سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

سامية محمد مصطفى

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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سامية محمد مصطفى

بالرسالة صفحات لم ترد بالأصل

Alexandria University
Faculty of Agriculture
(Saba Basha)
Plant Production Dept.

Phenotypic and Genotypic Variation of (*Solanum tuberosum*, L.) Regenerated Via Tissue Culture

A THESIS

Submitted to the Post Graduate Division of

Faculty of Agriculture (Saba Basha)
Alexandria University

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY
IN
AGRICULTURAL SCIENCES

In

HORTICULTURE

By

EMAN YOUSSEF MOHAMED HASSAN

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ALEXANDRIA UNIVERSITY
Faculty of Agriculture
(Saba Basha)
Plant Production Dept.

PHENOTYPIC AND GENOTYPIC VARIATION OF (*SOLANUM TUBEROSUM*, L.) REGENERATED VIA TISSUE CULTURE

Presented By

EMAN YOUSSEF MOHAMED HASSAN

Submitted on Partial Fulfillment of the Requirements
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Doctor of Philosophy in Agricultural Sciences
in
(HORTICULTURE)

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INTRODUCTION

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Potato (*Solanum tuberosum* L.) belongs to the family Solanaceae. It is the most important non-cereal food crop in the world. In Egypt, potato is one of the most important vegetable crop grown on a large-scale for either local consumption or exportation abroad to obtain hard currency. However, the total cultivated area was 211,461 feddans in 1998. The reciprocally yield was about 1,984,013 tons with an average of 9.4 tons/ Feddan, (Economical Report of Ministry of Agriculture, 1998). Potato is a crop plant to which *in vitro* culture technology has extensively been used. Cultures have been raised from shoots and meristems, leaf and stem segments, anther and pollen, tuber explants and from mesophyll and callus protoplasts. Tissue culture techniques can be applied not only to increase propagation rates, but also to modify germplasm (Dodds, 1989). Meristem, shoot tip and nodal segment cultures are used, in general, for production of pathogen free material and rapid propagation too. On the other hand, *in vitro* regeneration of plantlets from somatic cells is a useful tool in the improvement of potato.

The ultimate goal of the present study is to evaluate the plants derived through different *in vitro* techniques for two potato cultivars grown, widely, in Egypt, phenotypically and genetically.

Therefore, the investigation could be summarized in the following items:

1. Regeneration plants from different *in vitro* techniques, using different explants.
2. Investigating the somaclonal variation that might be occur as a result of *in vitro* cultures.

3. Evaluate the somaclonal variation by using evaluational parameters; morphological, biochemical and cytological studies.