A New Host Plant, Chrozophora tinctoria (L.) Rafin. (Euphorbiaceae), for Phycita diaphana (Staudinger, 1870) (Lepidoptera: Pyralidae) from Turkey

Cumali ÖZASLAN1* Kesran AKIN2 Halil BOLU1 Mustafa ÖZDEMİR3

1Dicle University, Faculty of Agriculture, Department of Plant Protection, 21280 Diyarbakır, TURKEY
2Bitlis Eren University, Faculty of Arts and Sciences, Department of Biology, 13000, Bitlis, TURKEY
3Plant Protection, Central Research Institute, 06172 Yenimahalle, Ankara, TURKEY
e-mails: *cumali.ozaslan@dicle.edu.tr; kesran@gmail.com; besni@dicle.edu.tr; ozdemir_m@lycos.com

ABSTRACT

The study was carried out to determine the associated insect species feeding on Chrozophora tinctoria (L.) Rafin. (Euphorbiaceae), growing in cornfield, vegetables and cotton fields of Diyarbakır and Adıyaman provinces in 2014. As a result of this study, Phycita diaphana (Staudinger, 1870) (Lepidoptera: Pyralidae) adults were reared from both provinces. P. diaphana is recorded firstly in Diyarbakır and Adıyaman provinces. In addition, C. tinctoria is a new host of P. diaphana in the world.

Key words: Phycita diaphana, Chrozophora tinctoria, new host plant, Turkey.

INTRODUCTION

Pyralidae comprises of the 3. largest family of Lepidoptera with approximately 16,500 described species, but a probable fauna of at least 25,000 species worldwide (Heppner, 2008). While Pyraloids are represented by 851 species in Europe, the number of pyraloid species in Turkey is 650 (Karsholt and Razowski, 1996; Koçak, 2014).

Phycita diaphana was described by Staudinger (1870) from Malaga, Spain. Currently, it is known from Turkey (Koçak, 2014), Spain, Portugal, France, Greece, Syria, Iraq, Israel, Morocco, Algeria, Tunisia, Egypt, Reunion Island and Mauritius (Leraut, 2014). Koçak (2014) reported the presence of this species in Turkey, but gave no information about it. So far, its larval food plant has been reported as Ricinus communis (Euphorbiaceae) (Robinson et al., 2010).

Chrozophora tinctoria (commonly known as dyer’s croton, giradol, or turnsole) is a plant species native to the Mediterranean, the Middle East, India, Pakistan, and Central Asia. C. tinctoria is an annual plant and is the only species of the Chrozophora genus in Turkey. This plant, which belongs to the family Euphorbiaceae, is called the turnsole plant. It is widespread in agricultural areas and native habitats in different
parts of Turkey (Uluğ et al., 1993; Tepe, 1997; Özer et al., 1999; Başlar, 2000; Özaslan, 2011; Özaslan and Bükün, 2013).

MATERIALS AND METHODS

Larvae of *P. diaphana* were collected from *C. tinctoria* leaves and flower buds growing in cornfield, vegetables and cotton fields in the Diyarbakır and Adıyaman provinces in the Southeastern Anatolia Region of Turkey, during September and October 2014, and were brought to the laboratory for rearing. The larvae were reared in insect-rearing plastic boxes under controlled laboratory conditions at 26±1°C, a relative humidity of 65±5%, and illumination of 3500 lux for 16 hours per day. The larvae were observed by daily. Pupae were placed in separate petri dishes containing moistened cotton until the adult moths emerged. *P. diaphana* was identified by the second author.

RESULTS

In this study, the larvae counts of *C. tinctoria* growing in cotton, corn, vegetable fields, larvae cultured in the laboratory and adult and pupae count obtained from laboratory cultured larvae are represented in Table 1.

Table 1. The number of *Phycita diaphana* larvae, pupae and adults

<table>
<thead>
<tr>
<th></th>
<th>Adiyaman</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Larvae</td>
<td>Pupae</td>
<td>Adults</td>
</tr>
<tr>
<td>Cotton</td>
<td>39</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Corn</td>
<td>28</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Vegetable</td>
<td>69</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>133</td>
<td>133</td>
</tr>
</tbody>
</table>

As a result of this study, *P. diaphana* (Staudinger, 1870) (Lepidoptera: Pyralidae) were reared from *C. tinctoria* growing in cornfield, vegetables and cotton fields of Diyarbakır and Adıyaman provinces. With this study *P. diaphana* is determined as first record for Diyarbakır and Adıyaman provinces and *C. tinctoria* is a new host record of *P. diaphana* in the world.

*P. diaphana* larvae was observed feeding on *C. tinctoria* leaves, flower buds and seeds, pupae and adults.

Material examined: Diyarbakır 37°36’N, 40°49’E; altitude, 670 m and Adıyaman 37° 46’N, 41° 80’E; altitude, 685 m.

Distribution: Malaga (Spain), Spain, Turkey, Portugal, France, Greece, Syria, Iraq, Israel, Morocco, Algeria, Tunisia, Egypt, Reunion Island and Mauritius (Staudinger, 1870; Koçak, 2014; Leraut, 2014).
A New Host Plant, Chrozophora tinctoria for Phycita diaphana

Distribution in Turkey: This is a new record of the species in Diyarbakır and Adıyaman. Koçak (2014) reported the presence of this species in Turkey, but gave no information on the host plant, place, or time of observation.

REFERENCES


Received: November 16, 2015 Accepted: June 07, 2016