شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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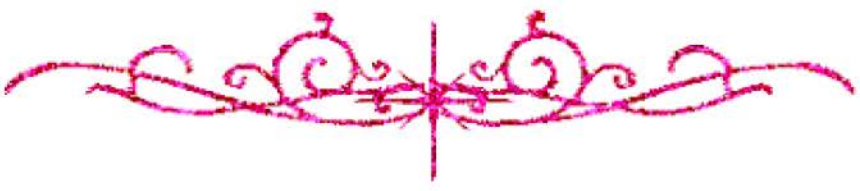

بالرسالة صفحات لم ترد بالأصل

BIOTECHNOLOGICAL STUDIES ON THE STABILITY OF TISSUE CULTURED DATE PALM PLANTS

By

Mohamed Mohamed AbdAlla Saad

B.Sc. (Genetics), Ain Shams Univ. 1977
M.Sc. (Botany) Al-Azhar Univ., 1988.

A thesis submitted in partial fulfilment
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Faculty of Agriculture
Ain Shams University

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APPROVAL SHEET

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ABSTRACT

Mohamed Mohamed Abd Alla Saad, Biotechnological studies on the stability of tissue cultured date palm plants. Unpublished Doctor of Philosophy Dissertation, Ain Shams University, Faculty of Agriculture, Genetics Department, 2000.

The main aim of this study was to produce true to type plantlets of date palm (Zaghloul cv.) using micropropagation techniques by either axillary bud proliferation(organogenesis) or somatic embryogenesis through callus, and to typefying these plantlets to the origin mother plants by means of molecular marker (Protien, isozymes and DNA RAPD.

The establishment stage results showed that the contamination percent decresed to 4.7% when explants were resterilized in 2% sodium hypochlorite (NaOCl) for 15min, followed deeping in sodium hypochlorite (6%) for 10sec. before culturing on media (53.4%). The highest survival percent was 95.3% while the lowest was 29%.

The browning percent was high in Autumn (36.1%0 while the lowest was (11.1%) in Summer for the shoot tip explants and with leaf explants the highest browning percent was 76.3% in winter while the lowest was 51.7% in Summer.

The best shoot tip explant growth (6 cm) was observed with media No. 3, 5 and 8 respectively, followed by media contained (0.2 NAA + 0.2 BA + 0.2 2ip) and (0.2NAA + 10.0 BA + 5.0 2ip), which produced (4 cm) in shoot tip length the average of length was 4.8 cm/shoot in Summer, and in Autumn, the best media for shoot growth

(6.8 , 6 cm) were contained (0.2 NAA + 0.2 BA + 0.2 2ip) and (2.0NAA + 0.2 BA + 0.2 2ip) and 5. (5NAA + 2BA+ 2 2ip) The best budding was on media contained (1mg NAA, in Summer and Autumn.The best multiplication of shoot tip was in the presence of 0.5 NAA/l + 0.5 mg BA/l + 0.5 mg IAA/l + 0.5 mg 2ip/l.

The callus formation and growth was best on media containing 100 mg 2,4-D + 3 mg BA or 2ip. The presence of high cytokinin 20 mg/l and low auxin (3-5 mg/l) resulted in formation of somatic embryos.

The multiplication of these somatic embryos was best on media supplemented with (2-3) mg BA/l and 0.5 mg/ NAA/l.

The elongation of the embryos was best in the presence of 1:2 mg BA/l + 0.5 mg NAA/l.

The rooting was best on media supplemented with 5 mg NAA/l + (1-3) mg IBA/l and the best root length was (34.3 kg) on media containing 5 mg NAA/l + 3 mg IBA/l. The acclamatization percent reached 76% when plantlets cultured on mixture of 1:1 sand and peatmose with high humidity.

The finger printing for the extracted soluble and non soluble proteins for the mother plants and the subcultures revealed that there were no differences in banding patterns. The five isozymes (Est, Px, GOT, Acph and Lap) banding patterns revealed that there were no differences in banding between the mother plants and the subcultures.

The DNA finger printing using RAPD-PCR revealed that the *in vitro* plants of date palm Zaghloul resulted by somatic embryogenesis were genetically identical.

Key words: Date palm, Micropropagation, Genetic Stability.

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Thanks for all friends

Mohamed Mohamed Abd Alla

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