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## Host Ranges of the Bean Aphid: *Aphis fabae* Scopoli in Jordan (Homoptera, Aphididae)

by T. Mustafa & J. R. Qasem

**Abstract:** Twenty seven host Plants of the bean aphid, belong to thirteen families, during 1983, in Jordan, are listed. The location, degree of infestation and aphid form were also reported.

### Introduction

Many of aphid species are economically important to agriculture in Jordan, as they are in the other regions of the world. They can remove the plant sap but greater losses are probably caused by the viral diseases which might transmit by several aphids (KENNEDY et. al., 1962).

The bean aphid is known to transmit at least 32 different viruses (AVIDOV & HARPAZ, 1969). In Jordan, AL-MUSA & MANSOUR (1982) reported that the *Aphis fabae* transmits the water melon virus. BODENHEIMER & SWIRSKI (1957) reported three hosts in West Bank. This important species causes the infested leaves to curl and to reduce the growth. Also it secretes honeydew, attracting the ants to visit the plant.

The importance of this aphid might account partly for the large number of its host plant. It is the purpose of this study to report the host plants of the bean aphid in Jordan to provide information concerning the aphid location, seasonal distribution, degree of infestation and available form.

### Materials and Methods

A weekly field visit was conducted to collect infested plants with aphids in different fields during 1983. The plants were inserted into plastic bags and then transferred to the refrigerator. The collected aphids and plants were classified in 1–2 days.

The aphid adult was carefully transferred by a small soft brush onto a drop of Van Emden's media (VAN EMDEN, 1972). The appendages were spreaded in the suitable position on the slide and then covered with a cover glass. The mounted specimen was slowly and carefully boiled and then left to cool and the mountant to become hard and ready for the microscopic examination. The *Aphis fabae* specimens were con-

firmed according to some specimens identified by Dr. Eastop of British Museum and the key of BODENHEIMER and SWIRSKY (1957).

However, the location and the date of each collected sample were recorded. Both apterous and alatae were observed on each sample. Several observations e.g. honeydew, damage and infested parts were recorded. The degree of infestation was categorized as follows: (a) Started to colonize considered «slightly infested»; (b) had a big colony or two colonies considered «medium infested» and (c) had more than two colonies considered «highly infested».

The host plants were classified according to POST, (1932). These hosts are listed with the families as the following.

### List of host plants

#### 1. Leguminosae:

Aphid infestation was on the lower surfaces of leaves, shoots, leaf axils and some times on pods.

**Vicia faba** L. (Broad bean). 20 samples were collected from many localities including Wadi-El-Yabis and University farm in Jordan valley between February and April; Jarash, 12th April; Ajloon, Rusiifa, and Wadi-Dleal in early May; Madaba and Wadi-Sheab, 11th May; glass houses in Jbeiha between March and December; Bakha, 20th November. Apterous were only recorded except in the last sample. All samples were highly infested.

**Phaseolus vulgaris** L. (Kidney bean): Salt, 10th August; Madaba, 18th September. Few alatae were present. All collected samples were highly infested.

**Phaseolus lunatus** L. (Lima bean): Madaba, 14th August; Wadi-Al-Sear, 28th August; Salt, 1st September; Amman, 10th September. Few alatae were present. All collected samples were highly infested.

**Cicer arietinum** L. (Checkpea): Jbeiha, 1st June; Madaba, 5th June; Salt, 29th July. Few alatae were present. All collected samples were highly infested.

**Pisum sativum** L. (Common pea): Jarash, 1st September; Ajloon and Anjara, 11th September. Alatae were not present. Collected samples were medium infested.

**Medicago turbinata** Willd (Medick): Bakha, 1st April; Jarash, 12th April. Alatae were not present. The samples were highly infested.

**Vicia peregrina** L. (Broad-podded vetch): Ajloun and Jarash, 12th April; Jbeiha, 20th April. Alatae were not present. The samples were medium infested.

**Vicia narbonensis** L. (Broad leaves vetch): University farm, 15 th April; Deir-alla, 2nd May. Alate were not present. The samples were highly infested.

**Vigna sinensis** Savi (Cowpea): Madaba, 12th October. The plants were covered with both forms.

**Robinia pseudoacacia** L. (False acacia): Jarash, 3rd May; Rumtha, 12th May; Madaba and Amman, 18th May. Al-Nhiimah, 20th May; Madaba, 27th May. Alatae were not present. The collected shoots were highly infested.

## 2. Solanaceae:

Aphid infestation was mainly under leaves and growth tops.

**Capsicum frutescens** L. (Pepper): Madaba, 14th August; Jarash, 28th August. Few alatae were present. The collected samples were medium infested.

**Withania sonnifera** Pauq (Withania): Kafreen, South Shouna, Karamah and University farm, 26th April. Alatae were not present. The collected samples were highly infested.

**Solanum nigrum** L. (Black nightshade): Wadi-Al-Sear, 14th June, 28th August and 29th November; Bakha, 19th July; Rmameen, 1st August; Wadi Sheab, 28th June; Irbid, 4th September; Walah, 13th December; Jordan valley (Kebed), 15th November. Few of alatae adults were present. The collected samples were highly infested.

## 3. Compositae:

Aphid infestation was under leaves, stems, flowers and growth tops.

**Carduus pycnocephalus** L. (Italian thistle): Anjara and Jarash, 12th April: Swaileh, Al-Fheas, 25th April, Alatae adults were not present. The collected samples were highly infested.

**Tragopogon collinus** L. (Goat's-beard): Ajloun and Anjara, 25th April; Irbid and Rumtha, 3rd May. Few of Alatae was present. The samples were highly infested.

**Onopordon anisacathum** Bioss (Cotton thistle): Irbid and Al-Nhiimah, 13th May; Bakha and Jarash, 3rd May. Alatae adults were not present. The samples were highly infested.

**Cirsium syriacum** L. (Syrias plumed thistle): Maein, Madaba, 6th May;

Al-Nhiimah, Huson, Sarieh and Rumtha, 13th May. Alatae adults were not present. The samples were highly infested.

#### 4. Umbelliferae:

Aphid infestation was on leaf axiles, pedicels, flowers and stems. **Astoma seselifolium** Dc. (Astoma): Jbeiha, Salt and Naoor, 20th April; Anjara, Sakib and Jarash, 3rd May, Alatae adults were not present. The collected samples were highly infested.

**Ammi majus** L. (Bishop's weed): Rumtha, Howara and Jarash, 5th June; Naoor and Wadi-Al-Sear, 28th May. Alatae adults were not present. The collected samples were medium or slightly infested.

**Foeniculum vulgare** Hill (Fennel): Irbid and Jarash, 5th June; Mahes and Salt, 28th May. Alatae adults were not present. The collected samples were medium or slightly infested.

#### 5. Papaveraceae:

Aphid infestation was on the flowers and stems.

**Papaver rhoeas** L. (Corn poppy): Jarash, 12th April; Karak, 15th April. Alatae adults were not present. The samples were medium infested.

#### 6. Crucifereae:

Aphid infestation was on the lower surfaces of the leaves.

**Cardaria draba** L. (white top): Sweilah and Jbeiha, 20th April; Rusiifa, 25th April. Alatae adults were not present. The collected samples were highly infested.

#### 7. Gramineae:

Aphid infestation nas appeared on the leaves and leaf axiles.

**Triticum durum** Desf. (Hard wheat): Jarash, 12th April. The sample was slightly infested and without alatae form.

**Zea mays** L. (maize): Rmameen, 1st Augst; Ajloon and Anjara, 11th September. The samples were highly infested but without alatae form.

#### 8. Amaranthaceae:

Aphid infestation was under surfaces of the leaves, flowers and stems.

**Amaranthus blitoides** W. (Prostrata pigweed): Wadi-Al-Sear, 14th June and 28th August; Wadi-Sheab, 21st June; Salt, 5th July; Bakha, 17th July; Jarash, 7th August. All the samples were highly infested and contained alatae form.

**9. Chenopodiaceae:**

Aphid infestation was recorded under the leaves, flowers and growth tops.

**Beta vulgaris** L. (Garden beat): Madaba, 28th May and 12th October; Salt, 5th July. The last sample was highly infested, although all contained alatae form.

**10. Cucurbitaceae:**

Aphid infestation was on the leaves and stems.

**Citrullus colocynthis** L. (Neck): Wadi-Sheab, 28th June. The sample was highly infested and contained alatae form.

**11. Portulacaceae:**

Aphid infestation was on the growth tops and flowers.

**Portulaca oleracea** L. (Purslane): Rumtha and Jarash, 4th September. The sample was medium infested and did not contain alatae form.

**12. Myrtaceae:**

Aphid infestation was on the growth tops and leaves.

**Psidium guajava** L. (Guava): The sample collected in the University farm in Jordan valley containing apterous form only in 15th November.

**13. Polygonaceae:**

**Rumex** spp. (sharp dock): The sample was collected in Saham (Irbid) in 23rd November. It was medium infested with apterous only.

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