Bio control of coconut black headed caterpillar in Maharashtra

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Coconut black headed caterpillar or leaf eating caterpillar (*Opisina arenosella*) is a serious pest of coconut causing significant yield loss in all the coconut growing tracts of India.

It infests coconut of all age groups and is a prolific feeder of coconut leaves. On the adult palms, the infestation starts on the outer whorls of leaves and eat away the chlorophyll leaving only upper epidermis thereby, reducing photosynthetic efficiency. In extreme cases the caterpillar may feed on the surface of green nuts. In severe cases, whole plantation presents a burnt up appearance due to the drying of leaves. In case of severe outbreaks the attacked leaves droop, bunches buckle and the immature nuts shed heavily.

Biocontrol

Black headed caterpillar spread very fast and cause heavy damage to coconut gardens in a large area. Chemical management is not a feasible method for the control of this pest. The larval parasitoids of black headed caterpillar viz., Bracon hebetor and Goniozus nephantidis are found effective in managing the pest. Inundative release of these parasitoids help in containing the outbreak from spreading to neighboring coconut growing areas. Usually the parasitoids G. nephantidis are to be released at the rate of 10 parasitoids/palm and B. hebetor at the rate of 20 parasitoids/palm in at least ten per cent of the infested palms in each area at fortnightly intervals in case of low (few damaged leaflets here and there) to medium (2–3 damaged fronds with clear drying) intensity of damage. For high intensity damage, (all the lower whorls of leaves or entire crown damaged) more number of parasitoids should be released.

Damaged palm before release of parasitoids

Recovered palm after release of parasitoids

Biological control laboratory

The self-perpetuating parasitoids prevent the further spread of the pest and reduces the need for use of hazardous insecticides in the coconut ecosystem. A community based approach is needed for the effective management of the pest. The farmers should be sensitized on pest identification, nature of damage and management of black headed caterpillar through bio-control and parasitoid release via field visits, village meetings, group discussions and mass media coverage.

Success stories from Ratnagiri

Scientists from AICRP Centre, Bhatye, Ratnagiri have made a concerted effort in managing the pest menace in Palghar dist. of Maharashtra.

In Nareshwadi, Palghar (Dist.), around 500 coconut palms aged 5-30 year were severely affected by black headed caterpillar. The pest damage was to the tune of 90 per cent and it reduced the productivity of palms to 30-40 nuts/palm. The scientists working in ICAR- AICRP on Palms centre RCRS Bhatye visited the plantation and immediate interventions were taken up. They released around 1200 Bracon and 500 Goniozus parasitoids in the farmer's field and timely intervention and effective monitoring of the pest population resulted in reduction of the pest population within five months.

During 2017-18, black headed caterpillar outbreak was reported in 350 palms in an area of 2 hectare in Palghar Dist. The damage was recorded to the tune of 100 per cent and 10,000 parasitoids were released in the field by scientists from RCRS, Bhatye. The timely release of parasitoids helped in reducing further damage and the palms were recovered after the release of parasitoids.

Community based release of parasitoids is a very effective, feasible and eco-friendly method of black headed caterpillar management. The ICAR-AICRP centre RCRS Bhatye is successful in identification of the pest problem and distribution of larval parasitoids in large numbers to the affected areas to contain the spread of the pest. ■