Important Insect Pests of Fruit Trees in the Punjab and their Control

by

Khan A. Rahman, B.Sc. (Edin.), Ph.D. (Cantab),
F.R.E.S., Entomologist,
Punjab Agricultural College, Lyallpur.

The Entomological Section, Lyallpur, has done a great deal of work on the important insect pests of fruit trees in the Punjab. Their life-histories have been worked out and measures to control them have been devised. Much of this information has been published in Departmental leaflets, Seasonal notes, etc. In this article it is proposed to present the information available on these pests in as brief a manner as possible. References to published records on them are given in the parenthesis.

A. Insects Damaging Citrus

1. Eating leaves.—(a) Young soft leaves being eaten from the edge right up to the mid rib. Caterpillar when young looks like bird droppings and is a curious blend of black and white but when older it becomes green with a number of brownish stripes on the side of its body. When disturbed, it throws out two light orange coloured horn-like processes from behind its head. When full grown it measures more than 2 inches in length.—Lemon Butterfly caterpillar (Papilio demoleus Linn.).

Control.—(1) Hand pick the caterpillars and drop them in kerosene water. (2) Dust plants with Sodium fluosilicate mixed in ashes or fine road dust (1:8). (3) Spray with Lead arsenate (3 chhataks) mixed with lime (6 chhataks) dissolved in water (4 gallons). (4) Catch butterflies in hand nets and kill them.


(2) Memoirs of the Department of Agriculture in India (Entomological Series) Vol. V, No. 1, page 33, 1914.]

(b) Feeding concealed in leaf tissues and making silver white zig-zag galleries on the leaf, moth very small and dirty white—Citrus leaf minor. (Phyllocnistis citrella Stbr.)

Control.—(1) Prune citrus plants in December and January and remove regularly the attacked leaves from young nursery plants and burn them. (2) Avoid citrus hedges round citrus plantations.

I. Sucking sap from leaves. — (a) Terminal tender branches and leaves with numerous orange coloured, small nympha, which are the young ones of citrus psylla, (Diaporhina citri Kuw). The attack by this insect is at its worst during March-April. The leaves of the attacked plants, because of the honey dew, present a shining appearance at first but later on, because of the growth of a black mould, they appear black.

(b) Lower leaves black. Under side of older leaves mottled with pale yellow ‘spots’, which are young ones of citrus white-fly (Dialeurodes Citri Ash.).

Control.—Spray under side of leaves with Rosin compound.

II. Sucking sap from tender branches of older trees. — Terminal portion of the tender branches covered with flat bodied wax covered females and ( nymphs) Mango mealy bug, (Monophlebus stebbingi Gr.).

Control.—(1) Destroy eggs between July and December by scraping soil up to a depth of 4–6 inches from under the infested trees. (2) Spray heavily infested parts of the plant with fish oil soap (12 chhatkai) dissolved in (4 gallons) of water. (3) Band the trees from December to April with a fluffy cotton band. (b) San hemp or Munj rope soaked in coal tar and crude oil emulsion in equal parts. The bands are put up 3 or 4 feet high from the ground. The females and nymphs collect on either side of the band and are killed by spraying with fish oil soap (1 seer) dissolved in water (40 seers).

III. Damaging mango inflorescences.

— Leaves black. Inflorescence withering and flowers falling off. Myriads of greenish yellow small insects on such inflorescences are the young ones of Mango hoppers (Idiocerus spp.).

Control.—Spray with Rosin compound during December-January to kill the adults.

[References.—(1) Punjab Agr. Departmental leaflet No. 32.
C. Insects Attacking Pomegranate and Guava

Fruits of pomegranate and guava with holes. Inside a blackish brown caterpillar with flesh coloured marks on its body, 'Anar' Caterpillar (Virachola isocrates Fabr.)

Control.—(1) Destroy attacked fruits. (2) Catch butterflies in hand-nets and kill them.

D. Insects Damaging Grape Vines

I. Eating leaf.—Leaves with egg clusters covered with yellowish hairs. Leaves present a parched appearance. On the underside of leaves a number of dark reddish brown hairy caterpillars, Ber Hairy caterpillars (Euproctis sp.). (This insect also feeds upon and damages the leaves of Ber and Falsa, castor, etc.).

Control.—(1) Collect egg clusters. (2) Dust plants with Sodium fluosilicate and ashes (1:8). (3) Spray lead arsenate-lime mixture (see under Lemon Butterfly caterpillar above).

II. Sucking Sap from leaves.—Leaves brown with a number of white patches, on the underside tiny brownish-yellow and yellowish-white, winged and wingless insects abound.—Grape Vine Thrips (Rhipiporothrips cruentatus Hood.).

Control.—Spray attacked plants with tobacco decoction.


E. Insects Damaging Peach

I. Sucking sap from the leaves.—Leaves badly curled and crowded together; inside such leaves small delicate brownish insects—Peach curl Aphids (Brachycaudus pruni).

Control.—Spray plants with tobacco decoction.


II. Boring in Peach fruits.—Fruits deformed often with a hole. Inside are the legless and creamy white coloured young ones of the Peach fruit fly (Chaetodacus zonatus F.)

Control.—(1) Destroy damaged fruits. (2) Stir up soil frequently underneath the attacked plants. (3) By spraying poison baits on some portions of the attacked plants. The bait is prepared by mixing lead arsenate (1 chhattak) with molasses (3 chattaks) dissolved in 4 gallons of water.


F. Insects Damaging Apples

(In Kulu Valley and Simla Hills).

I. Sucking sap.—(a) Branches with bluish-white cottony patches or whitish wreaths hanging down. Concealed within this cottony material are purplish brown insects—Woolly Aphids (Eriosoma lanigerum Hausm.).

Control.—(1) Purchase only Woolly Aphids free nursery stock. (2) Use its parasite—Aphelinus maili. [Ask the Entomologist to Government Punjab, Lyallpur, for it.]
(b) Branches appear to be dusted with greyish powder due to a covering of greyish scales, each being the size of a pin-head with a central nipple, each scale encloses a female or young one of the San Jose Scale (Aspidiotus perniciosus Comst.).

Control.—Spray plants between November to February with Deisel oil emulsion.

[Reference.—Departmental leaflet No. 88.]

G. Insects Damaging Walnuts

(In Kulu Valley and Simla Hills).

I. Attacking fruit.—Attacked fruits with a hole, the ground underneath the attacked plants covered with fallen fruits in May and June. Inside the fruit is a white grub—Walnut borer (Alcides porectirostris Mshl.)

Control.—Collect and destroy attacked fruits in May and June.

H. Insects Damaging Figs

1. Boring in the Stem.—Stem and main limbs nearer ground show large holes with frass and chewed wood coming out and also heaped up on the ground. Inside the stem is a large white grub-fig borer (Batrocer a rufomaculata.).

Control.—(1) Uproot and destroy dried plants. (2) Use kerosene oil in the holes and plug them up with mud.

Note.—This insect also attacks mangoes.


I. Insects Damaging Date-palms

(a) Feeding on leaf bases.—Boring below the crown, growing point killed or leaves opening out from attacked crowns present a jagged and ragged appearance. A large black beetle—Date-palm beetle (Oryctes rhinoceros Fb.).

Control.—(1) Hook out beetles from the attacked stems. (2) The insect feeds in the immature stages in manure heaps, so do not allow manure to accumulate for more than a month.

(b) Boring in the stem.—Stem with holes from which dirty resinous juice trickles down. In side the stem a fat red headed creamy white grub—Red palm weevil grub (Rhynchophorus ferrugineus Fb.).

Control.—(1) Paint wounds and cuts with coal tar to stop egg laying. (2) In the case of young plants make mud basins round the plants and drown the pest inside the stem by keeping it full of water. (3) Inject a little kerosene oil in the holes and plug them up with mud.