PHYSIOLOGICAL STUDIES ON PRODUCTION OF SOLIDAGO AS A POT PLANT

By

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B.Sc. Agric. Sci., (Ornamental Horticulture), Fac. Agric. Al-Azhar Univ., 2001
M.Sc. Agric. Sci. (Ornamental Horticulture), Fac. Agric. Al-Azhar Univ., 2010

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APPROVAL SHEET

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Title of Thesis: Physiological studies on production of Solidago as a pot plant
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ABSTRACT

This investigation was carried out at Dept. of Ornamental Hort., Fac. Agric., Cairo Univ., and the applied part was carried out at the Experimental Farm of Hort. Res. Inst., ARC., Giza, Egypt under open field conditions during 2015 and 2016 seasons to study the effect of pinching, bio-fertilization (mixture of Nitrobein and Phosphorein as soil drench) and chemical fertilization (NPK at 0, 1.5 and 3 g/pot as soil drench), foliar spraying with alar (at 0, 500, 1000 and 1500 ppm) and their interactions on vegetative growth, flowering characteristics and chemical composition of goldenrod (*Solidago hybrida,* "Tara") with the aim of producing high quality plants appropriate to be used as flowering pot plants.

There was a great influence had been obtained due to applying different individual, double and tri interaction treatments. The remarkable interaction treatment that produce the best results and which came in agreement with this study objectives was pinching in addition to bio-fertilization plus NPK at 1.5 or 3.0 g/pot + spraying with alar at 500 ppm. Such treatment produced the best results concerning vegetative growth (plant height (cm), stem diameter (mm), herb fresh weight (g), herb dry weight (g), number of suckers/plant and leaf area (cm^2)), flowering characteristics (flower stem length (cm), flowering start date (days), flowering stems fresh weight (g), flowering stems dry weight (g) and number of flowering branches/plant) and chemical composition (chlorophyll a, b and carotenoids (mg/g f.w.), N, P and K contents (%), total carbohydrates (%), indoles (mg/100 g f.w.) and phenols (mg/100 g f.w.)).

From an aesthetic point of view, it is recommended to treat goldenrod transplants grown in 14 cm pots with pinching in addition to bio-fertilization plus NPK at 1.5 or 3.0 g/pot + spraying with alar at 500 ppm to produce high quality flowering pot plants.

Key words: *Solidago hybrida*, pinching, NPK fertilizers, bio-fertilizers, Alar, vegetative growth, flowering characteristics, chemical composition.

DEDICATION

I dedicate this work to whom my heart felt thanks, my father, mother, sisters, wife and my baby Suleiman for their patience and help, as well as to all my friends for the support they lovely offered along the period of my post graduation.

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