A SURVEY OF APHIDS AND THEIR NATURAL ENEMIES ON ECONOMIC AND OTHER PLANTS

by

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ABSTRACT

Aphids (Homoptera: Aphididae) are a group of phytophagous insects that feed on the plant sap and thereby are able to transmit viral diseases in plants. Over 4,000 species of aphids are known to be present in the world and about 20% of them have been recorded from India. Nearly 72 species of aphids have been recorded from Sri Lanka and the majority of them are without host records. The aphids of Sri Lanka are thus not well known except for those occuring on a few economic crops.

The main objective of this survey was to collect and identify aphids, their host plants and their natural enemies. This survey was based on collections made in 26 areas from six different agro-ecological regions of the country. In each area at several sites, the vegetation was closely examined for aphid colonies and their natural enemies. Aphids (both alates and apterae) were collected into 70% alcohol, for slide mounting and identification. Parasitized aphids were held until the emergence of parasitoids. Insects predatory on aphid colonies were collected. The plants on which aphids were present were examined for signs of viral infection.

Over 1,000 species of plants were examined during the study. Aphid colonies were present on 300 plant species in 71 families. A total of 47 species of aphids in 28 genera were collected and identified. Keys were constructed for the identification of the 46 aphid species collected during the study. Of the aphids collected during the present survey, 12 aphid species in 10 genera are new records for Sri Lanka. Furthermore, Three rare species of aphids and 3 species of aphids not present in India were collected. The aphids collected included 30 species of potential viral vectors. Yet, only 40 species of plants harbouring 16

species of aphids showed probable signs of viral infection. Of the 7 endemic aphid species recorded for Sri Lanka, 2 species were collected during the study.

Weeds and vegetables harboured the largest collection of aphids. Certain aphid species were found on vegetables as well as on adjacent weeds. Although, the aphids collected were largely polyphagous species, 15 aphid species were host specific. Fourteen of the endemic plants examined harboured 7 species of common aphids.

Natural enemies of aphids collected consisted of 21 species of predators (F. Coccinellidae, Chrysomelidae, Syrphidae and Chrysopidae) and 4 species of parasitoids (F. Braconidae). These natural enemies were largely collected from aphids infesting weeds and vegetables. The recorded flora of Sri Lanka includes 4,500 species of flowering plants thus indicating that a large part of our fauna remains to be examined for aphids and their natural enemies.