EFFECT OF SOME POSTHARVEST TREATMENTS ON SOME CUT FLOWERS

By

ENAS ALI YOUSSEF ELSHEREEF

B.Sc. Agric. Sci. (Horticulture), Fac. Agric., Cairo Univ., Egypt, 2005

THESIS

Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

In

Agricultural Sciences
(Ornamental Horticulture)

Ornamental Horticulture Department
Faculty of Agriculture
Cairo University
EGYPT

2015

APPROVAL SHEET

EFFECT OF SOME POSTHARVEST TREATMENTS ON SOME CUT FLOWERS

M.Sc. Thesis
In
Agric. Sci. (Ornamental Horticulture)

By

ENAS ALI YOUSSEF ELSHEREEF
B.Sc. Agric. Sci. (Ornamental Horticulture), Fac. Agric., Cairo Univ., Egypt, 2005

Approval Committee

Dr. Mona Hassan Mahgoub……
Researcher Professor of Ornamental Plants and Woody Trees, NRC, Dokki, Giza

Dr. Abou- Dahab Mohammed Abou- Dahab……
Professor of Ornamental Horticulture, Fac. Agric., Cairo University

Dr. Mona Ahmed Darwish ……...
Professor of Ornamental Horticulture, Fac. Agric., Cairo University

SUPERVISION SHEET

EFFECT OF SOME POSTHARVEST TREATMENTS ON SOME CUT FLOWERS

M.Sc. Thesis
In
Agric. Sci. (Ornamental Horticulture)

By

ENAS ALI YOUSSEF ELSHEREEF

B.Sc. Agric. Sci. (Ornamental Horticulture), Fac. Agric., Cairo Univ., Egypt, 2005

SUPERVISION COMMITTEE

Dr. MONA AHMED DARWISH
Professor of Ornamental Horticulture, Fac. Agric., Cairo University

Dr. OLFAT HAMED EL-SHAITY
Assistant Prof. of Ornamental Plants, Fac. Of Agric., Cairo University

Dr. FATMA ELNABAWIA MOHAMED EL-QUESNI
Researcher Professor of Ornamental Plants and Woody Trees, National Research Centre, Dokki , Giza

Name of Candidate: Enas Ali Youssef ElShereef **Degree:** M.Sc.
Title of Thesis: Effect of Some Postharvest Treatments on Some Cut Flowers
Supervisors: Dr. Mona Ahmed Darwish
Dr. Olfat Hamed El-Shaity
Dr. Fatma Elnabawia Mohamed El-Quesni
Department: Ornamental Horticulture **Approval:** 18/ 5/ 2015

ABSTRACT

The experiment was carried out at postharvest laboratory of the Department of Ornamental Plants and Woody Trees, National Research Centre during two successive seasons (2007/2008 and 2008 /2009) to investigate the effect of some chemical preservatives on the vase life of carnation and solidago cut flowers to improve its quality and extend the shelf life period. Results of the first experiment showed that carnation flowers were treated by 300 ppm 8-HQS +40 g/l sucrose prolonged the vase life and caused the maximum increase in fresh weight, the lowest % of weight loss at initial days, increased water uptake in cut flowers and highest level of water balance and highest value of dry weight highest values of reducing sugars in both seasons. Most of tested vase solutions significantly increased water uptake with increasing days of shelf life period up to 10 days, 0.4mM STS for 6 h. + 50 g/l sucrose gave the best results. using 150 ppm 8-HQS + 20 g/l sucrose gave the highest values of chl. a, b and total carotenoids, the highest values of total and non- reducing sugars were found when carnation cut flowers pulsed in 50 ppm GA_3 for 24h. then placed in 200 ppm 8-HQS in both seasons.

Results of the second experiment indicated that treatment of solidago cut spikes with 0.4 mM STS for 6 hours gave the best results in prolonging vase life, highest values of maximum increase in fresh weight. Using 0.4 mM STS for 6h. +50g/l sucrose gave the highest level of water uptake. Treating solidago with 300 ppm 8-HQS + 40 g/l sucrose gave the best results in maximum increase in fresh weight%, decreased weight loss% at initial days, gave the lowest value of water loss, maximum value of chl. a, b and total carotenoids, highest value of water balance and dry weight. Using 50 ppm GA_3 for 24 h. then placed in 200 ppm 8-HQS gave the highest values of total and non-reducing sugars while the highest value of reducing sugars were found when treated solidago with 50 ppm BA for 24h. then placed in 200 ppm 8-HQS

Keywords: Carnation, *Dianthus caryophyllus*, *Solidago canadensis*, preservative solutions, vase life, keeping quality, chemical constituents.

DEDICATION

To all those without whom this thesis might not have been written. Great appreciation for their inspiration, supporting good wishes and patience.

*To my wonderful parents "**Ali ELShereef** & **Manal Nassar** , my husband " **Mohamed Hamed**", my lovely kids " **Ahmed** & **Adam**", my lovely brother "**Mahmoud** and my adorable beloved sisters " **Aml & Ebtehal** ". I would like to express my deepest gratitude and love for all of them.*

ACKNOWLEDGEMENT

Praise and great gratitude to ***Allah,*** *the God of all creatures for helping me and directing me to the right way.*

I wish to express my sincere thanks, deepest gratitude and appreciation to ***Dr. Mona Ahmed Darweesh*** *Professor of Ornamental Horticulture, Faculty of Agriculture, Cairo University for suggesting the problem, continued assistance and her guidance through the course of study and revision the manuscript of this thesis.*

My deepest thanks are also due to ***Dr. Olfat Hamed El-Shaity,*** *Associate Professor of Ornamental Horticulture, Faculty of Agriculture, Cairo University for kind help during this work.*

All deepest thanks and gratitude are to ***Dr. Fatma El-nabwia Mohamed El-Quesni*** *Researcher Professor of Ornamental Plants and Woody Trees, National Research Center, Giza for her kindness, sharing in supervision, continuous encouragement and for her deep interest in revision the manuscript of this thesis.*

My deepest thanks are also due to ***Dr. Lobna Salah Taha,*** *Associate Professor of Ornamental Plants and Woody Trees, National Research Center, Giza for kind help during this work.*

Grateful appreciation is also extended to all stuff members of Ornamental Plants and Woody Trees, NRC.

CONTENTS

LIST OF TABLES