 2,500 eggs by the end of the year, he said.

Sivaprasad, who was also part of the team that developed the genetically-modified worm when he was at the Andhra Pradesh State Sericulture Research and Development Institute (APSSRDI), said: "We've developed four new hybrid transgenic silkworm varieties that are resistant to BmNPV and one of them is being tested in Mysuru." The three others are being tested on other campuses.

Besides Mysuru, two other CSRTI campuses - Pampore in Jammu and Kashmir and Berhampore in West Bengal - and APSSRDI are also doing such tests. There have been global efforts in developing transgenic worms across the world, including in China.

Following the successful trials on the four campuses, Sivaprasad said: "The new variety will be placed before a committee on genetically modified organisms for its approval for trials with farmers."