

***Contarinia maculipennis* as an emerging threat to *Dendrobium* in Sri Lanka - A case study**

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Blossom midge, *Contarinia maculipennis* which belongs to Order Diptera: Family Cecidomyiidae is considered as one of the major threat to ornamental and several crop plant species due to its wide host range. For the first time *C. maculipennis* was recorded from *Dendrobium* sp. in 1992 from Florida, but the origin of this species is considered as Southeast Asian region. In Korea, it is officially nominated as a quarantine pest since 2007 due to its severe economic impact on vegetable crops and ornamental plants. For the first time in Sri Lanka, completely damaged *Dendrobium* cultivation was found in an ornamental plant nursery at Gampaha district in 2017. It was noted that the symptoms were similar to that of blossom midge damage. Maggots were found to be feeding inside unopened flower buds, causing deformed, discolored buds and blossoms causing premature bud or blossom drop. Floral buds were often found to be rotted. Samples from immature bud stage to fully opened flowers were randomly collected from infected fields into polythene bags. To identify causative agent, floral buds with larval stages were kept in glass containers to allow them to complete their life cycle and thereby morphological characters were studied to confirm the pest species. In addition, yellow color grease sheets were kept inside the greenhouses to trap any adult stages of the pest species. Samples were collected and preserved using 70% ethanol for identification. Since all the damaged flower buds displayed symptoms of bacterial rots, to determine if any bacterial infection is also associated with the symptoms, bacterial isolation procedure was carried out. Different stages of floral samples were separately surface sterilized for two minutes using 70% ethanol and three serial washings with sterilized distilled water. Tissue macerate was prepared and kept for 3 hours before culturing on Nutrient Agar (NA) plates, Potato Dextrose Agar (PDA) and Luria-Bertani (LB) plates. Each sample had three replicates and ten samples were cultured. Growth from the tissues were observed and pure cultures were obtained. Relative length of the first and second flagellomeres, wing length and pattern, larval sternal spatula and its associated papillae and larval eighth abdominal segments were compared with identification keys which were used to identify the genera, *Contarinia*. The adult stages of trapped insects and adult stages of insect emerged from the larval stages were useful in confirming the species as *C. maculipennis*. Basic biochemical tests and Gram's staining assisted in identifying the bacterium as belonging to the genera, *Erwinia* sp. and it appears that the bacterial infection occurs as a secondary infection after larval stages of *C. maculipennis* damage the floral tissues. This is the first record of *C. maculipennis* infecting orchid nurseries in Sri Lanka and if proper care is not taken it will invade other crop species as the pest has a broad host range. It is not clear whether the pest was a recent introduction through the imports of plant material or whether it is a result of host jump and therefore, it warrants further research.

Keywords: Blossom midge, *Contarinia maculipennis*, Orchids