

RESEARCH ARTICLE

Influence of bio-control agents and vermicompost on post harvest life of flowers and corm yield in gladiolus

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ABSTRACT

A field experiment on gladiolus was carried out to see the influence of vermicompost and various bio-control agents on postharvest life of cut gladioli and corm yield. Treatment consisted of control, *Trichoderma harzianum*, *Pseudomonas fluorescens*, *Bacillus subtilis*, vermicompost, *Trichoderma* + *Pseudomonas*, *Trichoderma* + *Bacillus*, *Trichoderma* + vermicompost, *Pseudomonas* + *Bacillus*, *Pseudomonas* + vermicompost, *Bacillus* + vermicompost and *Trichoderma* + *Pseudomonas* + *Bacillus* + vermicompost. Experiment was laid out in a Randomised Block Design with three replications at Horticulture Research Farm, B.H.U., Varanasi. Maximum weight of spike at first day was recorded with *T. harzianum* + vermicompost. Whereas, *B. subtilis* + vermicompost registered maximum weight of spike at third day, sixth day, ninth day and number of florets open at a time. Application of *T. harzianum* + *P. fluorescens* + *B. subtilis* + vermicompost registered maximum length of spike at first day, third day, sixth day, ninth day, dry weight of spike, weight of spike after withering and diameter of corms. Maximum number of corms per hill was recorded with *P. fluorescens* which was significant to *T. harzianum* + *P. fluorescens*. Maximum vase life was observed with *T. harzianum* whereas, maximum solution uptake was observed with *T. harzianum* + *P. fluorescens*. Application of *P. fluorescens* + vermicompost registered maximum number and weight of corms per hill.

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INTRODUCTION

Gladiolus is very popular bulbous flowering plant grown throughout the world. It is native to tropical and southern Africa and belongs to family Iridaceae. Gladiolus with its majestic flower spikes having rich variations of colours and long vase life has ever increasing demand in the flower market. Vermicompost act as valuable organic manure and it is higher in content as compare to usual rural compost. Among bio-control agents, *Trichoderma harzianum*, *Pseudomonas fluorescens* and *Bacillus subtilis* occupy significant place for their antagonistic property against *Fusarium oxysporum* f. sp. *gladioli* causing *Fusarium* wilt of gladiolus. Beneficial effect of organic manure and bio-control agents has been well

documented in various horticultural crops. Effect of vermicompost and bio-control agents on post-harvest life and corm yield of gladiolus has been reported earlier (Dubey and Singh, 2007 and Dongardive *et al.* 2009). In view of the above background, the present study was undertaken in gladiolus with the objective to find out the effect of vermicompost and bio-control agents on post-harvest life and corm yield of gladiolus.

MATERIALS AND METHODS

The present experiment was carried out at Horticulture Research Farm, Department of Horticulture, Institute of Agricultural Sciences, B.H.U., Varanasi. The soil of experiment