

Research article

Morpho-taxonomic study of two closely related species of the genus *Ageratum* L. (Compositae) from the state of Punjab, India

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Abstract: *Ageratum conyzoides* and *A. houstonianum* are alien species of the family Asteraceae documented from Faridkot, Punjab, India during the year 2024. These two species were differentiated from one another on the basis of morphological features. These species were confused in literature pertaining from the state of Punjab, India. Therefore, present study was planned from the study area. This information will be useful for accurate identification of these confused species of the genus *Ageratum*.

Keywords: Plant - Flora - Taxonomy - Morphology - Angiosperm.

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INTRODUCTION

Ageratum L. is a member of family Compositae (Asteraceae) which consists of about 30 species (Okunade 2002). *Ageratum* is a Greek word which means non-ageing. Tubular, white or blue corolla and absence of ray florets are the important features of this genera (Gill & Garg, 2016).

Few reports such as Bamber (1916), Nair (1978), Sharma (1990), Sidhu (1991), Sharma *et al.* (2009), Manhas *et al.* (2010), Rawat *et al.* (2013), Singh & Singh (2019), Kaur (2021), Dhillon (2024) are available about floristic of the state of Punjab, India. But there is no any clear-cut information about the identification of two species of *Ageratum* from the state of Punjab. Keeping this in view, the present study was conducted for accurate identification of *Ageratum* species based on morphological parameters.

MATERIALS AND METHODS

Survey and Collection

Two species of the genus *Ageratum* were documented from different *kharif* and *rabi* crops as a weed from Faridkot (Malwa region), Punjab, India during the year 2024.

Taxonomic identification

Morphological features (leaf, stem, flower, involucre bract etc.) were examined for identification of species. The collected plant specimens were identified on the basis of available literature (Stewart 1869, Hooker 1872–1897, Collet 1902, Bamber 1916, Nair 1978, Chowdhery & Wadhwa 1984, Sharma 1990, Sidhu 1991).

RESULTS AND DISCUSSION

During present investigation, two species of the genus *Ageratum* were documented from different *kharif* and *rabi* crops of district Faridkot (Punjab) as a weed species during the year 2024. These species were also recorded from waste places as invasive or alien species. For accurate identification of these species, various morphological parameters were investigated.

Ageratum conyzoides L. Species Plantarum 2: 839 (1753)

[Fig. 1]

It is an annual, erect branched herb. Stem herbaceous to woody, green, hairy. Leaves opposite but upper alternate, green, broadly ovate or rhomboid-ovate to triangular, long, apex sub-acute, more or less hairy on both surfaces. Capitulum are present in corymbs. Each capitula consists 10–15 flowers. Involucre bract of capitula

is smooth. Flowers are bisexual, sessile; Sepals-5, polysepalous, green; Petals-5, gamopetalous, tubular, white to violet in color; Stamens-5, epipetalous, forms a column around the style, ditheous; Stigma bifid with long style. Cypsella consists of oblong, 5-angular, black with pale base, glabrous or slightly hairy achenes with pappus-scales.

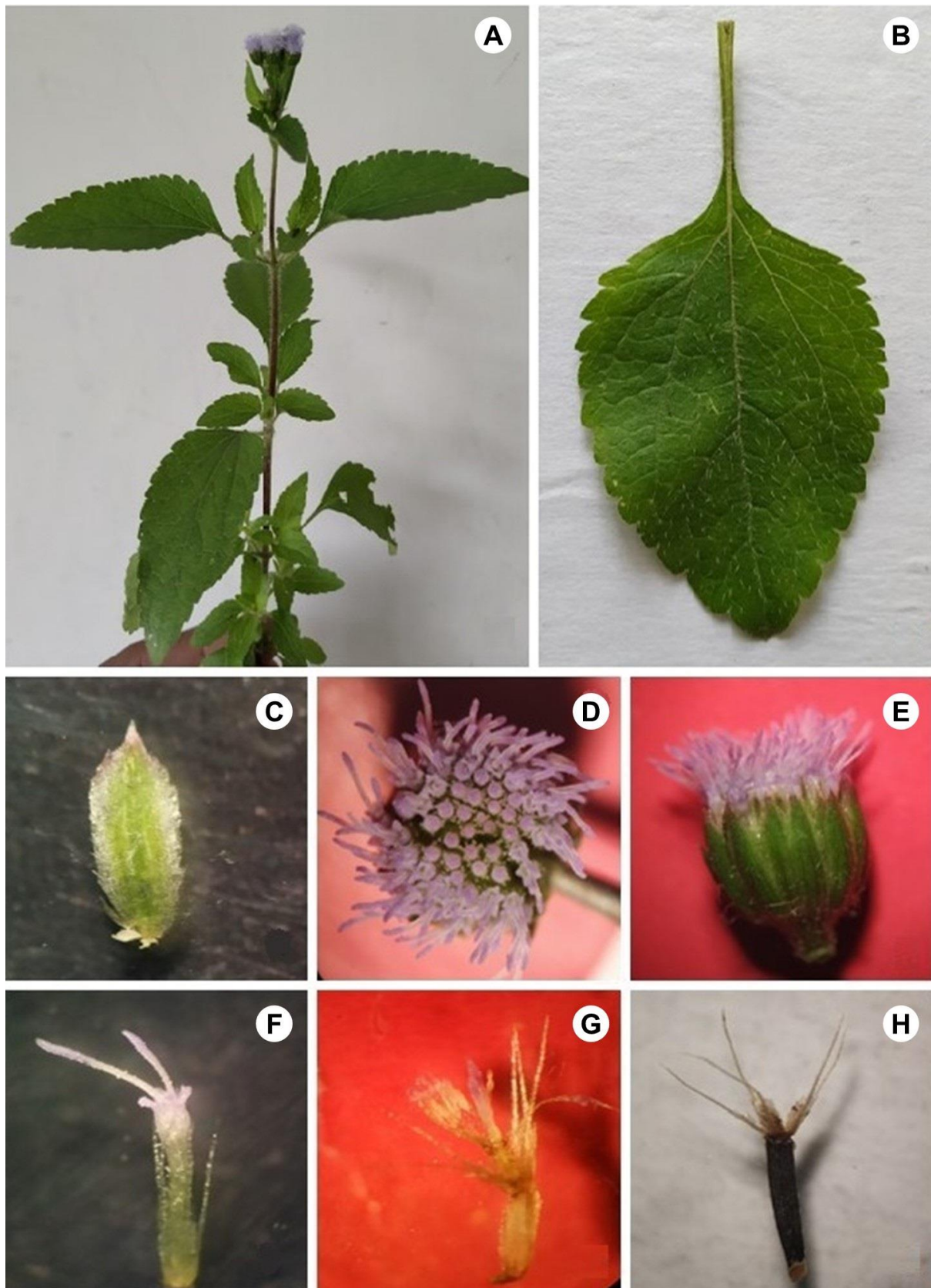


Figure 1. *Ageratum conyzoides* L.: **A**, Habit; **B**, Leaf; **C**, Invocular bract; **D**, Capitulum with disc florets; **E**, Capitulum with invocular bract; **F**, Single flower; **G**, Dissected flower; **H**, Achene.

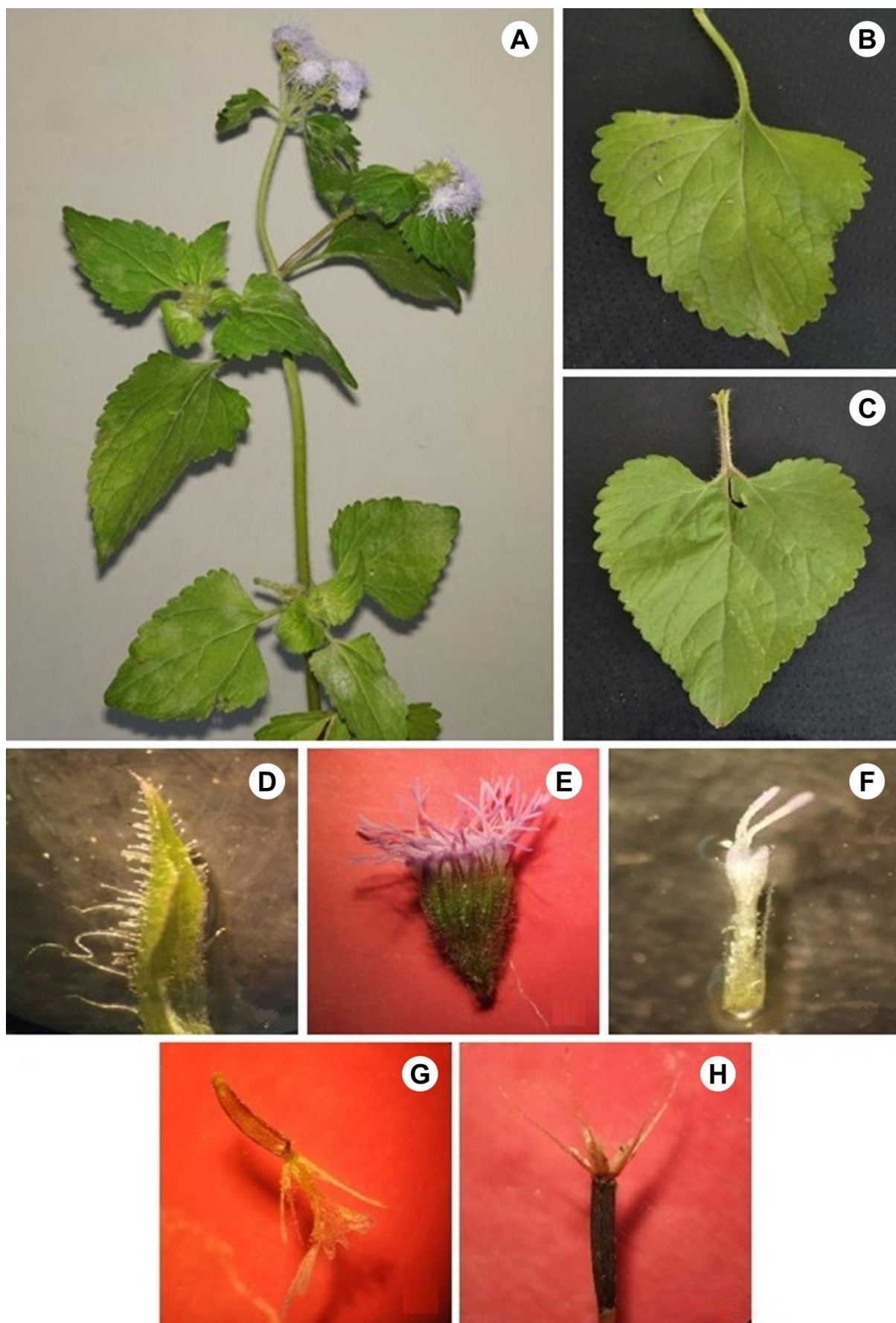


Figure 2. *Ageratum houstonianum* Mill.: **A**, Habit; **B** & **C**, Leaf; **D**, Invoclar bract; **E**, Capitulum with invoclar bract; **F**, Single flower; **G**, Dissected flower; **H**, Achene.

***Ageratum houstonianum* Mill.** The Gardeners Dictionary: eighth edition no. 2 (1768)

[Fig. 2]

It is an annual to perennial, erect herb. Stem is herbaceous to woody, branched, green and hairy. Leaves are opposite, green, hairy, broadly ovate to triangular, long, apex sub-acute, more hairy on both surfaces. Capitulum are present in corymbs. Capitulum are larger than capitulum of *Ageratum conyzoides* and consists 17–25 flowers. Involucral bract of capitula is glandular hairy. Flowers are bisexual, sessile; Sepals-5, polysepalous, green; Petals-5, gamopetalous, tubular, white to violet in color; Stamens-5, epipetalous, forms a column around the style, dithecal; Stigma bifid with long style. Cypsella oblong, 5-angular, black with pale base, glabrous or slightly hairy achenes with pappus-scales.

Identification Key

Involucral bract smooth ----- *Ageratum conyzoides*

Involucral bract hairy ----- *Ageratum houstonianum*

CONCLUSION

This information about morphology of two species of the genus *Ageratum* is an updated and accurate data for identification. Every species has a unique medicinal values but some time confused species are commonly used by tribal people as a single species. Therefore, this information will be useful for researchers, taxonomists, ethnobotanists etc. for identification of *Ageratum* species on the behalf of morphological characters.

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