

THE COTTON WHITE FLY *BEMISIA TABACI* GEN. BIOECOLOGY AND METHODS OF CONTROL

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Summary

The cotton white fly is a very important pest of cotton in some of the cotton growing areas of Iran. This pest was seen at kerman cotton fields (south- east of the country) for the first time in 1955 but in recent years it has been observed all over the cotton growing areas of southern and central parts of the country.

The pest population greatly increases, in years with favourable conditions. This large population of white flies, larvae and adults, significantly reduce the moisture and nitrogen content of infested plants. In severe out- breaks, the cotton white fly exerts large quantities of a sticky liquied (honey dew) which covers the cotton leaves, open bolls and contaminates the lint as well. Most of the leaves, flowers and immature bolls will falldown while a reduction in buds, yield and quality of cotton takes place.

Bioecology

Cotton white fly mostly overwinters as pupae and nymphes under the leaves of some weeds which remain green in winter. Between these weeds, two species of convolvulus, *linaria* sp., *sonchus oleraceus* and *Althea* sp. are important ones.

In spring when the mean temprature reaches about 12° c, the adult insects appear. The main hosts for this new generation are mostly cucurbits such as cucumber and cantaloupe leaves also some weed's, leaves.

In the summer time because of high temprature and hot winds, the thick juicy leaves of melon, as a host, provide the best shelter for the pest.

At the end of August when melon leaves wilt, white fly translocates to the neighbouring cotton fields. At this time the temprature gradually decreases while humidity increases so a very favourable

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climatic condition will be provided for cotton white fly which leads to formation of large populations in a short time and naturally a heavy infestation in cotton field.

Actually the climatic and cultivation condition of Garmsar (the area in which this research was conducted) are quite suitable for white fly prevalence. Because of the mild winter of Garmsar some host weeds remain green and are able to protect a large number of white fly pupae and nymphs under their leaves. In this way enough number of pupa and nymphs survive till the next year to start their activities if conditions are favourable, as it happened in 1968 - 70 - 71. In these years because of high population of the pest, cotton and other cultivated host crops were sprayed several times. But in 1969 due to the very cold weather of previous winter pest population was low.

Control Measures

In the years of heavy infestation white fly can not be efficiently controlled unless the integrated control method is used. According to observations the following practices are known to be effective for white fly control:

1. Since this pest moves to cotton field in late season (August and September), early sowing of cotton may provide a chance to pick up healthy cotton before infestation starts.
2. All the agrotechnical practices such as fertilising, irrigation, weed control and winter control practices should be done in proper time.
3. Since cotton and melon fields are mostly near to each other and white fly can then easily move from melon (summer host) to cotton field, it should be taken into consideration that cotton fields must be far enough from melon fields.
4. The infested melon leaves are to be destroyed after harvesting because they are a good source for cotton contamination.
5. Cotton picking should be done on time.
6. Except the above mentioned practices, chemical application is required in the year of heavy infestation. For this purpose several insecticides have been tested and the best results were obtained by:
 - a. D. D. T 25 %, 4 lit + Dimethoate 49 %, 2 lit/H.
 - b. Thiodan 35% 3 lit/H
 - c. Sevin 85 % 3kg + Dimethoate 49 % 1 Kg/H

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