Insect pests and their control - New host records for Mediterranean fruit fly in Western Australia

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Recommended Citation
Jenkins, C. F. H. (1955) "Insect pests and their control - New host records for Mediterranean fruit fly in Western Australia," Journal of the Department of Agriculture, Western Australia, Series 3: Vol. 4 : No. 6 , Article 5.
Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture3/vol4/iss6/5

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NEW HOST RECORDS FOR THE MEDITERRANEAN FRUIT FLY IN WESTERN AUSTRALIA

The list of fruits and vegetables from which the Mediterranean fruit fly (Ceratitis capitata Wied.) has been reared in different parts of the world is well in excess of a hundred. The susceptibility of various host plants, however, varies considerably. Some fruits such as peaches and apricots are very attractive to flies, while others such as plums and grapes are frequently left unmolested.

The factors which stimulate fruit fly attack are not fully known, but it is clear that certain fruits are consistently attractive to fruit fly and that others may be attractive only under certain conditions. It is interesting to note that three new host plants for Western Australia were recorded during the autumn of 1955.

The fruits in question were:

- Tomatoes (*Lycopersicum esculentum*)
- Olives (*Olea europaea*)
- Walnuts (*Juglans regia*)

The Mediterranean fruit fly has been established in Western Australia since 1895 and the most consistent infestations are to be found in the metropolitan area. Tomatoes are extensively cultivated, both commercially and otherwise in this region and olive trees are also quite widely grown. It seems reasonable to suppose, therefore, that some unusual conditions must have been responsible for these new host records after 60 years.

Several ripe olive berries in one suburban property were found infested and ten adult flies were reared in the Entomological Laboratory. In the case of the single walnut found affected, the maggots did not enter the kernel but were associated with the outer fleshy husk which in this instance was sufficiently succulent to allow two fruit fly maggots and four tomato fly maggots to develop.

**Fig. 1.—Female Mediterranean fruit fly (greatly enlarged).**

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* Larvae obtained 17/5/55. Flies emerged between 27/5/55 and 31/5/55.
† Larvae obtained 22/4/55. Flies emerged between 23/5/55 and 3/6/55.
‡ Larvae obtained 22/4/55. Flies emerged between 23/5/55 and 26/5/55.
maggots (Lonchaea sp.) to develop to maturity. The tomato has been recorded as a host of the Mediterranean fruit fly in various parts of the world, but nowhere does it seem to be a highly susceptible fruit. Referring to Hawaii, Bach & Pemberton (1918) say: “The ordinary cultivated tomato (L. esculentum) is not generally infested by C. capitata.” Bodenheimer (1915) writes: “With regard to vegetables, there is one report of tomatoes (L. esculentum) having been attacked 15 years ago in Palestine.”

The possibility of tomatoes being infested with fruit fly in this State has never been overlooked (Newman 1924). Numerous previous reports have been investigated, but in all such cases the maggots of the tomato fly (Lonchaea sp.) were implicated. One inaccurate reference to tomato infestation in Western Australia has appeared in literature (Smith 1939) but this was later corrected (Smith 1940).

The present infestation was located in a single ripe tomato purchased from a metropolitan grocer’s shop, and two fruit flies and four tomato flies were reared in the laboratory. A careful inspection was made at the Wanneroo market garden where the fruit was grown but no further sign of fruit fly infestation could be found.

No definite reason can be offered for the unusual fruit fly infestations during 1955. Six hundred and fifty-five points of rain, an all time record (average 39 points) fell in February, 1955, and the conditions following these unusual downpours were very conducive to fly activity.

The record of most significance is, of course, the tomato, and a very careful watch will be kept on tomato crops next season to see if any further sign of fruit fly attack can be detected. From previous experience, however, not only in this State but in other parts of the world, it seems reasonable to anticipate that the recent infestation will prove to be an unusual and isolated occurrence and not an indication that tomatoes will assume an important role as fruit fly hosts in this State.

LITERATURE

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