



## Introduction of New Insect-Pests on Apricot and Its Preliminary Management Options in Cold Arid Region of Ladakh

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**Abstract:** Incidence of insect-pest and diseases of fruit trees is low in trans-Himalayan Ladakh. However, a case-study was carried out to understand the outbreak and monitor the defoliating caterpillar (*Euproctis* spp.) in seven villages and aphids (*Aphis* spp.) in seventeen villages of Leh district in apricot. A loss of approximately Rs. 539.2 lakhs in apricot has been realised. Simultaneously, this defoliating caterpillar moth has caused skin rashes on humans, which were severe and persistent on sensitive individuals. The outbreak of the pests has caused extensive economic loss and issue is required to be addressed on priority.

**Key Words:** Apricot, Aphid, Cold arid region, Defoliating caterpillar, Economics, Remedial measures

Invasive pests that gained entry into this cold arid region of India have caused catastrophic damage on commercial agriculture, horticulture crops and forest trees. Due to climate change in past few years, many invasive pests have been introduced in this cold arid region i.e., codling moth in apple and apricot (*Cydia pomonella*), aphids in fruits and vegetable crops (*Aphis* spp.), cutworm in vegetables (*Agrotis ipsilon*), maggots in onion (*Delia antiqua*), powdery mildew in grapes (*Uncinula necator*), weevil in walnut (*Alcidia sporetirostris*), loose smut in wheat and barley (*Ustilago tritici*), rust in wheat and barley (*Puccinia* spp.), fungal (*Fusarium* spp.) and bacterial wilt (*Ralstonia solanacearum*) in solanaceous vegetables and several invasive species of moths (Gupta *et al.*, 2015). Previously gypsy moth (*Lymantria* spp), willow scale (*Chionaspissalicycis* L.), tent caterpillar (*Malacosoma* spp), willow leaf beetle (*Altica* spp.), goat moth (*Cossus cossus* L.), ermine moth (*Yponomeuta rorellus* Hubner), poplar petiole gall insect (*Pemphigus* spp.), willow apple gall (*Pontania* spp.), etc. were major pest species found causing damage to poplar and willow (Gupta *et al.*, 2015). More than 60 per cent willow plantations were found to be infested with scale insect in Leh district, while willow apple gall inducer was found causing severe damage in Zanskar block of Kargil district and, Nubra and Khaltsi block of Leh district (Pandey *et al.*, 2007).

Apricot is the main fruit trees of Ladakh region and are widely grown in the warmer and lower belts of Ladakh like Sham, Nubra and Kargil. Traditionally the apricots are eaten fresh but traditionally sun-dried apricot is sold in the markets at the rate of Rs. 250-300 per kg. Apricot of trans-

himalayan Ladakh are best for its quality and unique characteristics. Number of genotypes have been explored by ICAR-Central Institute of Temperate Horticulture and Defence Institute of High Altitude Research (DIHAR), for its better development and livelihood in terms of biological and pomological traits and this region represents a great wealth of apricot germplasm diversity. Being a cold arid region in Trans-Himalaya, possible pest incidence is comparatively low because of lower humidity followed by extreme cold and harsh winter, low cropping intensity and diversified cropping systems. Codling moth (*Cydia pomonella*) is a serious pest of apricot in fruit growing areas of Ladakh (Gupta *et al.*, 2015). To avoid and restrain its spread to other parts of the country the Government has imposed restrictions under SRO 397 dated 8th September 1981 under the Jammu and Kashmir Plant and Disease Act 1973, on the movement of apple and apricot from Ladakh. However, in recent years, severe infestation of defoliating caterpillar (*Euproctis* spp.) was observed in Dah-Hanu belt and aphid in Sham and Turtuk-belt on apricot trees. Apricot orchards in Ladakh are attacked by various insect-pests especially defoliator and aphids. Defoliator is the only native to Europe. All other pests are accidental introductions. Fruit damage or infestation by any one of these insects may make a quality of fruit unacceptable for marketing. For these reasons, the economic thresholds of insects, which attack fruit in age-old apricot orchards are extremely low.

There is still muddle regarding the identification of the moth but the targeted insect has recently infiltrated in Ladakh region probably due to changes in climate parameters in past few years. This moth, a native of Europe,