
Research Article

A new record in the Flora of Haryana, India: *Oenothera laciniata* Hill (Onagraceae)

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Abstract: A new record *Oenothera laciniata* Hill of the family Onagraceae Juss. was recorded during the recent floristic survey in Haryana, India. The species was collected from the semi-arid habitat of Pataudi tehsil, District Gurugram, Haryana and specimen was deposited in the herbarium of Wildlife Institute of India (WII), Dehradun. The species exhibits distinct morphological features, differentiating from its closely related taxa particularly *O. rosea* Aiton., and *O. affinis* Cambess. The plants formed rosette with pinnatifid leaves and set seed in early summer. *O. laciniata* had previously been documented as an addition to the flora of Rajasthan and the northwest plains (Delhi). The record from the Haryana extends known range of exotic taxon in northwest India and enhances more comprehensive assessments of the state's plant diversity. The detailed description, photographs and location map of the species has been given for identification and further exploration.

Keywords: Additions, Cutleaf evening primrose, Naturalized species, Plant diversity

Introduction

Haryana is situated in Indo Gangetic plains of Northern region of India. This small state is characterized by semiarid to sub humid climate, fertile agricultural land and rich floral diversity. The whole state of Haryana is divided in 3 different agro-ecological zones exhibiting its ecological diversity (Bansal et al., 2025). Geographically the state of Haryana lies between 74.27 and 77.36E longitude and 27.39 and

30.55N latitude. The total area of state is approx. 44,212 sq km (Jain et al., 2000; Kumar, 2001 Balkrishna, 2018). The Gurugram district lies in southern part of Haryana and characterized by fine to coarse grained sandy type of soil, hot semi-arid climate and the elevation of Gurugram district varies from 225 to 275 meter above mean sea level (MSL) in plains and the hill range between 275 to 226 meter above MSL and annual rain fall is approx. 596 mm (Malik et al., 2010). Despite of xeric environment and less rainfall the Gurugram and nearby district have good number of floristic elements. During the field survey in southern part of Haryana a new species of family Onagraceae was reported. The Onagraceae family, also known as “Willow herb or Evening Primrose family” and is distinguished by *Oenothera* type of embryo sac. This family is represented by 18 genera and around 650 species worldwide and in India 46 species belong to 4 genera. It is a small family represented by only few species in Haryana with 3 genera and 7 species (Jain et al., 2000; Kumar; 2001 Balkrishna, 2018; Malik et al., 2010; Sharma et al., 2021). On critical examination the reported specimen was recognized as genus *Oenothera* and finally identified as *Oenothera lacinata* Hill. The species under consideration here was collected from Pataudi region of Gurugram district of Haryana. A brief description of the species along with relevant information is presented here in this paper.

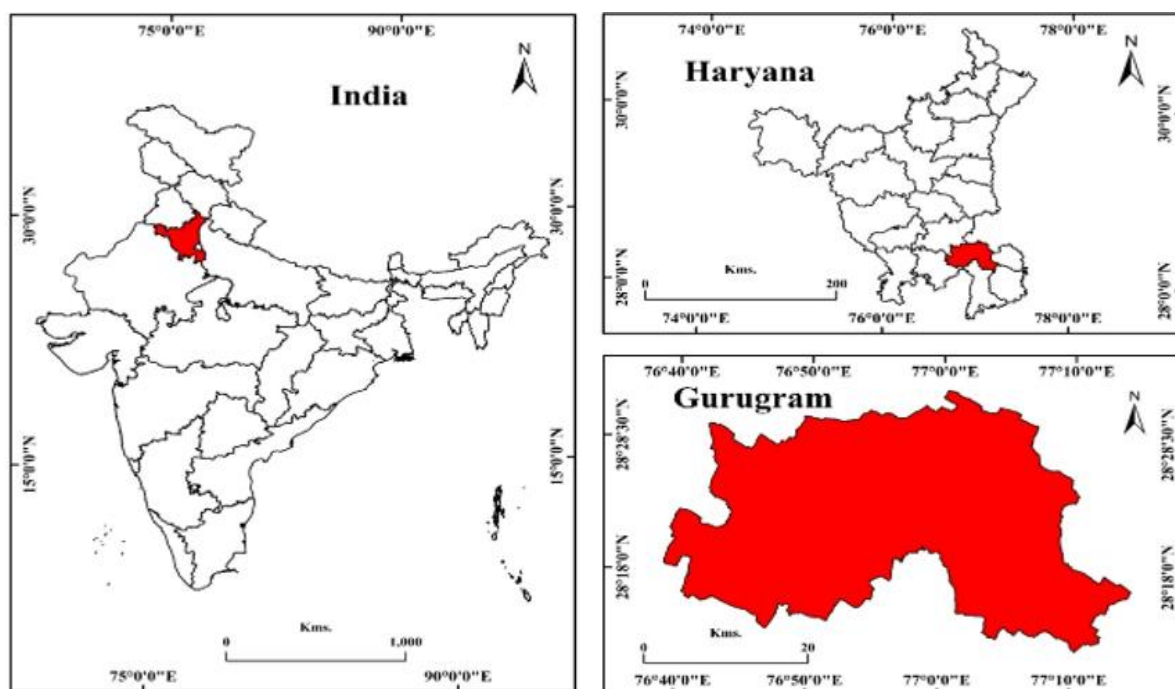


Figure 1: Map showing the distribution of *O. lacinata* from Januala, Gurugram region, Haryana, India

Materials and Methods

The plant under consideration was found in the village Januala, tehsil Pataudi of district Gurugram. The location coordinates of the area extend from latitude 28.356043N, longitude 76.810378E and altitude is 233 meter as shown in the Figure 1. Plant specimen was collected in flowering stage and its characters were recorded like plant habit, habitat & morphology. The preliminary identification was made by comparing the specimen with the online databases such as Plants of the world Online (POWO), eFlora of India, World Flora Online, and International Plant Name Index (IPNI). Identification of the collected specimen was carefully confirmed with the help of taxonomic keys, relevant published literature and

comparing with online herbarium specimen (POWO). Thorough study of the existing literature on flora of Haryana (Jain et al., 2000; Kumar; 2001 Balkrishan, 2018; Sharma et al., 2021; et al., 2025; Verma et al., 2025; Naithani and Chandra, 2022, Singh and Singh, 2014; Kavita et al., 2026) revealed that this species has not been reported from Haryana in any of the earlier reports. The voucher specimen was prepared by using conventional herbarium techniques (Davies et al., 2023). It has subsequently been deposited in the herbarium of Wildlife Institute of India (WII) and accession number was assigned WII013397 as shown in Figure 3.

Distribution

Oenothera laciniata Hill. is native to eastern part of North America and also distributed in South America, South Africa, Europe, Korea, Japan, China (Amini and Zare, 2003). In India, its occurrence has been recorded in different regions such as north western plains (Uttar Pradesh (Khan et al., 1984); Southern India (Tamil Nadu, Kerala (Sasidharan, 2004); Punjab and Delhi (Kaur et al., 2018) and Rajasthan (Gena et al., 2018). From Haryana this species was frequently observed in different parts of Pataudi tehsil of Gurugram district along with other crops like Wheat, Brassica and many other floriculture crops.

Results

Taxonomic treatment of *Oenothera laciniata* Hill

Oenothera laciniata Hill, Syst. Veg., 12 (App): 64, t.10.1767 (Hort. Kew.172 940, t.6. 1768); Nayar et al. 2011; Munir et al. 2017; Mahklouf, 2016; Gena et al. 2018; Kaur et al. 2018; *Fl. Peninsular*. 2019.

Synonyms: *Oenothera sinuata* L. Mant.PI.2:228. (1771). *Raimannia laciniata* (Hill) Rose ex Britton & A. Brown.

English name: Cutleaf evening primrose

Annual, prostrate and procumbent herb found in open, grassland, semiarid region. Leaves simple, alternate, pinnately hairy rosette, basal leaves petiolate and forming a rosette, cauline leaves sessile to shortly petiolate and narrowly lanceolate to elliptic (2–10 × 0.5–3.5 cm), margin are deeply lobed to dentate, apex acute, rounded lobes, or sometimes merely wavy-edged or toothed. Stem simple, branched, and hairy. Inflorescence terminal, lax, open leafy spike. Flower ebracteate, sessile, tetramerous, with 4 yellow heart shaped petals up to 1cm long that become pinkish orange after pollination. Calyx 4 and green. Stamens 8, linear, exserted and lobes are pale yellow. Gynoecium tetra-carpellary, syncarpous, and ovary inferior; Fruit cylindrical capsule and up to 4 cm long. Seeds dark brown and arranged in two rows per locule. All morphological characters are represented in photograph as shown in Figure 2 (Nayer et al., 2012; Gena et al., 2018)

Fl & Fr: March to September

Specimen examined

India, Haryana, Pataudi tehsil, Gurgram district, 28.356043N and 76.810378E. Aarti, WII013397, 04-04-2026.

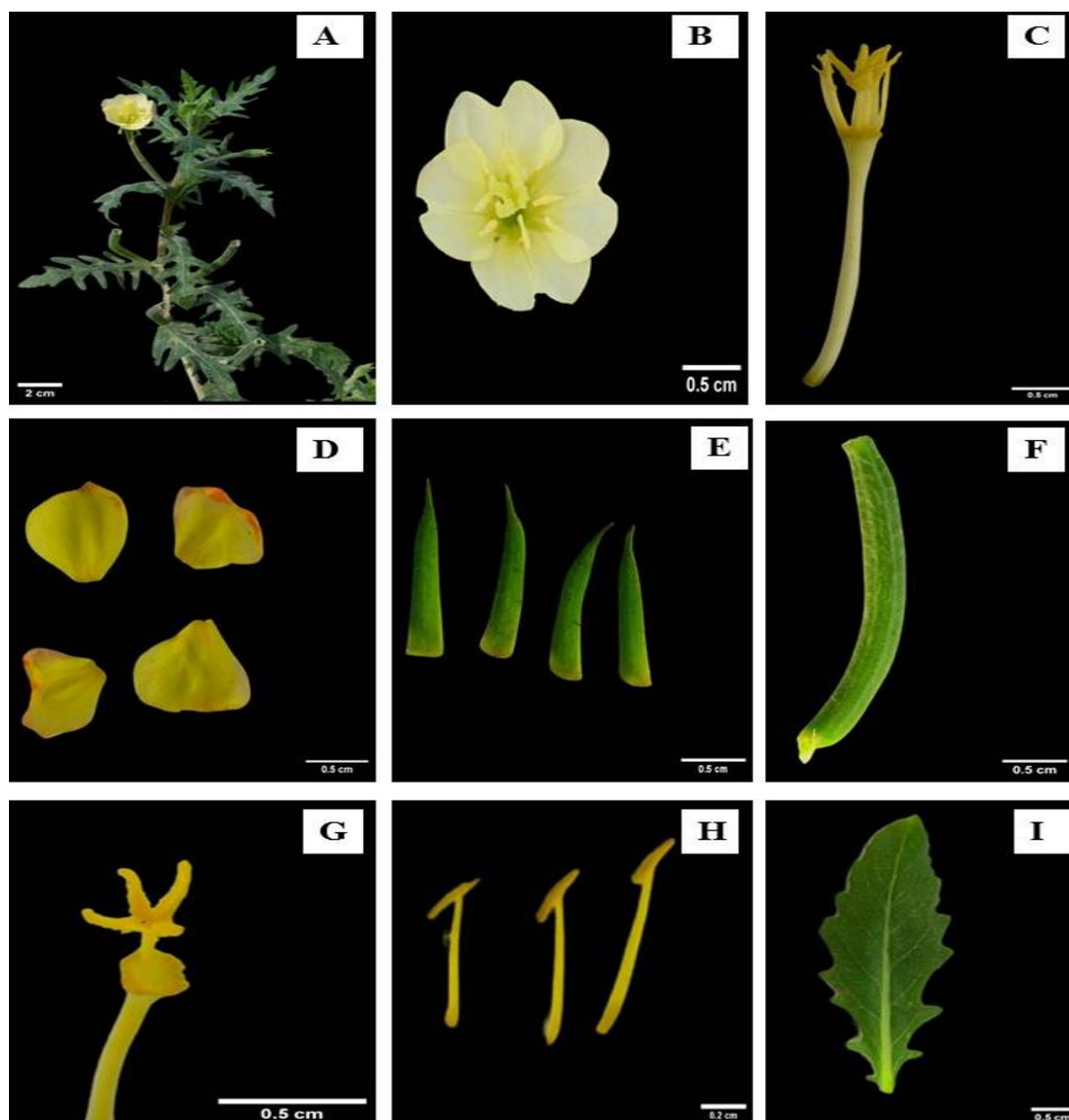


Figure 2: Plant parts of *O. laciniata* Hill (A) Whole plant, (B) Flower, (C) Monoecious condition, (D) Petal, (E) Sepal, (F) Fruit, (G) Lobed stigma, (H) Stamen and (I) Leaf

Ecology

The specimen was collected from cultivated fields and coexisting with some other rosette forming species such as *Tribulus terrestris* L., *Lepidium didymum* L., *Chenopodium murale* (L.) S.Fuentes, Uotila & Borsch and *Chenopodium album* L. Frequently occurrence of this species was observed in fields cultivated with ornamental crops indicating its potential to establish as a weed in the future.

Taxonomic key of the species found in Haryana

- 1a. Flower yellow, capsule cylindrical2
- 1b. Flower pink; leave ovate to lanceolate, glabrous; hypanthium 0.4- 0.8 cm.....
.....*Oenothera rosea* Aiton

2a. Leaves deeply pinnatifid, oblanceolate to elliptic, pubescent; hypanthium 1.5 to 3.5 cm; capsule cylindrical..... *Oenothera laciniata* Hill

2b. Leaves linear lanceolate and entire to undulate; hypanthium 8 to 12 cm
.....*Oenothera affinis* Cambess.

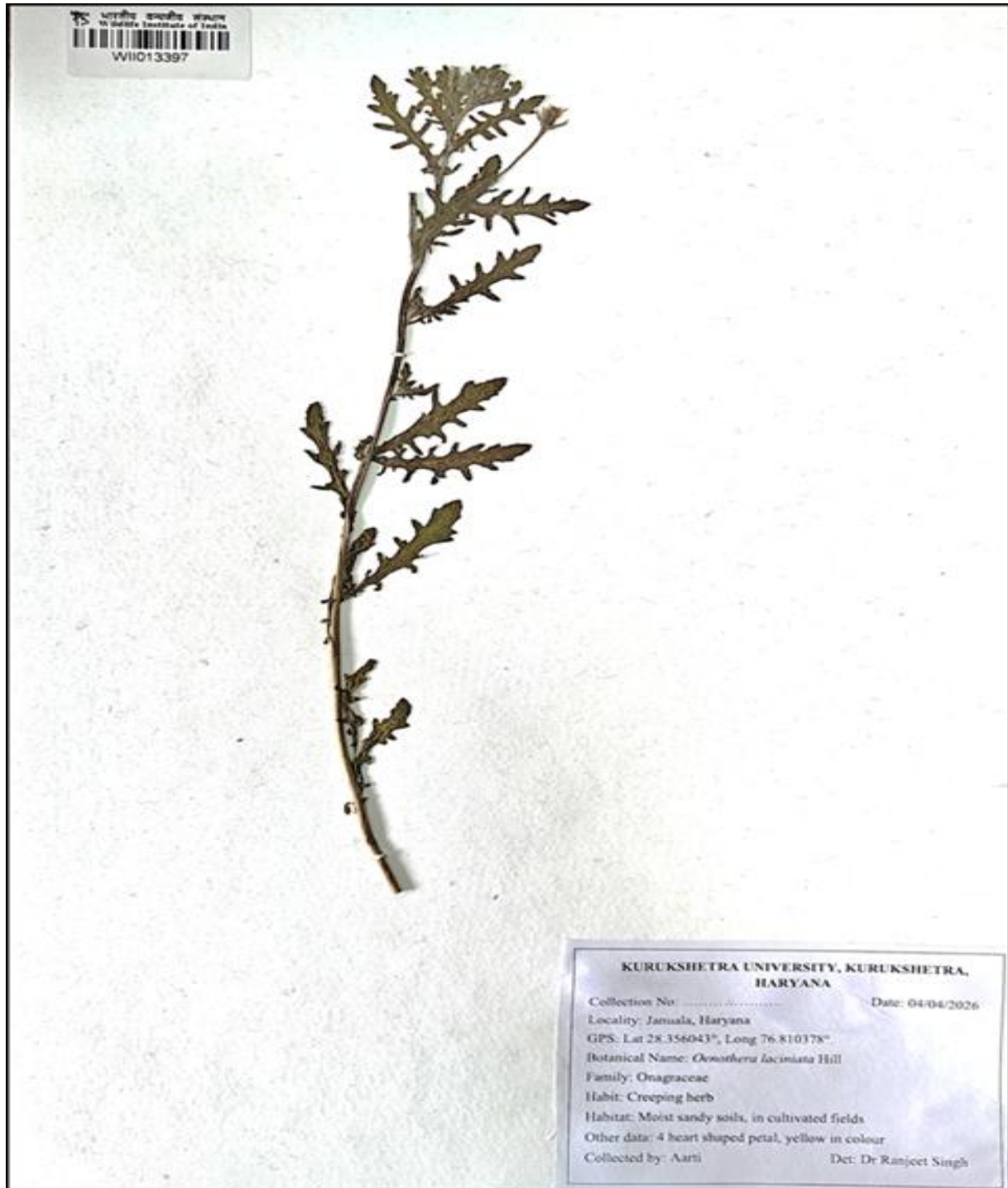


Figure 3: Voucher specimen of *O. laciniata* Hill

Discussion

The species has established itself in cultivated fields and other disturbed environments in many parts of India. Its presence in Delhi, Punjab, Rajasthan and now in Haryana shows that it is spreading at a good pace, particularly in wheat and brassica fields (Nayer et al., 2018). It is an important alien species which may be invasive in nature. It is necessary to monitor its spread in India as it may be a potential crop contaminant in near future as suggested by another researcher also (Mahklouf, 2016). The frequent occurrence of *O. laciniata* in cultivated fields in Haryana suggests its establishment under the suitable ecological conditions of the area.

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Conflict of Interest

The authors declare that they have no conflict of interests.

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