گزارش شاهی ویرجینیایی (تیره کلمیان) از فلور ایران

لیلا ممی زاده و علیرضا نقی نژاد

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چکیده. در طول مطالعات فلوریستیک و پوشش گیاهی در بخش‌های مختلف منطقه هیرکانی (خزری) شمال ایران، گونه Lepidium virginicum (تیره کلمیان) برای اولین بار از ایران گزارش می‌گردد. علاوه بر نقشه پراکنش گونه در ایران، کلید شناسایی برای گونه به خوبی پیکسل‌ها دو ساله از سرده Lepidium از ایران ارائه می‌گردد.

واژه‌های کلیدی. آسیا، چلیپائیان، گیاه بیگانه، مازندران، مناطق شهری

Lepidium virginicum L. (Brassicaceae), a new record for the flora of Iran

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Abstract. In the framework of floristic and vegetation studies of different parts of the Hyrcanian region of northern Iran, Lepidium virginicum L. (Brassicaceae) is reported here for the first time for the flora of Iran. Along with a distribution map for the species, an identification key is provided for the nine annual or biennial species of Lepidium, already reported from Iran.

Keywords. alien plant, Asia, Cruciferae, urban areas, Mazandaran

INTRODUCTION

Lepidium is one of the largest genera of the Brassicaceae consisting of about 260 species distributed worldwide, except Antarctica. It is regarded as one of the most natural genera in the family due to having angustiseptate fruits and simple trichomes when they are present (Al-Shehbaz, 2017). Therefore, total number of annual Lepidium species occurring in territory of Iran reaches eighth. Two populations of Lepidium virginicum were collected in the urban areas of Babolsar, Mazandaran Province during a floristic and phytosociological investigation in the lowland and submontane Hyrcanian region. The species is hereby reported for the first time for Iran.

MATERIALS AND METHODS

Fieldwork was carried out in May-August 2017. The morphological features of the species were noted from the plant material collected during the field studies. The specimens were identified using botanical literatures of Iran and other areas (Boissier, 1867; Bush, 1939; Hedge, 1965, 1968;
Jafari, 1973; Al-Shehbaz, 1986; De Carvalho e Vasconcellos et al., 1993; Zhou et al., 2001; Al-
Shehbaz & Gaskin, 2010; Fakhr Ranjbari, 2017). All characters of the specimens were surveyed by
means of a stereomicroscope (Zeiss Stemi 2000-C). Digital herbaria of Vienna (W), Edinburugh (E),
Kew (K), Berlin (B) and Natural History Museum of Paris (P) were carefully assessed. The materials
recorded here were deposited in HUMZ.

RESULTS AND DISCUSSION


Type: Herbarium Linneaus No. 824.18 (lectotype
designated by Marais).

Mazandaran Province, Babolsar, on the road of
Babol to Babol, Imam Khomeini str., 36° 41’
18.05” N; 52° 39’ 02.55” E, -22 m a.s.l., 29 June
2017, L. Mamizadeh 8050-HUMZ.

Description

Annual herb, 15-40 cm long. Stems usually simple
from base, erect, branched above, puberulent with
antrorse/retrorse, sub-appressed indumentums,
0.07-0.2 mm long, deciduous in elder materials.
Basal leaves not rosetted, early deciduous, obovate
or spatulate. Cauline leaves shortly petiolate; leaf
blade ob lanceolate or linear, 1-3 cm ×2-5 mm,
attenuate or subcuneate toward base, leaf margin
tire to serrate, not lobed, antrorse puberulent along
margins and midrib and rarely elsewhere. Inflorescence
much elongated, with rather dense erect to ascending
flowers; rachis and pedicels are

<table>
<thead>
<tr>
<th>Characters</th>
<th><em>L. virginicum</em></th>
<th><em>L. ruderale</em></th>
<th><em>L. pinnatifidum</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaves</td>
<td>lower leaves lyrate</td>
<td>lower leaves bipinnate</td>
<td>basal leaves pinnatifid</td>
</tr>
<tr>
<td>Petals</td>
<td>present, white, obovate-spatulate</td>
<td>absent</td>
<td>rudimentary (sometimes absent)</td>
</tr>
<tr>
<td>Fruit</td>
<td>orbicular, winged at apex, apical notch 0.2-0.5 mm</td>
<td>orbicular-elliptic, winged at apex, apical notch 0.1-0.2 mm</td>
<td>elliptic-oval to sub-elliptic, wingless, hardly emarginated</td>
</tr>
<tr>
<td>Style</td>
<td>0.1-0.2 mm, included in apical notch.</td>
<td>obsolete (or 0.1 mm, included in apical notch)</td>
<td>as long as notch or longer</td>
</tr>
<tr>
<td>Seed</td>
<td>reddish brown, winged</td>
<td>dark yellow, wingless</td>
<td>dark yellow or dark rufous, wingless</td>
</tr>
</tbody>
</table>

Seed reddish brown, winged dark yellow or dark rufous, wingless

dullish yellow and wingless in *L. pinnatifidum* and *L. ruderale*. *L. virginicum* is closely related and
distinguished from the latter by having petals, orbicular
fruit and lyrate basal leaves (Table 1; Figs. 3). It
also differs from *L. pinnatifidum* by having smaller
style, not amplexicaule leaves, 2-4 stamens. Based
on a morphometric analysis of some species of this
section, quantitative characters of density of the
pedicels, length of stem hair, width of the silicle,
width of the lower part of the apical notch, length of
the beak and width of the wing in the basal part of
the seed are regarded as diagnostic characters to
distinguish *L. virginicum* from the most closely
related species (Wąsowicz & Rostański, 2009).

Table 1. Comparison between *Lepidium virginicum* and its most similar species.
Distribution and habitat

Lepidium virginicum is native to N America and has been introduced and widely naturalized elsewhere (De Carvalho e Vasconcellos et al., 1993; Zhou et al., 2001). In Europe, this is one of the most widespread alien plants occurring in more than 80% of all European countries (Pyšek et al., 2009). The distribution of the species is still expanding (e.g. Protopopova et al., 1994; Ilyinska, 2014; Stoyanov & Vladimirov, 2015). The nearest recorded localities of the plant to Iran are NE Turkey (Davis et al., 1988) and Pakistan (Jafri, 1973).

**Phenology.** Flowering and fruiting from May to July.

![Fig. 2. Distribution map of Lepidium virginicum in Iran (●).](image)

![Fig. 3. Inflorescence (left) and seeds (right) of Lepidium virginicum.](image)
Determination key for annual/biennial Lepidium species of Iran

1-Fruits distinctly costate………………………………………2
2-Fruits without distinct veins……………………………………3
2-Fertile stamens 6…………………………L. squamatum
3-Fertile stamens 2…………………………L. didymum
4-Fruits 2.5–3 mm long, cotyledons entire…L. aucteri
5-Fruits 5–6 mm long, cotyledons trifid…L. sativum
5-Stems with prominent turbinate swellings at nodes……………L. vesicarium
6-Stems not as above…………………………………………6
7-Cauline leaves ovate–orbicular, flowers yellow………………L. perfoliatum
8-Cauline leaves oblong–lanceolate, flowers white……………………L. campestre
9-Fruits ovate, petals absent…………………L. ruderale
8-Fruits orbicular, petals present………L. virginicum

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