

Phenotypic Evaluation of Strawberry (*Fragaria ananassa*) under Auxins and Cytokinins *in vitro* Culture

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Introduction

Strawberries are vegetatively propagated and cash - making crops in many countries. Thus, germplasm conservation is important to support the industry. However, there are weak scientific backgrounds of seedling production efficiency due to genotype specificity which could be elaborated for conservation and production. This experiments could contribute in the benefits for the plant conservation and production in the industry. The objective of this experiment is to successfully obtain the high quality seedlings of *Fragaria ananassa* common cultivars for 1) rapid propagation of conservation materials and 2) field production with mass-scale.

Materials and Methods

In vitro micropropagation of strawberry (*Fragaria ananassa*) was examined under different concentrations of auxins and cytokinins and the combination of both with controlled environment in measuring the growth rate of shoots, roots and tips for different genotype accessions (N19, N75, N166, N182, N190, N204).

Results and Discussion

The phenotypic reactions were observed in between single source and mixed sources exposure of phytohormones *in vitro* media culture (MS basal media culture 2.1g/L, 25g/L sucrose, 8g/L agar and 0.3g/L CaCl) at 23°C with a regular photo - period of 18 hours of light and 6 hours of darkness. 12 clones of each accessions were used with 9 clones under treatments

and 3 controlled. Each treatment goes through 3 months time period of evaluation with one phase of exposure to the phytohormones. There were three repetitions of the experiments. Clones come from hormone free cultivation. The exposure to a specific concentration of mixed phytohormones are hypothesized to have resulted in the highest rate of growth in roots, shoots and tips resulting in high quality explants. However, a custom-made genotype specificity was observed for better growth, and it is recommended to make genotype-dependent approaches at present to support mass-propagation. Genomic study of phytohormone reaction shall be engaged in the future to identify specific causes of the genotype specificity.

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