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First record of *Diaphorina citri* Kuwayama (Hemiptera: Psyllidae) from the Sultanate of Oman

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Mexican acid lime, *Citrus aurantifolia* (L.) Swingle (Rutaceae), is the most popular citrus species in Oman and is the second most important economic crop. The cultivated area of acid lime in the period of 2001-2004 ranged between 4460-2880 feddans (1 feddan = 1.038 acres = 0.420 hectares), with an annual production of about 8160-5875 metric tonnes (Anonymous 2004).

Previous surveys did not reveal any record of psyllids on citrus in Oman. However, the most important psyllid species attacking citrus, *Diaphorina citri* Kuwayama (Hemiptera: Psyllidae), was recently observed on *C. aurantifolia*. It was observed first at Barka (Al-Batinah region) on 25 September 2005. Since then it was regularly observed in most citrus orchards of the Al-Batinah region. *Diaphorina citri* was found to be present in three locations in the Sultanate; Barka (23.709°N 57.887°E), Al-Rustaq (23.391°N 57.424°E) in the Al-Batinah region, and Masirat Al-Rawajeh (23.044°N 57.670°E) at Jabal Al-Akhdar near Nizwa in the A' Dakhliyah region (Figure 1).

In Barka, a D-vac suction trap was used to collect psyllids in the period from November 2007 to April 2008 in fortnightly visits to 10 acid lime trees.The total number of psyllids collected per monthly sample from the months of November 2007 through April 2008 was 560, 420, 1150, 103, 2454 and 2100 adults respectively. Sixty adults were collected by sweep net from Al-Rustaq on 19 June 2007 and one adult from Masirat Al-Rawajeh on 11 July 2007.

All stages of *D. citri* were observed in the citrus fields. Acid lime trees were found to be infested with clear symptoms of *D. citri* at Barka (Figure 2). Symptoms of damage include malformation and distortion of leaves (Figure 3). Nymphs and adults (Figure 4) were found feeding on acid lime leaves, and sooty mold had developed from the honeydew secretion of the psyllids (Figure 5).

Diaphorina citri was reared successfully on *C. aurantifolia* and orange jasmine (*Murraya paniculata* (L.) Jack), and all the above-mentioned symptoms were observed on *C. aurantifolia* in the laboratory at Rumais.

The importance of *D. citri* lies in its direct feeding that result in the distortion of leaves and even the death of new growth. But most importantly, it is a vector of citrus huanglongbing (HLB), or citrus greening disease (Halbert and Manjunath 2004) caused by three species of bacteria, *Candidatus* Liberibacter spp. From the Arabian Peninsula, *D. citri* has been reported from Saudi Arabia, Yemen, and very recently from United Arab Emirates (Wooler et al. 1974; Burckhardt 1981, 1985; Bové 1986; da Graca 1991; Burckhardt 2008). Also, it has been reported from eastern Iran (Bové et al. 2000). *Candidatus* Liberibacter asiaticus and *Candidatus* Liberibacter africanus have been reported in Saudi Arabia and Yemen (Toorawa 1998).

To our knowledge, this is the first report of *D. citri* in Oman. We believe its introduction occurred some time before its detection in 2005 because of its wide distribution in the Sultanate. Therefore, moni-

toring for citrus huanglongbing should start in the Sultanate as it has been detected in the neighboring countries such as Saudi Arabia and Yemen (Toorawa 1998, Halbert and Manjunath 2004). Monitoring can start by inspecting citrus trees and looking for disease symptoms, which include yellow shoots, asymmetrical mottling, and chlorosis of the leaves (Capoor et al. 1974), and by using molecular approaches such as PCR, strain-specific DNA probes, electron microscopy, and ELISA tests for detection of the bacteria (Roistacher 1991, Garnier and Bové 1993, Halbert and Manjunath 2004).

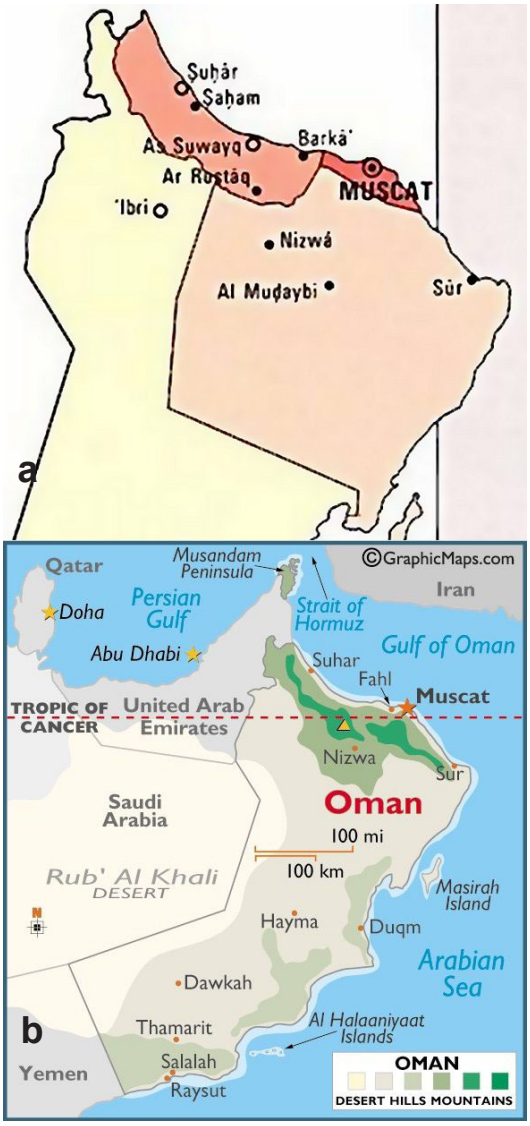

Figure 1a,b. Distribution of *D. citri* in the Sultanate of Oman (map1b provided by: www.worldatlas.com).

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Figure 2-5. *Diaphorina citri* and tree damage. **2)** *D. citri* infested tree (Barka). **3)** Distorted acid lime leaves. **4)** Adult of *D. citri* (lateral view). **5)** Sooty mold on acid lime leaves.

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