STUDY ON *IN-VITRO* GROWTH, ROOTING AND ACCLIMATIZATION OF BABY'S BREATH (*Gypsophila paniculata* L.)

A dissertation submitted to the

Faculty of Animal Science and Export Agriculture

Uva Wellassa University

in partial fulfillment of the requirements for the award of the

Degree of Export Agriculture

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Export Agriculture Degree Programme

Faculty of Animal Science and Export Agriculture

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2010

ABSTRACT

Baby's breath (*Gypsophyla paniculata* L.) is one of the important cut flower which used Tissue cultured techniques to propagate commercially. Fragile nature of roots reduced *in-vitro* rooting and plant survival during acclimatization. Therefore, this research was conducted to improve the *in-vitro* rooting and plant survival of Baby's breath. Effect of four different gel strengths of MS medium (solid : 9 g l^{-1} agar, semisolid : 4.5 g l^{-1} agar, liquid and liquid with coir dust), two different aeration levels (aerated and non aerated) and two different age levels of cultures (four and six weeks aged) on *in-vitro* growth, rooting and acclimatization of baby's breath was studied through observing shoot height (cm), total dry weight (TDW) (g), total fresh weight (TFW) (g), no. of roots, root length (cm), no. of rooted plants by using 3 replicates and no. of survival plants observed weekly interval up to one month by using 40 plants at Tissue Culture laboratory, Agricultural Research Station, Sita Eliya. Complete Randomized Design (CRD) and MINITAB statistical package were used to analyze the data. Tukey test was used to mean comparison at 5% significant level.

Six weeks old plants in aerated semi solid medium was found to be better for *in-vitro* shooting as it recorded higher survival percentage (83.3%) than four weeks old plants in non aerated semisolid medium (50%) due to high calli growth though it was recorded the highest TDW, TDW/TFW. Six weeks old plants in aerated solid medium was recorded the best performances in *in-vitro* rooting which recorded 100%.rooting and survival percentage with higher no. of roots (2.83) comparing to the six weeks old plants in non aerated solid medium which recorded 100% rooting and survival percentage with lower number of roots (2.16) at 5% significant level.

It can conclude that six weeks old plants in aerated semi solid medium can be used for *in-vitro* shooting and six weeks old plants in aerated solid medium can be used to *in-vitro* rooting and acclimatization. It could also be suggested that three weeks time period was sufficient for acclimatization of *in-vitro* grown plants.