

HOST PLANTS OF SIXTEEN APHIDS FROM BANANA PLANTATIONS IN HONDURAS

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ABSTRACT

The ground cover plants in banana plantations of the Ulua Valley in northern Honduras were examined for aphids, particularly *Aphis gossypii* Glover, *Rhopalosiphum maidis* (Fitch), and *Myzus persicae* (Sulzer) which have vectored a virus disease of bananas experimentally. In addition, the following aphids were found: *Aphis nerii* Boyer de Fonscolombe, *A. craccivora* Koch, *A. spiraeicola* Patch, *A. coreopsidis* Thomas, *A. illinoisensis* Shimer, *Toxoptera aurantii* (Fonscolombe), *Tetraneura hirsuta* (Baker), *Capitophorus eleagni* (Del Guercio), *Hysteroneura setariae* (Thomas), *Hyadaphis pseudobrassicae* (Davis), *Tinocallis kahawaluokalani* (Kirkaldy), *Dactynotus verbesinae* (Boudreaux), and *Pentalonia nigronervosa* (Coquerel). The host plants and the place on the plant where the aphids were found are listed under each aphid species.

In 1955, Dr. C. W. Wardlaw found a virus disease in commercially grown Giant Cavendish bananas in the Aguan River Valley near La Ceiba, Honduras. By 1957 the virus, infectious chlorosis, began to appear in Gros Michel bananas in plantations in the Ulua Valley over 100 miles from the first discovery. The virus was transmitted between bananas experimentally by *Aphis gossypii* Glover, *Rhopalosiphum padi* (L.), *R. maidis* (Fitch), *Myzus persicae* (Sulzer), and *Acyrtosiphon pisum* (Harris) (Waite 1960). In addition, the virus produces mosaic symptoms on *Physalis* sp., *Isotoma longiflora* (L.) Presl., *Ricinus communis* L., *Cucumis* sp., *Cucurbita* sp., *Crotalaria* sp., and *Pueraria* sp., plants found in or near banana plantations.

In 1961, an outbreak of infectious chlorosis prompted a study to determine all the aphid species and their host plants in banana farms. This study was begun by Dr. E. R. Willis now at Illinois State Normal University, Normal, Illinois. The host plants were determined by Mr. J. D. Dickson, Division of Tropical Research, La Lima, Honduras. The aphids were identified by Miss L. Russell, USDA Entomology Research Division at Washington, D. C., Dr. M. E. McGillivray, Can. Dep. Agr., Fredericton, N. B., Dr. Clyde F. Smith, N. Carolina State College, Raleigh, N. C., and Dr. J. O. Pepper, The Pennsylvania State University, University Park, Pa.

METHODS

The banana farms surveyed were situated along the Comayagua, Ulua, and Chamelecon Rivers, north and south of La Lima, Cortes, Honduras. The area is approximately 40 miles long and 5 to 10 miles wide.

The plants in 14 2-acre stations were examined for aphids every month for one year, then at intervals when time permitted. All aphids

¹ A subsidiary of United Fruit Company

collected were preserved in alcohol. There was no definite system of plant inspection. Usually a team of three surveyors worked in each station for approximately one hour. Every plant encountered was examined. Specimens of plants hosting aphids were collected in plastic bags and identified.

There are undoubtedly more aphid species and host plants still to be collected in the banana plantations. In fact, five unidentified aphids were collected in addition to those presented below. The aphids are listed in order of approximate abundance, the most frequently found aphids listed first. Where possible, the common and scientific names follow the approved list of the Entomological Society of America.

HOST PLANTS OF APHIDS²

Aphis gossypii Glover, the cotton or melon aphid

Acanthaceae—acanthus family

Blechnum pyramidatum (Lam.) Urban On stems and underside of leaves

Apocynaceae—dogbane family

Rauwolfia tetraphylla L.

Araceae—arum family

Xanthosoma roseum Schott

Aristolochiaceae—birthworth family

Aristolochia grandiflora Sw. Behind open flowers and underside of leaves.

Bombacaceae—bombax family

Hampae stipitata Wats.

Boraginaceae—borage family

Cordia dentata Poiret

Compositae—composite family

Ageratum conyzoides L.

Baltimora recta L.

Chaptalia nutans (L.) Polak.

Erechitites hieraciifolia (L.) Raf.

Gynura aurantiaca (Blume) D. C.

Wedelia trilobata (L.) Hitchc.

Cucurbitaceae—gourd family

Cucumis sativus L.

Momordica Charantia L.

Terminal stems, runners and tender leaves.

Euphorbiaceae—spurge family

Acalypha Wilkesiana Muell. Arg.

Labiatae—mint family

Teucrium inflatum Sw.

Malvaceae—mallow family

Hibiscus Rosa-sinensis L.

Unopened flowers

²Unless otherwise noted, the aphids were found on the underside of leaves.

<i>Malachra fasciata</i> Jacq.	
<i>Sida acuta</i> Burm.	Underside of upper leaves.
Moraceae—mulberry family	
<i>Cecropia hondurensis</i> Standl.	
Musaceae—banana family	
<i>Musa sapientum</i> L.	Underside of lower leaves on young plants.
Piperaceae—pepper family	
<i>Piper</i> sp.	
Portulacaceae—purslane family	
<i>Portulaca oleraceae</i> L.	
Rubiaceae—madder family	
<i>Hamelia patens</i> Jacq.	
<i>Ixora coccinea</i> L.	
Solanaceae—nightshade family	
<i>Capsicum annum</i> L.	
<i>Solanum hirtum</i> Vahl.	
<i>Solanum nigrum</i> L.	
<i>Solanum</i> sp.	
<i>Solanum verbascifolium</i> L.	
Sterculiaceae—sterculia family	
<i>Guazuma ulmifolia</i> Lam.	
Urticaceae—nettle family	
<i>Urera</i> sp.	
Verbenaceae—vervain family	
<i>Priva lappulacea</i> (L.) Pers.	Underside of lower leaves.
Unidentified Hosts	
A broadleaf plant	
A broadleaf plant	On terminal stems and underside of leaves.

Rhopalosiphum maidis (Fitch), the corn leaf aphid

Boraginaceae	
<i>Cordia dentata</i> Poiret	Young shoots on a stump in corn patch.
Gramineae—grass family	
<i>Holcus sorghum</i> L.	Central furled leaf.
<i>Ixophorus unisetus</i> (Presl) Schlecht.	Central furled leaf.
<i>Panicum barbinode</i> Trin.	Central furled leaf.
<i>Panicum maximum</i> Jacq.	
<i>Pennisetum purpureum</i> Shumacher	Central furled leaf.
<i>Zea mays</i> L.	Tassel, central furled leaf on young plants.
Unidentified grass	Central unfurled leaf.
Unidentified grass	Central unfurled leaf.

Aphis illinoisensis Shimer, the grapevine aphid

Vitaceae—vine family	
<i>Vitis tiliacifolia</i> Humb. & Bonpl.	

Cisus sicyoides L.

Unknown Hosts

An unidentified vine

Capitophorus elaeagni (Del Guercio)

Compositae

Cirsium costaricense (Polak.) Petrak.

Tetraneura hirsuta (Baker)

Gramineae

Ixophorus unisetus (Presl) Schlecht. On root near crown.

Panicum barbinode Trin. On root near crown.

Paspalum fasciculatum Sw. On root near crown.

Setaria geniculata (Lam.) Beauv. On root near crown.

Unidentified grass On root near crown.

Aphis coreopsidis (Thomas)

Compositae

Bidens pilosa L.

Underside of upper leaves,
at base of young leaves and
terminal stems and flowers.

Chaptalia nutans (L.) Polak.

Vernonia scorpioides (Lam.) Pers.

Aphis nerii Boyer de Fonscolombe, the oleander and milkweed aphid

Asclepiadaceae—milkweed family

Asclepias curassavica L.

On flowers and slender branches
and underside of leaves.

Cynanchum rensoni (Pittier) Woodson On terminal stems and under-
side of leaves.

Funastrum clausum (Jac.) Schlechter. On stems and underside of
leaves.

Verbenaceae

Priva lappulacea (L.) Pers.

Pentalonia nigronervosa Coquerel, the banana aphid

Aracea

Xanthosoma roseum Schott

Within unfurled leaves and at
base.

Musaceae

Heliconia latispatha Benth.

At leaves' bases near base of
plant.

Musa sapientum L.

At leaves' bases on young
plants.

Aphis craccivora Koch, the cowpea aphid

Leguminosae—pulse family

Gliricidia sepium (Jacq.) Steud.*Vigna sinensis* (L.) Endl.

Zygophyllaceae—caltrop family

Kallstroemia maxima (L.) Torr. & Gray*Toxoptera aurantii* (Fonscolombe), the black citrus aphid

Euphorbiaceae

Acalipha Wilkesiana Muell. Arg.

Piperaceae

Piper tuberculatum Jacq.

Rubiaceae

Ixora coccinea L.

Rutaceae—rue family

Citrus Limonia Osbeck.

Underside of young leaves.

Murraya paniculata (L.) Jack.

Underside of young leaves.

Aphis spiraeicola Patch, the spirea aphid

Asclepiadaceae

Cynanchum rensoni (Pittier) Woodson On terminal stems

Rubiaceae

Hamelia patens Jacq.

Rutaceae

Citrus sinensis Osbeck.*Tinocallis kahawaluokalani* Kirkaldy

Lythraceae—loosestrife family

Lagerstromia indica L.*Myzus persicae* (Sulzer), the green peach aphid

Araceae

Xanthosoma roseum Schott.

Leaves' bases.

Aristolochiaceae

Aristolochia grandiflora Sw.Underside of leaves, and
behind flowers.

Cruciferae—mustard family

Brassica oleracea botrytis D. C.*Brassica oleracea* var. *acephala* D. C.*Hyadaphis pseudobrassicae* (Davis)

Cruciferae

Brassica oleracea var.*Raphanus sativus* L.

Hysteroneura setaria (Thomas), the rusty plum aphid

Gramineae

- | | |
|--------------------|---|
| Unidentified grass | Underside of top leaves and
on spikes. |
| <i>Zea mays</i> L. | Underside of top leaves. |

Dactynotus verbesinae (Boudreaux)

Compositae

- Verbesina myriocephala*
- Sch. Bip.

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