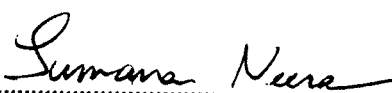
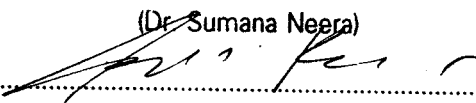


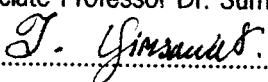
THESIS TITLE : AN INFLUENCE OF NUTRIENTS, SUGARS AND PLANT GROWTH
REGULATORS ON *IN VITRO* JASMINE CULTURE (*JASMINUM SAMBAC*)
AND FRAGRANCES.

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ABSTRACT

The experiments were carried out at the Department of Horticulture, Faculty of Agriculture, Khon Kaen University, Khon Kaen, Thailand during October 1993 to October 1996 to investigate the effect of different kinds of nutrient, sugar and plant growth regulator on bud development of branches (segments) and callus of Jasmine and also the distillation of fragrances of freed disease jasmine plant materials. The experiments were laid factorial in completely randomized design with five replications. They were consisted of four parts i.e. 1). The effect due to the various nutrients applied in combination with sugars, 2). The effect due to plant growth regulators, 3). The effect due to the application of nutrients, sugar and plant growth regulators, applied together, and 4). The distillation of fragrances of freed disease jasmine plant materials.

The results showed that the growth and development of multiple shoot initiation on segments and callus were promoted most by the use of a modified MS media supplemented with both sucrose and galactose of 10 g l^{-1} . Both sucrose and galactose promoted multiple shoots of jasmine segments up to 10 and 9 multiple shoots, respectively. With the effect due to plant growth regulators, the results revealed that an MS media with the additional amount of

kinetin of 20 mg l^{-1} supplemented with IAA at the concentration of 0.1 mg l^{-1} induced jasmine multiple shoots up to 6 shoots while MS media with the additional amount of kinetin of 3 mg l^{-1} concentration and also the added amount of 2,4-D with the concentration of 3 mg l^{-1} induced the weight of callus at the highest level up to 2.87 g. The effect of nutrients supplemented with sugar and plant growth regulators on the multiple shoot forming of jasmine segments revealed that multiple shoot development of segment was induced most by MS media with the added amount of 10 g sucrose while MS media without ammonium nitrate supplemented with the additional amount of sucrose at the concentration of 10 g l^{-1} plus BA at 5 mg l^{-1} concentration induced best the callus weight of jasmine (0.9 g). The MS media added with sucrose of 60 g l^{-1} plus BA at 3 mg l^{-1} induced as well the development of callus up to 0.9 g. For the results on the distillation of fragrances, the results revealed that two types of aromatic oils were found i.e. benzyl alcohol and benzyl acetate. These two substances were found only within the flowers while other jasmine plant parts were not evidently recorded.