

IDENTITY, ORIGIN, AND HOST RANGE
OF THE BLUE ALFALFA APHID

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Our new alfalfa aphid is apparently the same as an aphid occurring commonly on alfalfa and some other small-seeded legumes in Japan. The scientific name accepted for this aphid is Acyrtosiphon kondoi Shinji. Shinji published the description of this species in 1938, based on apterous specimens collected from alfalfa on June 1, 1937 at Kinshu, Manchuria, then called Manchoukuo. The co-type specimens were destroyed by bombing during World War II. Dr. Ryoichi Takahashi re-described A. kondoi in 1965, using aphids from alfalfa and clover collected at Chiba, Honshu. Dr. Takahashi had worked with aphids for many years so must have been familiar with Shinji's types. We are accepting this name as the one to use.

Acyrtosiphon kondoi Shinji is one of a group of Eurasian aphids somewhat resembling the pea aphid, A. pisum (Harris), that occur on legumes. The table shows many of these Acyrtosiphon spp.

<u>Name</u>	<u>Hosts</u>	<u>Locations</u>
<u>astragali</u> Eastop	<u>Astragalus</u> sp	Pakistan
<u>caraganae</u> (Cholodkovsky)	<u>Caragana</u> spp. <u>Colutea</u> , <u>Coronilla</u> , <u>Anthyllis</u> , <u>Hippocrepis</u>	England, Norway, Switzer- land to Mongolia
<u>ericetorum</u> H.R.L.	<u>Genista</u>	Netherlands
<u>genista</u> Mordwilko	<u>Genista tinctoria</u>	European Russia
<u>gossypii</u> Mordwilko	Cotton, <u>Phaseous</u> , <u>Vicia</u> , <u>Vigna</u> , <u>Lepidium</u>	Egypt, Turkey, Algeria, Iraq, Turkestan
<u>hissarica</u> Umarov	<u>Cicer soongoricus</u>	Tadzhikistan
<u>kondoi</u> Shinji	Alfalfa, Clovers Sweet Clovers	Mongolia, Korea, Japan
<u>loti</u> Theobald	<u>Lotus</u> , <u>Anthyllis</u> , Alfalfa, <u>Lathyrus</u> , <u>Astragalus</u> , etc.	England & Norway to Turkey
<u>parvus</u> Börner	<u>Cytissus</u> spp. <u>Sarothamnus</u>	Austria, Hungary, Poland, Czechoslovakia, Bulgaria

A. kondoi came to us from eastern Asia, probably from Japan and from its distribution when first discovered it was probably introduced into southern California. A collection of aphids from alfalfa in Imperial county taken in the spring of 1973 by Bob Bowen was all A. pisum.

Dr. Masahisa Miyazaki reports that in Japan in the spring A. kondoi is the predominant aphid on alfalfa since it out-competes pea aphid. He reports that this aphid prefers alfalfa over white clover but prefers white clover over red clover. Dr. Gonzalez found it in good population on yellow sweet clover, Melilotus officinalis.

Host range studies are being conducted in a cabinet at UCR at 70°F and 16 hrs. light per day. Five adult or late nymphal specimens of A. kondoi are caged on one or a number of seedling plants growing in a 6-in. clay pot. A check at about 5 days shows if they survive. A count is made at 14 days.

Host Range Studies

<u>Common Name</u>	<u>Scientific Name</u>	<u>No. @ 14 days</u>
Pea	<u>Pisum sativum</u>	0
Sour clover	<u>Melilotus indicus</u>	300
Red clover	<u>Trifolium pratense</u>	12
Cowpea	<u>Vigna sinensis</u>	0
- - - - -	<u>Dorycnium sp.</u>	40
Crown vetch	<u>Coronilla varia</u>	0
Hyacinth bean	<u>Dolichos lablab</u>	0
Sweet pea	<u>Lathyrus odoratus</u>	0
Birdsfoot trefoil	<u>Lotus corniculatus</u>	117
White clover	<u>Trifolium repens</u>	200
Purple vetch	<u>Vicia atropurpurea</u>	0
Scotch broom	<u>Cytisus scoparius</u>	0
Loco weed	<u>Astragalus pomonensis</u>	300
Deer weed	<u>Lotus scoparius</u>	150
Fava bean	<u>Vicia fava</u>	0
Common bean	<u>Phaseolus vulgaris</u>	0
Japanese pagoda tree	<u>Sophora japonica</u>	0
Canary Island broom	<u>Genista canariensis</u>	0
Alfalfa (Moapa)	<u>Medicago sativa</u>	185

These data and field observations indicate that sweetclovers, loco weed and white clover are preferred hosts. A. kondoi forms tight colonies on the stems of mature white sweet clover at the tops of the branches and at nodes. On white clover it prefers the vertical leaf petioles. On mature alfalfa these aphids feed chiefly on buds while on rapidly growing alfalfa they form tight colonies on the elongating stems near the tips. Feeding A. kondoi inject a toxin into the plant so that a high population of these aphids stops the growth of the plants.