Revival of coconut black headed caterpillar (*Opisina arenosella)* by larval parasitoid *Goniozus nephantidis*

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Coconut is one of the important plantation crops of the district next to areca nut. The district has 12949.8 ha of coconut with production of 883.71 lakh nuts. The average productivity of 120 nuts / palm. Because of heavy in incidence of coconut black headed caterpillar (CBHC) and mites nuts productivity has reduced drastically.

Coconut black headed caterpillar (BTC) *opisina arenosella* is one of the major pests of coconut palms causing considerable damage to coconut industry and according to a recent survey, about 1.6 million palms are affected in Karnataka alone. Available control measures include mechanical, chemical and biological to control it. The chemical method has been shown to leave persistent Residues. Consumption of tender coconuts from trees applied with synthetic pesticides may pose health hazards Insecticide of several concerted efforts made for the past two decades to control the pest by synthetic application, the anticipated results have never been achieved in this communication, we report the effectiveness and superiority of biological control over other methods for management of this notorious pest by parasites.

KV K Intervention

Mr. Prakash.M S/o G.Mallappa, Kotehal village of channagiri Taluk, Davanagere district cultivaters 8 acres of coconut from past two decades around 600 plants are accommodated in the 8 acres of area. The productivity of the palms was 40. He has taken all the measures like mechanical (cutting and burning of affected palms) and chemical (Roof feeding of monocrotophas 10 ml /palm) methods. By during all these efforts he is unable to control the pest and decided to uproot the palms as they have less productive.

They expressed the problem with officials of Taralabalu Krishi Vigyan Kendra. Scientists from KVK initially surveyed the plot for the occurrences of pest incidence. It was noticed that 65-70% of the palms were affected with this. Scientists contacted the Tamilnadu Agriculture University scientists for obtaining larval parasite *Goniozus nephantidis* . Initial arrangement was made by KVK to procure the parasites. A method demonstration was also did on release of parasites to the palm. Later on the farmer released the parasites 4 times by himself. Slowly the incidence was

reduced months after month. Again in the next year they have practiced the same technology in consulting with KVK scientists.

Particulars'	**Before**	**After**
Incidence of CBHG in plot	65-70 %	5-10%
Number of nuts / palms	40	140-150
District average	120	
Gross Income (600 Palms)	72000/-	252000/-

Suitability in the existing farming / cropping system

As the incidence of CBHC is prevailing in the other coconut gardens of the region. So this technology suits to whole area of affected palms.

Acceptance of the technology by the farmer

Farmers accepted and convinced about the technology as it drastically reduced the pest incidence. It also acts as best alternative to other methods of control.

Horizontal spread

More than 50 farmers are advised in this technology by the KVK. We are diverting the farmers to department of Horticulture for obtaining the *Goniozus nephantidis*.

Linkage with developmental organizations

In collaboration with department of horticulture, Davanagere we have conducted several training programmes on production technology of coconut under coconut development board scheme. Farmers who adviced about the technology are diverted to department for getting the *Goniozus nephantidis* parasities in the early years Tamilnadu Agriculture University has supplied the culture.

CD Developed / Media

A story on management of CBHC in coconut by our SMS (Horticulture) Mr.Basavanagowda.M.G was telecasted on Anna data programmed of E-TV Kannada.

Places and Address of the Farmer who could be contacted

Mr.Prakash.G S/o Mallappa.G
Kotehal, Marabanahalli (at post)
Channagiri Taluk
Davanagere district-577551, Phone No: 09448628010

Publications Printed

1) The study was presented as poster presentation on "Integrated Management of black headed caterpillar in coconut by Mr.Basavanagowda.M.G SMS (Horticulture), Prasannakumara.N SMS (Plant Protection), Dr.Devaraja.T.N (Program me Coordinator) at international conference on a coconut Biodiversity for prosperity at Central Plantation Crops Research Institute, Kasargod (Enclosure-1).

2) Folder on management of CBHC in coconut was brought out by Taralabalu KVK (Exclosure-2)

It was clear that, a coconut garden which is going to uproot by the farmer is saved by the KVK effort. *Goniozus nephantidis* is the most effective larval parasitoid in controlling the CBHC. The parasitoid should be released @3000/ha under the coconut trees when the pest is in the 2^{nd} &3^{rd} instars larval stage. The optimum level of release is 1:8 of parasitoid ratio. Parasitoid should not be released in the crown region since they will be killed by predators like spiders bugs.

This technology helped to reduce the incidence level from 65-70 percent to 5-10 percent. This inturn helps to increase the productivity of the palms contributing to the higher gross income.

Evidence

The success of the technology was measured by post assessment of the farming situation. Initial survey was made on the percent existence of the pest later after the study post survey was made on the percent damage. Increase in number of nuts per palm itself indicates the success of technology in decreasing the incidence.