

The Coriander Aphid, *Hyadaphis coriandri* (Das) (Homoptera: Aphididae)¹

Susan E. Halbert²

INTRODUCTION: The coriander aphid, *Hyadaphis coriandri* (Das), was found for the first time in North America on fennel (*Foeniculum vulgare* Mill.) at Orange County residences in Apopka and Orlando. In December 1998, an infestation also was found on coriander (*Coriandrum sativum* L.) and dill (*Anethum graveolens* L.) at a residence in Tampa, Hillsborough County.

There are about thirteen described species of *Hyadaphis* (Remaudière and Remaudière 1997), most of which are obscure Central Asian or European species (Ivanovskaya 1977; Kadyrbekov 1990; Miyazaki 1971; Raychaudhuri, *et al.* 1980; Shaposhnikov 1964). There are several species in the genus known to be pests, including the coriander aphid, *Hyadaphis foeniculi* (Passerini), *Hyadaphis passerinii* (del Guercio) and *Hyadaphis tataricae* (Aizenberg).

Only three *Hyadaphis* species occur in the Western Hemisphere. *Hyadaphis foeniculi*, the honeysuckle aphid, has been in North America for a long time. Its winter host is honeysuckle, and summer hosts are various Umbelliferae including some cultivated crops. There are no Division of Plant Industry specimens or records of this species in Florida. *Hyadaphis tataricae*, the honeysuckle witches' broom aphid, was introduced into the Western Hemisphere in the mid 1970s and had colonized northern



Fig. 1. Colony of coriander aphids on fennel. Photo: Jeffrey Lotz



Fig. 2. Damage to fennel by coriander aphids. Photo: Jeffrey Lotz.

¹ Entomology Contribution No. 890, Bureau of Entomology, Nematology & Plant Pathology - Entomology Section.

² Taxonomic Entomologist, FDACS, Division of Plant Industry, Florida State Collection of Arthropods, P.O. Box 147100, Gainesville, FL 32614-7100.

USA and southern Canada within about ten years. It apparently is restricted to northern states (Voegtlin 1988). The honeysuckle witches' broom aphid completes its entire life cycle on honeysuckle, to which it causes major damage in North America. The coriander aphid has been found only in Florida and California.

DESCRIPTION: Coriander aphids are yellow-green in color, dusted with greyish wax. They have short, dusky, slightly swollen, siphunculi that are about twice as long as wide. They form dense and often damaging colonies on leaves, heads, and stems of their host plants. In Florida, several other species colonize the common hosts of the coriander aphid. These include various *Aphis* spp., the green peach aphid (*Myzus persicae* (Sulzer)), and the rice root aphid (*Rhopalosiphum rufiabdominalis* (Sasaki)). Both green peach aphids and the *Aphis* spp. have siphunculi that are much longer than twice their diameter. Rice root aphids live underground.

LIFE HISTORY: In its native land of Central Asia, the life cycle of the coriander aphid is similar to that of other host-alternating aphids. Overwintering eggs occur on *Lonicera nummulariifolia* Jaub. & Spach. and other *Lonicera* spp. (Remaudière and Halbert 2000). A fundatrix (or stem mother) hatches from the egg in the spring. Her offspring are parthenogenetic, winged-female spring migrants. They colonize summer host plants in the family Umbelliferae. During the summer, there are many generations of aphids. All individuals are parthenogenetic females, but they can be either winged or wingless, depending on host plant quality and crowding in the colony. If host plant quality declines, or the colony becomes crowded, winged individuals form that can establish colonies on new plants. In the autumn, parthenogenetic female fall migrants occur in response to cooler temperatures and/or short days. These return to the winter hosts, where they give birth to egg-laying females. Similarly, the summer colonies produce winged males in the fall. The males also return to the winter host plants, where they mate with the egg-laying females to produce the overwintering eggs.

In Florida, the overwintering part of the life cycle probably will not occur. More likely, colonies of summer forms, both winged and wingless, will persist on Umbelliferae throughout the year.

DISTRIBUTION: Coriander aphids probably are native to Central Asia, where they have been found on their primary host plants. Current worldwide distribution includes Central Asia, the Mediterranean area, the Indian Subcontinent, Africa, and California and Florida in the United States.

HOSTS: Species of *Hyadaphis* are associated with Caprifoliaceae (winter hosts) and/or Umbelliferae (summer hosts). The coriander aphid has been found in Florida only on its summer host plants. Florida hosts to date include coriander, dill, fennel and parsley (*Petroselinum crispum* (P. Mill.) Nyman ex A.W. Hill). Other reported hosts include celery (*Apium graveolens* L. var. *dulce* (Miller) DC.) and carrots (*Daucus carota* L. var. *sativus* Hoffm.). There are records of sporadic colonies on miscellaneous hosts outside the Umbelliferae, including horsemint (*Mentha longifolia* (L.) Huds.), spiny pigweed (*Amaranthus spinosus* L.), soybean (*Glycine max* (L.) Merr.), and blond psyllium (*Plantago ovata* Forssk.) (Blackman and Eastop 1984; Kumar and Sagar 1994). The coriander aphid is considered a key pest of coriander in India in the spring (Kumar and Sagar 1994).

SURVEY AND DETECTION: The best way to find coriander aphids is to inspect their common host plants, including coriander, dill, fennel, parsley, and other Umbelliferae. There is a danger that coriander aphids could be distributed widely if they became established in nurseries that produce small pots of herbs for supermarkets, so these types of businesses would be a priority for inspection.

CHEMICAL CONTROL: Consult the local University of Florida extension personnel for control of coriander aphids. Available materials may be limited because the host plants of coriander aphids are minor crops.

LITERATURE CITED:

- Blackman, R.L. and V.F. Eastop. 1984.** Aphids on the world's crops. J. Wiley and Sons, Chichester. 466 p.
- Ivanovskaya, O.I. 1977.** [Aphids of western Siberia], Volume II. Novosibirsk. (In Russian). 328 p.
- Kadyrbekov R. X. 1990.** [Aphid fauna of trees in natural ecosystems of southeastern Kazakhstan]. Kazakhstan Academy of Sciences, Institute of Zoology, Almaty. 38 p.
- Kumar, N. and P. Sagar. 1994.** Seasonal history and host range of the coriander aphid, *Hyadaphis coriandri* (Das). Journal of Research, Punjab Agricultural University 31: 283-284.
- Miyazaki, M. 1971.** A revision of the tribe Macrosiphini of Japan (Homoptera: Aphididae, Aphidinae). Insecta Matsumurana 34: 1-247.
- Raychaudhure, D.N., A.K. Ghosh, R.C. Basu, M.R. Ghosh, M Chatterjee, S. Chakrabarti and P.K. Pal. 1980.** Aphids of North-east India and Bhutan. The Zoological Society, Calcutta. 521 p.
- Remaudière, G. and S.E. Halbert. 2000.** *Hyadaphis coriandri* (Das), espèce hétéroecique distincte de *H. tataricae* (Aizenberg) [Homoptera, Aphididae]. Ann. Soc. Entomol. Fr. 36: 157-163.
- Remaudière, G. & M. Remaudière. 1997.** Catalogue des Aphididae du Monde. INRA. Versailles. 478 p.
- Shaposhnikov, G. CH. 1964.** Suborder Aphidinea, pp. 616-799. In G. Ya. Bei-Bienko [ed.], Keys to the insects of the European USSR Vol. I Apterygota, Palaeoptera, Hemimetabola. Israel Program for Scientific Translations, Jerusalem.
- Voegtlin, D.J. 1988.** *Hyadaphis tataricae* (Homoptera: Aphididae): 10 years after its introduction into North America. Proceedings of the Entomological Society of Washington 90: 256-257.