Research Article

# Alternate Fungicides for the Management of Carbendazim Resistant *Fusarium* Species Causing Wilt in Gladiolus and Marigold

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**Abstract**

To ensure the appropriate use of fungicides, we need to address the important issue of fungicide resistance. Since fungicide residue is not a limiting factor in the production of ornamental crops, indiscriminate use of fungicides has resulted in development of resistance to benzimidazole fungicides in *Fusarium* species infecting ornamental crops *viz*., gladiolus, carnation and marigold that we have reported earlier. In the previous study, we had identified the chemicals to which the resistant isolates were sensitive. The efficacy of these alternate fungicides *viz.,* chlorothalonil (0.2%), captan (0.2%), bitertanol (0.2%), pyraclostrobin (0.1%), propiconazole (0.1%), mancozeb (0.2%) and tebuconazole (0.1%) were evaluated for their efficacy in reducing the population of benzimidazole resistant *Fusarium* population and in reduction of wilt incidence in gladiolus and marigold in pot culture. Fungicides *viz.,* captan, mancozeb, bitertanol, pyraclostrobin, chlorothalonil and propiconazole were highly effective in reducing the pathogen population and wilt incidence in marigold and gladiolus. Use of alternative fungicides will help not only in the management of *Fusarium* wilt in marigold and gladiolus but also in managing the carbendazim resistance by reducing the inoculum level of resistant isolates in soil over a period of time in the target locations where fungicide resistant populations occur.

**Key words:** Alternate fungicides, carbendazim, fungicide resistance management, *Fusarium* wilt, gladiolus, marigold

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