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Title of Thesis: Response of *Gladiolus grandiflorus* cv. "Peter Pears" and *Solidago canadensis* cv. "Tara" to different drip irrigation levels and Kristalon treatments.

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ABSTRACT

This study was conducted during two successive seasons (2010/2011 and 2011/2012) at the nursery of the Horticulture Research Institute, Agricultural Research Center, Giza, Egypt, with the aim of studying the effect of different drip irrigation levels (applied twice weekly, at low, medium and high levels, equivalent to 2, 4, 6 L/plant, respectively) and different foliar fertilization levels, using the commercial fertilizer Kristalon (19:19:19 NPK+ micronutrients: 0.001% Cu, 0.25% B and 0.001% Mo), at concentrations of 0, 2, 4 and 6 g/L (referred to as control, low, medium and high rates, respectively), as well as the combinations of the irrigation and Kristalon treatments, on the growth, flowering and chemical composition of *Gladiolus grandiflorus* cv. Peter Pears and *Solidago canadensis* cv. Tara, grown in a sandy soil under full sun light condition. The final objective of the study was to reduce the amount of water used in agricultural production, and to determine the best Kristalon level for producing plants and flowers of high quality. Corms of *Gladiolus grandiflorus* (average weight of 15 g, and circumference of 10-12 cm) were planted on October 1st, and transplants (with about 10 leaves, and 10 cm height) of *Solidago Canadensis* were planted in mid April in both seasons. Results revealed that it could be recommended to use the low irrigation level (2 L/plant) with applying Kristalon at the low concentration (2 g/L) for achieving high plant quality of *Gladiolus grandiflorus* cv. Peter Pears. Also, it could be recommended to apply either the low or the medium levels of irrigation (2 or 4 L/plant) and Kristalon (2 or 4 g/L) for improving plants quality of *Solidago canadensis* cv. Tara, besides saving the amount of water used in agriculture production.

Key words: *Gladiolus grandiflorus* cv. Peter Pears, *Solidago Canadensis* cv. Tara, irrigation levels, Kristalon, foliar fertilization.

DEDICATION

I dedicated this work to whom my heart felt thanks; My parents and My son Kareim, their patient and help, as well as Dr. Khaled Emam for all the support they generally offered along the period of my post-graduate.

ACKNOWLEDGEMENT

*I wish to express my sincere thanks, deepest gratitude and appreciation to **Dr. Hazem Mansour** and **Dr. Mohamed Mousa**, Professors of Ornamental Horticulture, Faculty of Agriculture, Cairo University for supervision, continued support, and their guidance through the course of the study and revising the manuscript of this Thesis.*

*Sincere thanks to **Dr. Salah Abd-El Aziz**, Head Researcher of the Ornamental Plants Research Department, Horticulture Research Institute, Agricultural Research Center, Giza for suggesting the problems, and his keen supervision, encouragement and continuous interest throughout this investigation.*

*Many thanks and appreciations are due to **Doctor Ali Nabih**, Head Researcher of the Botanical Gardens Research Department, Horticulture Research Institute, Agricultural Research Center, Giza, who played a key role in encouraging and coordinating this whole Thesis.*

*Grateful appreciation is also extended to **Doctor Khaled Abd El-Mohsen**, Researcher at the Botanical Gardens Research Department, Horticulture Research Institute, Agricultural Research Center, whose guidance was instrumental in conducting this research and without whose help, support and patience, this thesis wouldn't have been successful.*

Special deep appreciations are given to My Father, My Mother and my son Kareim.