

**EFFECT OF NANO, BIO, CHEMICAL FERTILIZATION
AND PLANT EXTRACTS ON GROWTH,
FLOWERING, BULB PRODUCTIVITY
AND CHEMICAL CONSTITUENTS
OF GLADIOLUS PLANT**

By

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ABSTRACT

This study was conducted at Department of Ornamental Horticulture Fac. Agric ., Cairo Univ., and the experimented part of this study had been carried out at the nursery of Horticulture Research Institute, Agricultural Research Center, Giza, Egypt for two successive seasons of 2018/2019 and 2019/2020 on *Gladiolus grandiflorus* cv. Rose Suprem to study the effect of different types of fertilization treatments i.e. traditional NPK (t-NPK) at 2.0 g/pot, nano NPK (n-NPK) at 0.5 and 1.0 g/l, active dry yeast extract (ADYE) at 5.0 and 10.0 g/l, moringa leaves extract (MLE) at 5.0 and 10.0%, and some combinations (ADYE at 5.0 g/l + MLE at 5.0%, MLE at 10% + n-NPK at 1.0 g/l and ADYE at 10.0 g/l + n-NPK at 1.0 g/l) as well as untreated plants as control on vegetative growth, flowering, corms and cormels productivity and some chemical constituents. The results showed that MLE at 10% + n-NPK at 1 g/l gave the highest values in case of plant height, spike stem diameter (cm), floert diameter (cm), fresh and dry weights of cut spike (g), number of the produced corms and cormels/experimental unit. In this concern, ADYE at 5.0 g/l + MLE at 5.0% produced the highest values in terms of corm circumference (cm), corms fresh and dry weights (g) and cormels fresh weight (g). While, MLE at 10% produced the highest values for number of leaves/plant, number of florets/spike and spike stem length (cm) followed by MLE at 10% + n-NPK at 1 g/l. On the other hand, chemical constituents i.e. chlorophyll a, b, carotenoids of fresh leaves (mg/g), N, P, K and total carbohydrates (%) was influenced by different fertilization treatments, the mastery in this concern was to application of MLE at 10% + n-NPK at 1 g/l. It could be recommended to treat *Gladiolus grandiflorus* cv. Rose Suprem with MLE at 10% + n-NPK at 1 g/l for the best results regarding vegetative growth, flowering corms and cormels productivity and chemical constituents.

Key words: *Gladiolus grandiflorus* cv. Rose Suprem, NPK, chemical fertilization, nano fertilizer, moringa leaves extract, yeast extract

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