The economic importance of mites affecting fruit trees, with special reference to Citrus, in Egypt

[Acarina]

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The Tenuipalpidae, Eriophyidae and Tetranychidae cause extensive damage to deciduous and evergreen fruit trees (apples, pears, peaches, apricots, almonds, plums, figs, etc.), causing leaf drop, their general effect being to weaken the tree, check its growth and lower its productivity. Of late, such damage has increased to injurious levels and new records, viz. :

The European Red Mite, *Paratetranychus pilosus* (Canestrini and Fanzago), has recently been recorded attacking pears in Samanud (Gharbieh Province) [1].

The Mango is seriously attacked by the bud mite, *Aceria mangiferae* [2], which threatens the very existence of mango culture in Egypt.

Citrus trees are attacked by various species belonging to the above families.

Hall [3] referred to the damage done by Rust or Silver mites in Egypt about thirty years ago.

On account of their small size mites are apt to escape the notice of growers; a trained observer, however, cannot fail to see the symptoms of attack. Mites feed on fruit, leaves and green twigs of citrus, thus greatly reducing the tree vigour. They are most abundant on new growth and cause fruit drop by

(1) Journal Officiel, No. 98 (9. xi. 1954), page 13. — (Immature stages of the mite were first intercepted by Dr. Taher Sayed, in 1948. The were found on pear twigs from the farm of Kut El-Kolub, near Benha. The sticks were imported from the Mediterranean area).

(2) Taher Sayed, M. : *Aceria mangiferae*, nov. spec. (*Eriophyes mangiferae* Hassan M S) (*Bull Soc. Fouad 1er Entom.*,, XXX, pp. 7-10, 1946).

(3) Hall, W.J. : Insect Pests of Citrus in Egypt (Bull. Tech. Sci. Serv., No. 45, pp. 15-16, Ministry of Agriculture, Cairo, 1924).

feeding on fruit stems, so that fruit falls readily; fruit drop in the navel and sukkari oranges and mandarines may be as high as 50%. Mites feeding on the fruit cause scarring and scabbing of the rind, resulting in a lower grade of fruit. Defoliation caused is often very severe and is most noticeable in the last flush of growth and in the tops of trees. Defoliated twigs may die before producing a new set of leaves, in addition to developing gum spots. This type of damage is probably thought to be due to the withertip disease caused by the fungus *Colletotrichum gloesporioides* [4].

Another type of damage has been recently noticed by the writer in citrus, particularly on sweet lime (*Citrus limetta*) and common acid lemon (*Citrus limonia*). Judgiug by the symptoms, the damage is strikingly similar to that caused by the bud mite *Aceria sheldoni* (Ewing) in California and described by Boyce et al [5]. The buds develop into an abnormal type of growth, the twigs into a bunched or rosetted type of growth, and the leaves assume irregular shapes.

Mites in general are not susceptible to hydrocyanic acid fumigation. This may be due to the difference in trachael system between mites and insects. Actually, fumigation is known often to cause an increase in the number of mites [6].

Oil spraying is effective in checking mites; but one single application, no matter how thoroughly it is applied, is inadequate for keeping them under control for one single year. An extra treatment that does not involve the use of oil is imperative, because of unfavourable reaction to more than one annual application of oil.

Due consideration, however, must be given to the fact that mites develop resistence to some of the newer insecticides, like the organic phosphorous compounds.

Discussion

The writer who is in charge of pest control operations covering the largest citrus groves in this country from extreme north to south, is impressed by the enormous damage caused by mites to citrus, hardly an orchard being free from mite infestation. It is, therefore, a matter of extreme urgency that the existing pest control programmes shall be revised in the light of the mite problem.

In view of the rapidly increasing citrus export industry, emphasis must be laid on the fact that among the necessary requisites for export is freedom from insects and rind blemishes as is determined by the efficiency of insect control.

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[4] Brown T.W.: The Propagation of Citrus trees in Egypt (Bull. Tech. Sci. Serv., No. 44, Ministry of Agriculture, Cairo, 1936).

[5] Boyce, A. M., et al: The Citrus bud mite *Eriophyes sheldoni* (Ewing) (*Journ. Econ. Ent.*, XXXIV, p. 745, 1941).

[6] Quale, H. J.: Insects of citrus and other subtropical fruits (Comstock publishing Company, Inc., Ithaca, New-York, p. 33, 1938).