



## ***Sonchus palustris* (Asteraceae): An Addition to the Indian Flora**

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### **Abstract**

This manuscript presents the addition of *Sonchus palustris* to the flora of India discovered during a floristic exploration in Haridwar district, Uttarakhand state. A morphological description is proposed together with phenological, ecological and taxonomic notes.

### **Résumé**

Ce manuscrit présente l'ajout de *Sonchus palustris* à la flore de l'Inde découvert lors d'une exploration floristique dans le district de Haridwar, dans l'État de l'Uttarakhand. Une description morphologique est proposée accompagnée de notes phénologiques, écologiques et taxinomiques.

Key words: Asteraceae, flora of India, Haridwar, new plant record.

Mots clés : Asteraceae, flore de l'Inde, Haridwar, nouvel enregistrement.

## Introduction

*Sonchus* Linnaeus (793: 1753) consists of 98 species (Mabberley, 2008; POWO, 2024) native of Old World. In India, it is represented by 6 species: *S. arvensis* Linnaeus (1753: 793), *S. asper* (Linnaeus, 1753: 794) Hill (1769: 47), *S. brachyotus* Candolle (1838: 186), *S. jainii* Chandrabose, V. Chandrasekaran & N. C. Nair (149: 1984), *S. oleraceus* Linnaeus (1753: 794) and *S. wightianus* Candolle (1838: 187) (Mamgain & Rao, 1995; Kartikeyan *et al.*, 2009; 2020). During a field survey in Haridwar district of Uttarakhand state (fig. 1), the authors collected an uncommon plant which was not reported so far in the Indian floristic documentation notably Uniyal *et al.* (2007), Kartikeyan *et al.* (2009; 2020). The species identified as *Sonchus palustris* is reported for the first time for this country. The natural distribution area of this species was previously known from Europe to western Siberia and Iran.

A brief description, the phenology and a colored photo plate along with digital herbarium image of the plant are proposed here.

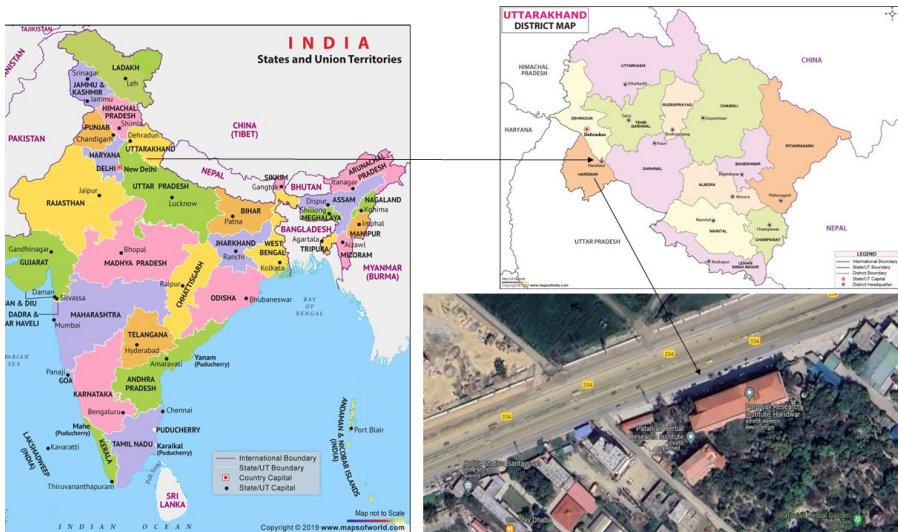


Figure 1: Map of the study region in Shantarshah, Haridwar

## Materials and Method

The vegetation survey of Haridwar district of Uttarakhand was conducted in four different seasons – winter, summer, monsoon and post-monsoon – during 2023-2024. The identification of collected plant samples have been done with the relevant literature like Hooker (1881), Duthie (1903-1905), Hajra *et al.* (1995), Uniyal *et al.* (2007) and Kartikeyan *et al.* (2009 ; 2020). Currently accepted botanical names have been used following IPNI (2024) and Chase *et al.* (2016). The voucher specimens were dried, pressed and mounted on herbarium sheets following Jain & Rao (1977) and deposited in Patanjali Research Foundation Herbarium (PRFH), Haridwar, Uttarakhand.

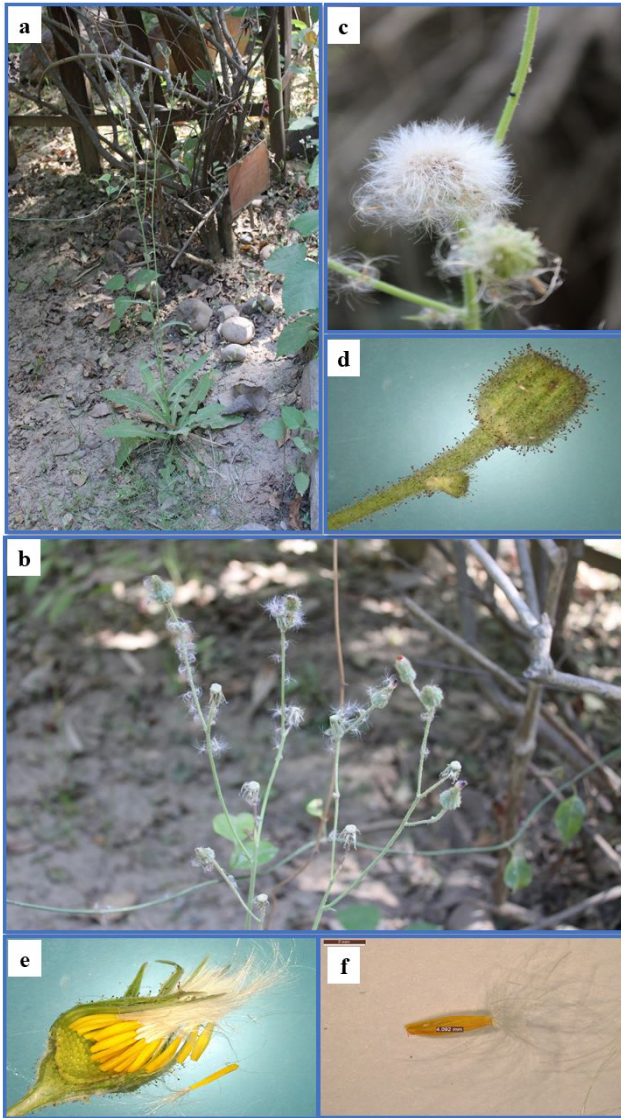
## Taxonomic treatment

*Sonchus palustris* Linnaeus, *Species Plantarum* 2: 793 (1753).

Material examined: Uttarakhand, Haridwar District, Shantarshah, 04/04/2024, Bhasker Joshi 5642 (PRFH).

**Description** (fig. 2 & 3): Perennial herb with hollow stems, 1-2.5 m tall; rhizome short, 3-4 cm thick; stem branched, ca. 3 cm across, base hard, sometimes woody. Basal leaves sessile, shallowly or deeply lobed, 15-30 × 8-18 cm, oblanceolate to lanceolate, glabrous, base sagittate, clasping, margin denticulate, apex acuminate. Middle leaves cauline, oblong to lanceolate or linear, 12-18 × 2-5 cm, bases auriculate, auricles lanceolate to linear, acute, margins sometimes pinnately lobed, lobes deltate to lanceolate or linear; lateral lobes if present 1-3 pairs, lanceolate, apex acute; terminal lobe triangular to triangular-lanceolate. Upper leaves reduced, linear-lanceolate to linear, base auriculate, finely toothed along the margin. Inflorescence corymbiform to paniculate-corymbiform, with many capitula, densely glandular hairy; capitula with many florets; peduncle slender, densely glandular hairy. Involucre campanulate, 1-1.5 cm long. Phyllaries linear-lanceolate, 0.1-0.2 cm wide, abaxially sparsely to densely setose to stipitate-glandular, apex acute to acuminate. Corolla ca. 1.2 cm long; ligules almost equaling tubes. Achene oblong to elliptic, 0.3-0.4 cm long, stramineous, weakly compressed, quadrangular in cross section,

ribs 4-5 on each face, surfaces transversely rugulose or tuberculate across and between ribs. Pappus 0.7-0.8 cm long, caducous.



**Figure 2:** *Sonchus palustris*. a – natural habitat; b – inflorescence fragment; c – mature head with pappus; d – glandular peduncle; e – showing arrangement of achenes; f – mature achene with pappus. Photos Amit Kumar.

5642

(P.R.F.)





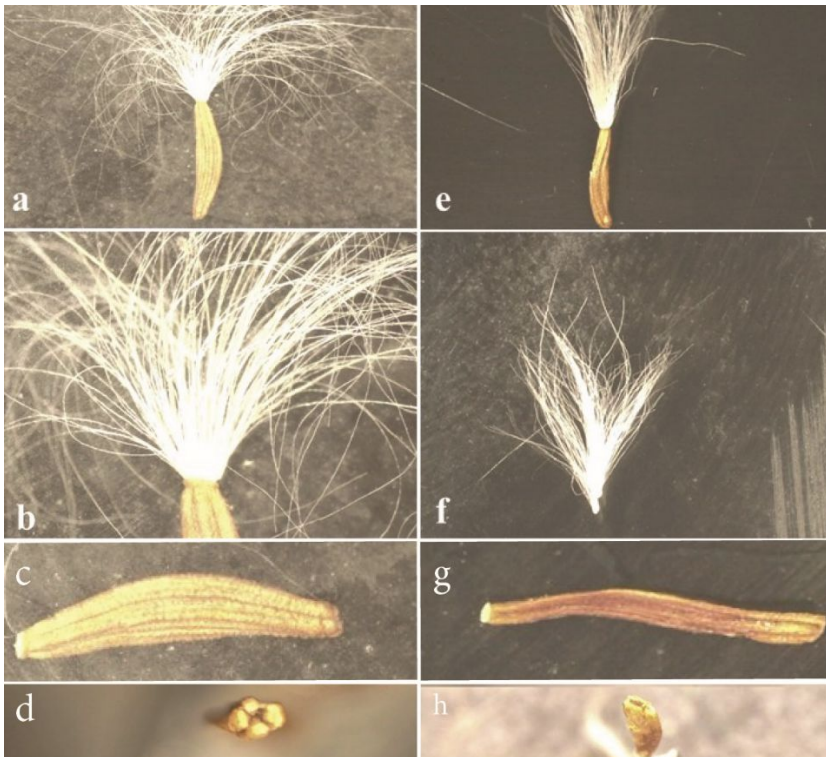
 Patanjali Research Foundation Herbarium Haridwar-249405	
Collection Number: 5642	
Botanical Name: <i>Sonchus palustris</i> L.	
Family: Asteraceae	Habit: Herb
Locality: Shantarshah	District/State: Haridwar, Uttarakhand, India
Date of Collection: 04.04.2024	Flowering and Fruiting: January-April
Ecological Notes: Common; found along the roadside and open places.	
Collector: Dr. Bhasker Joshi	Identified By: Anupam Srivastava 27/04/2024
Approved by: Acharya Balkrishna	

Figure 3: *Sonchus palustris*. (Herbarium PRFH).

**Distribution, ecology and phenology:** The native range of this species is Europe to west Siberia, Iran and India (Haridwar, Uttarakhand). In the state of Uttarakhand (India), *Sonchus palustris* is commonly found along the roadsides and in open places in the study area. Flowering and Fruiting occur from January to April.

**Note:** This plant is closely related to *S. wightianus* which widely occurs throughout India. *S. wightianus* has persistent pappus and achene elliptic in cross section, with weakly prominent main rib(s) on either face. *S. palustris* has caducous pappus and achene quadrangular in cross section, with very strongly prominent main rib on either face. The distinguished characters are microscopic and could not diagnose in the field. Also we are providing a photo plate (fig. 4) comparing achene of both two species and key to the species occurring in India.



**Figure 4: *Sonchus palustris* (left) & *Sonchus wightianus* (right).** a-e – achene with pappus; b-f – pappus; c-g – achene without pappus; d-h – cross section of achene. Photos Bhasker Joshi.

Key to the Indian species.

1. Pappus hairs heteromorphous.....*S. jainii*  
**1a** Pappus hairs homomorphous.....2
2. Achene compressed .....3  
**2a** Achene not compressed .....4
3. Leaves with acute auricles.....*S. oleraceus*  
**3a** Leaves with obtuse auricles.....*S. asper*
4. Synflorescence glabrous; outer phyllaries triangular-ovate to lanceolate.....  
.....*S. brachyotus*  
**4a** Synflorescence glandular; outer phyllaries linear-lanceolate .....5
5. Achenes with 5 main ribs .....*S. arvensis*  
**5a** Achene with 1 or 2 main ribs.....6
6. Achene quadrangular in cross section; pappus caducous ..... *S. palustris*  
**6a** Achene elliptic in cross section; pappus persistent..... *S. wightianus*

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