STUDYING THE EFFECT OF SOME GROWTH INHIBITORS AND DIFFERENT GROWING MEDIA ON THE GROWTH AND CHEMICAL COMPOSITION OF *Callistemon citrinus* PLANT

By

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B.Sc. Agric. Sci. (Ornamental Horticulture), Fac. Agric., Cairo Univ., 2011

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Title of Thesis: Studying the Effect of Some Growth Inhibitors and Different Growing Media on the Growth and Chemical Composition of *Callistemon citrinus* Plant.
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ABSTRACT

The objective of this study was to evaluate the effect of using paclobutrazol and cycocel at the levels of 0, 200, 400 and 600 ppm and various growing media (clay, rice straw and sawdust) on plant growth, flowering and chemical constituents of *callistemon citrinus* grown at experimental field of the ornamental horticulture department, faculty of agriculture, cairo university, during the two successive seasons of 2014 to 2016. The obtained data indicated that, all paclobutrazol and cycocel treatment significantly decreased plant height(cm) length of flowers (cm),delayed flowering(days) and decreased total soluble indols (mg/g F.W) compared with control plants, while stem diameter (cm), number of leaves and branches / plant, fresh and dry wieght of leaves and branches /plant (gm),number of roots and flowers / plant, total chlorophylls (mg/g F.W), total carbohydrate (%) and total soluble phenols (mg/g F.W) were increased and the best results were obtained by application of 600 ppm cycocel followed by 600 ppm paclobutrazol. The maximum values of all characters were obtained from plants were grown under rice straw media followed by clay media while sawdust media depressed these characters exept total soluble phenols . The interaction between foliar application of paclobutrazol and cycocel under growing media data indicated that the maximum values of plant height, length of flower and total soluble indols were obtained from plants treated with zero growth inhibitors under rice straw medium,while the earlist flowering was found when plant sprayed with zero growth inhibition under clay medium. The height significant values of stem diameter, number of leaves and branches/ plant fresh and dry wieght of leaves and branches / plant, number of root and flower/ plant ,total chlorophylls (mg/g F.W) total carbohydrate (%) and total phenols (mg/g F.W) were obtained by foliar application of cycocel at the concentration of 600 ppm grown under rice straw medium, followed by 600 ppm paclobutrazol grown under the same medium.

Key words: *Callistemon citrinus* , Growth inhibitors , Growing media ,Vegetative growth , Flowering , chemical constituents.

DEDICATION

I would like to dedicate this work to my beloved family, because without them I could not accomplish anything, ***grandmother (Fatma), mother (Ola)*** *and my* ***father (Abd-almomen)*** *for their support me and encouragement throughout this work.*

As well as my deepest thanks to my lovely husband ***Sameh*** *for his encouragement during this work.*

I also dedicate it to my uncle ***Ali*** *and my ante* ***Hanan*** *and* ***Souaad,*** *and my cousin* ***Ahmed*** *and* ***Yasmin***

Also, I dedicate this work to all my friends.

WITH MY LOVE

Jehad

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ARABIC SUMMARY