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SHORT COMMUNICATION

Insect pest management in *aonla* (*Emblica officinalis* Gaertn.) by farmers of Gujarat

V. Lenin*, and Sanjay Singh
Central Horticultural Experiment Station, (CIAH), Godhra-Vadodara Highwya
Vejalpur 389 340, Panchmahals District, Gujarat

Aonla (*Emblica officinalis* Gaertn.) also known as Indian gooseberry is a deciduous, hardy tree, native of India comes up well in salt affected soils and wastelands. Fruits are rich in vitamin-c of 600mg/100g of edible portion (Gopalan *et.al.*, 6). One hundred grams of edible portion of *aonla* contains 81.8g moisture, 0.5g protein, 0.1g fat, 0.5g minerals, 3.4g crude fibre, 13.7g carbohydrates, 58kcal energy, 50mg calcium, 20mg phosphorus, 1.2mg iron, 9µg carotene, 0.03mg thiamine, 0.01mg riboflavin, 0.2mg niacin, 256mg choline, 5mg sodium, 225mg potassium (Gopalan *et.al.*, 6). It has great medicinal value in treatment of dysentery, diarrhorea, haemorrhages, bilousness, digestive system disorders, jaundice, coughs, skin infections, cleaning wounds, snakebite, scorpion-stinging (Parmar and Kaushal, 8; Chadha, 3). Area, production and productivity of *aonla* in India are 49620ha, 150500t and 3.03t ha^{-1} (Dhandar and Saroj, 5). Emerging insect pests affect the productivity. Hence a study was conducted to assess the status of insect pest management by the *aonla* farmers of Gujarat.

A survey was carried out in the panchmahals and Vadodara districts of Gujarat. Sixty *aonla* growers were randomly selected and interviewed at their farms. The survey was done during June August, 2005. The data were collected in a structured interview schedule.

Majority of the *aonla* farmers (54%) reported the infestation of shoot-gall maker (Table 1). They cut and burnt the affected shoots. Moderate to high incidence of stem gall maker was observed in *aonla* orchards at Jobner, Rajasthan (AICRP on AZF,1). The caterpillar on hatching entered the shoots and fed within causing a gall on the tender shoots (Bagle,2). Carbaryl (0.1%) might be sprayed during August to kill the newly hatched larvae before they entered into shoots (Chadha,3).

Forty nine per cent *aonla* farmers reported the infestation of bark-eating caterpillar. Thirty per cent farmers adopted the practice of dipping monocrotophos in cotton and kept inside the hole and plugged the hole with cow dung. Even though monocrotophos was effective in controlling the pest, its usage had been banned in fruit crops. Nineteen per cent farmers did not take up any control measures. The larvae bore usually at the joints between twig and main stem and tunneled straight downward; presence of silken webs comprising of excreta of larvae indicated the damage (Bagle, 2). The silken galleries might be removed and chlorpyriphos (0.07%) or carbaryl (0.1%) might be sprayed on tree trunk. Dichlorvos (0.1%) might be injected into bored holes (Chadha, 3).

Nineteen per cent *aonla* farmers reported the incidence of aphid and they sprayed monocrotophos. Both nymphs and adults sucked the cell sap from tender shoots, leaves and devitalized the plants. They exuded honeydew on which sooty mould developed. (Bagle, 2). Dimethoate (0.03%) or phosalone (0.05%) might be spayed to manage the pest (Chadha, 3).

Fourteen per cent *aonla* farmers reported the incidence of mealy bug. Both nymphs and adults sucked the cell sap from tender shoots, leaves and devitalized the plants (Bagle, 2).

Few farmers (11%) reported the incidence of fruit borer in *aonla*. They sprayed dimethoate (0.2%) thrice at tri-weekly interval. *Aonla* cultivars NA-7, Krishna, Chakaiya, Banarasi, Kanchan, Francis, Anand-1 and Anand-2 were susceptible to borer (IIHR,7). Incidence was 30% in NA-7 (CIAH,4). The caterpillar bore into the fruits and fed within causing premature drop of fruits during monsoon season, maximum damage during July and August (Bagle, 2).

Nine per cent *aonla* farmers reported the incidence of hairy caterpillar. They sprayed dimethoate. The caterpillar on hatching fed voraciously and gregariously on tender leaves and defoliated the plants. The larvae later on migrated to entire plant and fed on leaves leading to defoliation (Bagle, 2).

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References

AICRP on AZF. 2002. Biennial Report 2000 & 2001 AICRP on Arid Zone Fruits.

Bagle,B.G. 2004. Integrated pest management in arid fruits. In: Advances in Arid Horticulture, Vol.I. P.L.Saroj, B.B.Vashistha and D.G.Dhandar (eds.). International Book Distributing Co., Lucknow,

*Corresponding author's e-mail : leninagex@yahoo.co.in

Table 1: Insect Pest Management in *aonla* by the Farmers of Gujarat.

Pest	Management				Farmers	
	Chemical	Quantity (ml or gms / litre of water)	Number of sprays	Days of interval	No	Per cent
Shoot-gall maker (*Betousa stylophora*)	Cut & burnt the affected shoots	--	--	--	38	54.29
Bark-eating caterpillar (*Inderbela terraonis* Moore)	Monocrotophos dipped in cotton kept inside hole & plugged with cow dung	2	1	--	21 (13)	30 (18.57)
Aphid (*Cerciaphis emblica*)	Monocrotophos	2	3	15	13	18.57
Mealy bug (*Nipaecoccus vastator*)	--	--	--	--	(10)	(14.29)
Fruit borer (*Virachola isocrates, Meridarchis scyrodes*)	Dimethoate	2	3	20-25	8	11.43
Hairy caterpillar (*Euproctis flava*)	Dimethoate	2	3	20-25	6	8.57

Figures in parenthesis indicate farmers who reported the pest but did not take up any control measure.

pp. 535-544.

Chadha, K. L. 2003. Handbook of Horticulture. Indian Council of Agricultural Research, New Delhi.

CIAH. 2003. Central Institute for Arid Horticulture, Annual Report for 2002-2003.

Dhandar,D.G. and Saroj,P.L. 2004. Changing scenario in arid horticulture. In: Advances in Arid Horticulture, Vol.I. P.L.Saroj, B.B.Vashistha and D.G.Dhandar (eds.). International Book Distributing Co., Lucknow, pp.1-27.

Gopalan, C., Sastri, B. V. R. And Balasubramanian, S. C. 2004. Nutritive Value of Indian Foods. National Institute of Nutrition, Hyderabad. pp.47-95.

IIHR. 2000. Indian Institute of Horticultural Research (ICAR) Annual Report, 1998-99.

Parmar, C. and Kaushal, M. K. 1982. Emblica officinalis. In: *Wild Fruits*. Kalyani Publishers, New Delhi, pp.26-30. Viewed 09 February 2006 <http//www.hort.purdue.edu/newcrop /parmar/07.html>