Blossom midge *Contarinia maculipennis* Felt infesting tuberose (*Agave amica*) flowers in India

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Tuberose (*Agave amica* (Medikus) Thiede and Govaerts) is a hardy and economically important flower crop in India. Tuberose growers have been facing severe loss in flower yield due to the large-scale deformities and rotting of buds caused by midge fly attacks. Morphology and DNA barcoding have confirmed the identity of this midge species as *Contarinia maculipennis* Felt (Diptera: Cecidomyiidae). Maggot feeding causes deformation and rotting of the infested buds and imparts an ugly appearance to the tuberose florets. Midge fly infestation ranged from 5.67% to 88% from July to September 2022 in different tuberose-growing areas of Maharashtra, Telangana and Andhra Pradesh in India. The bioecology of this midge species and the nature of damage to tuberose were studied to develop eco-friendly management methods. This study offers novel insights into the nature and extent of midge damage to tuberose and how midge symptoms differ from tuberose melody symptoms caused by the foliar nematode.

Keywords: Bioecology, blossom midge, DNA barcoding, midge fly, morphology, tuberose buds.

buds, and the neonates feed on the internal tissues, form galls and deform the flowers as they feed on them. Midge fly feeding damage significantly reduces the market value of the produce[5]. In the case of severe infestations in crops like jasmine, buds dry prematurely, leading to bud drop or blossom drop, thus greatly reducing the marketable quantity of the flowers[6].

Worldwide, the infestation of *C. maculipennis* has been recorded on *Pseuderanthemum laxiflorum* (A. Gray) Hubbard ex Baillon (family Acanthceae)[4], *Plumeria rubra* L. (family Apocynaceae)[7], *Brassica chinensis* L. (family Brassicaceae), *Momordica charantia* L. (family Cucurbitaceae), *Hibiscus rosa-sinensis* L. (family Malvaceae), *Lycopersicon esculentum* Miller (family Solanaceae), *L. peruvianum* (L.) Mill. (family Solanaceae), *Capsicum frutescens* L. (family Solanaceae), *Solanum melongena* L. (family Solanaceae), *Solanum tuberosum* L. (family Solanaceae), *Solanum rantonnetii* Carriere (family Solanaceae)[8], *Jasminum sambac* (L.) Aiton (family Oleaceae)[8,9], *Dendrobium phalaenopsis* Fitz. (family Orchidaceae)[5,7,10,11] and *Oxalis corniculata* L. (family Oxalidaceae)[4,12].