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EFFICACY OF INSECfICIDES AGAINST APHIDS INFECfION OF SAFFLOWER VARIETIES

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Four Safflower varieties namely, Thori-78, PI-253387, Early Selection-47 and S.H. Selection-S were sown in the field at CORI, PARC during the year 1991-92. Out of four, two varieties were resistant but S.H.. Selection-S was highly infested with the *Aphis gossypii* glov, The four systemic insecticides namely monocrotophos, dimethoate, methomedophos and matasystox were used to control the aphids.

INTRODUCfION

Safflower *(Carthamus tinctoreusi* is one of the non traditional oil crops adopted to late sowing in Rabi season. It is an important oil crop of Pakistan. It's oil is used for manufacturing of soap and also often used as an adulterant of ghee or sesame oil. It is generally sown mixed with wheat, barley, gram or jowar, 'but sown pure when required for dye extraction. Safflower aphid, *Macrosiphum jaceasco* Linn, is reported to have caused considerable damage to the crop in Dhawar and Bijapur in Bombay state. Spraying with fish oil rosin soap, nicotin sulphate, OOT or gammexane is effective against aphid attack (Trahan and Halleppanawar, 1949). *Aphis gossypii* glover (cotton aphids or melon aphid is a cosmopolitan species. It is an extremely important agricultural pest with a very wide host range. When seriously infested, the leaves become pale-green to yellowish green and drop prematurely. The injury results in degenerated and retarded growth of plants. The infestation is usually very severe when the weather is not too dry. Control measures should be started as soon as the first aphid colonies are observed. This is the only way of preventing large scale formation of sooty mould. Folidol dust @ 200 to 400 g ai/ha can be used to control the aphids. The most effective systemic insecticide which is used in field is monocrotophos 40%. Monocrotophose @ .02% was sprayed and total control of aphids was achieved successfully. Single spray was enough. Against *A. [oveicollis,* phosphamidan at 0.03% was the most effective followed by carbaryl at 0.02% and endosulphan at 0.05%. Aphids of the wildering diversity cause severe losses in a wide range of crops. Various research workers have recommended different control measures. Harding (1962) used many insecticides and found oxydemeton methyl and phosphamidon effective against melon aphids by spraying methods and Linnacus *et al.* (1962) found that phosphamidon and dimcthoate were effective when applied to the foliage but phosphomidon granules applied to the soil were ineffective. Disulphoton was also used to control green peach aphids *Myzus persical,* sulz, up to 3 months. We have planned this experiment in field at CORI, PARC, Karachi University Campus to see which insects are the problems of safflower varieties and to investigate relative efficacy of .different insecticides against aphids.

MATERIALS AND METHODS

The sowing of four safflower varieties namely S.H. Selection-3, Thori-78, PI-253387 and Early Selection-47 were done in the experimental area of CDRI, PARC, Karachi Uniersity Campus, to evaluate the effectiveness of various insecticides. The plot size was ISm x 12 m. The seeds were collected from Tandojam University, SinJh for this experiment.. Four insecticides namely monocrotophos, dimethoate, metasystox and methomedophos were used to control the aphids. A't the time of flowering the percentage of plants infested were noticed in all the varieties tested. Percentage infestation was determined before and after application of insecticides in case of each variety.

RESULTS AND DISCUSSION

The results presented in Fig. 1, indicate that the maximum attack (56.8%) of insect was found in variety S.H. Selection-3, and the minimum attack (1.2%) was noticed on P.!. 253387. The most effective insecticide was monocrotophos which gave almost complete control of the insect attack and the percentage on all the varieties is only 4.0% (averaged over 4 varieties). Then next come the metasystox that show only 16.5% attack. Aphids infest' almost all the crop in the form of immobile colonies. It is desirable that an insecticide for their control should be capable of not only eradicating the pest, but should also protect the crop from reinfestation for as long as possible. This objective is achieved by using monocrotophos which remain effective up to harvesting time. A single spray was enough at 0.03% dosage level and 100% mortality was observed. It is therefore, suggested that control measures should be started as soon as the first aphids colonies are observed. This is the only way of preventing large scale formation of colonies and sooty mould.

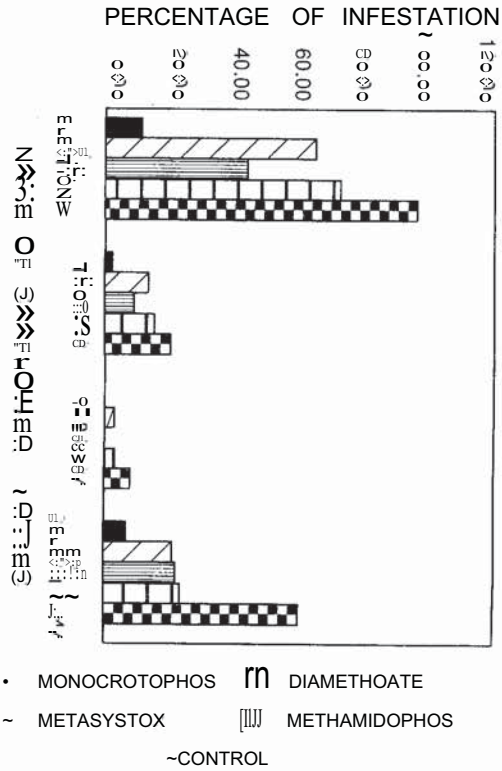

Fig. 1. Percent Aphid control population on safflower varities after using insecticies

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