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Short Note

Insect-pests associated with milkweed, *Asclepias curassavica* Linn. in Himachal Pradesh

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During ancient times people in India were entirely dependent on herbal medicines. Presently, about 80 per cent of world population is still dependent on medicinal plants for healthcare and 20 per cent drugs in pharmaceutical firms are of plant origin. Milkweed, *Asclepias curassavica* Linn. is a perennial herb introduced in India from West Indies, now occurring in South India and Bengal. The leaves, roots and flowers of the plants are used for their medicinal properties. Root of the plant is purgative, remedy for piles and is also used as an emetic and in the treatment of warts and cancerous growths. Juice of leaves of this plant is anthelminthic and used for healing hemorrhages (Purohit and Vyas, 2005).Medicinal plants offer viable alternative for diversification and remunerative returns to the farmers. As these plants are high value crops both in terms of returns as well as having good medicinal properties, so the farmers of the state are keen to adopt their cultivation. Information on the occurrence of insect-pests of milkweed, *A. curassavica* Linn. is not available from hilly areas particularly Himachal Pradesh, therefore studies were conducted to have first hand information about the insect pest associated with this important medicinal plant.

The studies were conducted at Herbal garden nursery, Department of Agroforestry and Environment, CSK, HPKV, Palampur, situated at 32.6^0 N latitude, 76.3^0 East longitude and at the elevation of 1290.8 meters above mean sea level. The seasonal incidences of insect-pests associated with these plants, were regularly monitored at weekly intervals at different growth stages of the milkweed. In case of monarch butterfly caterpillars, total numbers of larvae on ten randomly selected plants were counted at weekly interval. While in case of bug, adult and nymph count was made at weekly interval on ten randomly selected plants. The oleander aphid population count was made on leaf, inflorescence and stem of the plants at weekly interval.

The results presented in Table 1 revealed the association of three insect species with *A. curassavica.* Among these, oleander aphid, *Aphis nerii* Boyer de Fonscolombe was the predominant. The pest remained active from first week of August to last week of September with population ranging from 6.1-161.3 aphids/plant. No aphid population was recorded in October as the cutting of plants was done. However, the aphid activity was noticed again in November-December but with comparatively low population (5.01-112.6 aphids/plant). *A. nerii* is a common pest of several ornamental plants in the family Apocynaceae and Asclepiadaceae and is commonly found feeding on oleander, *Nerium oleander*, milkweeds, such as butterfly weed *A. tuberosa* and scarlet milkweed, *A. curassavica* Linn and wax plant, *Hoya carnosa*(Mc Auslane,2005). *A. nerii* has also been reported as a pest of *A. curassavica* in Tanhite islands (Van-Harten *et al.*, 1977) and Brazil (Vaz *et al.*, 2004). Murugesan *et al.*, (1996) also reported high population of *A. nerii* on *Calotropis procera.*

Weekly observations on the incidence of Monarch butterfly, *Danaus chrysipus* Linn. on *A. currasavica* at Palampur revealed that the pest appeared on the crop during third week of April (0.53 larvae/plant). By this time the plants were bearing inflorescence. The larvae were observed feeding upon leaves started building up their population and there was gradual increase in the larval population.The maximum peak population of the monarch larvae (1.46 larvae/ plant) was observed in the last week of May and started declining during the month of June and disappeared completely by the last week of June. Then the pest again appeared in the first week of November (0.26 larvae/ plant) and continued up

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Table 1. Insect-pests of *Asclepias curassavica*

Common name	Scientific name	Population	Crop stage	Period of activity
Oleander aphid	*Aphis nerii* Boyer de Fonscolombe (Homoptera:Aphididae)	6.1-161.3 aphids/ plant (Aug.-Sept.) 5.01-112.6 aphids/ plant (Nov.-Dec.)	Active vegetative stage and flower formation	August- December
Monarch butterfly	*Danaus chrysipus* Linn. (Lepidoptera:Danaidae)	0.53-1.46 larvae/plant (April-June) 0.26-0.46 larvae/plant (Nov.-Dec.)	Active vegetative stage and flower formation	April-June and November - December
Milkweed Bug	*Lygaeus civilies* Wolff (Hemiptera:Lygaeidae)	1.20-1.80 bugs/plant	Active vegetative stage and flower formation	April-August

to the first week of December.The present results on the abundance of *D.chrysippus* larvae are in conformity with the earlier findings of Sharma (1998), who also found activity period of *D.chrysippus* on Milkweed during May, August and November-December at Solan (Himachal Pradesh). Verma *et al.* (1978) has reported *Danaus* spp.to be abundant from July-August on *C. procera*. While in Maharashtara the activity of *D.chrysippus* larvae has been observed from June-July on *Clalotopsis gigentica* (Wadnerkar *et al.*, 1979). Dhaliwal *et al.* (2006) also reported association of *D. chrysipus* as a pest of *A. currasavica*.

Milkweed bug, *Lygaeus civilies* Wolff was observed on the crop in active vegetative stage and continued its activity up to August, till the appearance of inflorescence on the plants. Observations recorded on the population build up of bug on milkweed are presented in Table 1. The pest appeared on the crop in the 3rd week of April (1.20 bugs/plant) and reached the peak (1.80 bugs/plant) in the first week of May. Thereafter the population of bug reflected a declining trend in June and July. The pest was not observed on the crop after second week of August. Dhaliwal *et al.* (2006) also reported the association of milkweed bug, *L.civilies* with *A. curassavica*. In Punjab also, *L.civilies* has been reported as a pest of large number of ornamental plants (Deol, 1974).

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