

A New Record *Physalis angulata* L. (Solanaceae) for the Flora of Syria

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Abstract

Introduction: A new species, *Physalis angulata* L. (Solanaceae) is reported for the first time for the flora of Syria.

Methods: The specimens were collected from crop fields in many districts belong to Lattakia Province such as Tishreen University in the city center, Restin, Qabu Sukas, Ras Al-Basseet during the study flora of Lattakia in 2011.

Results and Conclusions: The genus *Physalis* recorded in Syria by Post and Muttered by two species *P. alkekengi* and *P. peruviana* which were previously cultivated by farmers

INTRODUCTION

The genus *Physalis* has wide global distribution with about 90 species [1], but has limited distribution in the Arab countries, where it is absent in many countries such as Saudi Arabia, Kuwait, Sudan [2, 3]. In Iraq Chakravarty [4] recorded only one species *P. alkekengi*, while Al-Ellgi and Al-Samarraei [5, 6] recorded two species, *P. alkekengi*, and *P. angulata*, but the genus was lacking from the flora of Iraq according to check lists prepared by Al-Rawi and Chakravarty [7], Rechinger [8], Ridda and Daood [9]. Latter Al-Ellagi [10] recorded *P. angulata* for the first time for the flora of Iraq. Andrews [11] has recorded two species *P. minima* and *P. angulata* in Sudan, while Bautop [12] recorded *P. alkekengi* in the flora of Turkey. Gonen et al. [13] added *P. angulata* for the first time to flora of Turkey, latter Bukun et al. [14] recorded *P. philadelphica* for the first time to the flora of Turkey. Tackholm [15] recorded presence of *P. angulata* in Egypt.

The genus *Physalis* reported in Lebanon and Syria by two species *P. alkekengi* and *P. peruviana* [16, 17]. Mahklouf and Layka [18] collected specimens of the genus *Physalis* and published it as a genus (*Physalis* sp) without final decision to the species because of lack of literatures and taxonomic keys for the genus *Physalis* at that time. In this research it has been identified as *P. angulata*, there for it added to the flora of Syria for the first time

DESCRIPTION OF SPECIES

Family Solanaceae

Physalis angulata L., Sp. Pl. 183. (1753) (Figs 1, 2, and 3). Annual herbs with tap-roots. Stems 20-50 cm tall, erect, irregularly ribbed, more or less dichotomously branched from base or above, sometimes decumbent, glabrous or with a few short addressed hairs especially on younger parts. Leaves simple, alternate, petiolate, variable, principal blades 4-10 × 3-8 cm, ovate to ovate lanceolate or broadly to narrowly elliptic,

sometimes oblong, margins deeply and irregularly toothed, glabrous or rarely with sparsely addressed hairs, petioles 1-4 cm long. Flower solitary, auxiliary, regular, about 5 cm across. Pedicels 0.5-4 cm, 2-4.5 cm in fruit. Calyx 3-5 mm long, gamosealous, lobes 1-3 mm. Fruiting calyx 20-35 mm long, inflated, 10 angled or 10 ribbed, with reticular veins. Corolla yellowish, gamopetalous, infundibular-rotate, 4-10 (-12) mm long with indistinct purple-brown spots at the center. Stems 5, free, unspirally, anthers bluish or violet, 2-2.5 mm; filaments slender, 3-4 mm. Ovary superior, with two united carpels. Berry globular, 10-15 mm in diameter, smooth, covered with inflated fruiting calyx, seeds many, yellowish, flattened, ovate or broadly elliptic, sub smooth. Flowering time: September–November in Syria.



Figure 1: Habit of *P. angulata*



Figure 2: Flowers and Fruits



Figure 3: Fruits Showing Fruiting Calyx

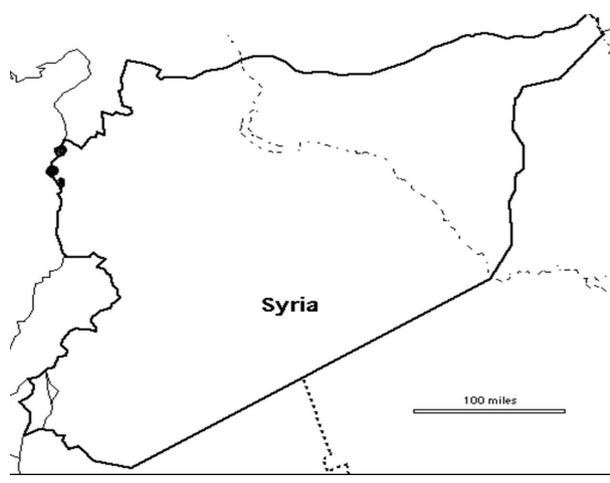


Figure 4: Distribution of *P. angulata* in Syria

METHODS

Plant specimens were collected from Tishreen University, Restin, Qabu Sukas, Ras Al-Basseet during the study Flora of Lattakia in 2011 (Fig 4). All places of collection are belonging to Lattakia Province, the specimens were deposited at the herbarium of the Department of Botany, Faculty of Sciences, Tishreen University, Lattakia-Syria.

RESULTS AND DISCUSSION

The genus *Physalis* recorded in Syria by Post [16] and Moutterede [17] by two species *P. alkekengi* and *P. peruviana* which were previously cultivated by farmers. Makhoulf and Layka [18] collected specimens of the species under study and were identified as a genus *Physalis* sp without determining the species.

In this work the specimens were re-described and compared with closely related species recorded in the neighboring countries, *P. philadelphica* [14] and identified as *P. angulata* which differentiated from *philadelphica* by the following key characters [19].

+ Corolla 4–10 mm long, infundibular–rotate to tubular–campanulate, unmarked or bearing light spots at the center, slightly or not contrasting, anthers 2–2.5 mm, untwisted or scarcely twisted after anthesis, berry yellow, 8–15 mm wide, flowering calyx 3–5 mm long (*angulata*)

- Corolla 7–15 mm long, rotate to broadly campanulate, with 5 dark, strongly contrasting spots at the center, Anthers 2.5–4 mm long, strongly twisted after anthesis, berry usually purple or purple streaked, 12–40 mm wide, flowering calyx 5–7 (10) mm long (*philadelphica*)

P. angulata distributed naturally in central and south America and India as well as some states of the USA [19]. *P. angulata* was identified as *P. lanceifolia* in 1951 [20]. According to Gleason [21] *P. pendula* and *P. angulata* were identified as two different species in 1958 [21]. Three varieties of *P. angulata* were recorded by Waterfall [22] in 1970, which are var. *angulata*, var. *lanceifolia* and var. *pendula*. *P. pendula* were recorded as the var. *angulata* in the eastern and southeast of U.S. in 1986 [23]. Finally *P. lanceifolia* and *P. pendula* were recorded as synonyms of *P. angulata* in 1994 [24].

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None declared.

CONFLICTS OF INTEREST

The authors declare that they have no conflict of interests.

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