Taxonomical studies in genus citrus

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SUMMARYTaxonomical Studies in Genus CitrusThese Studies were carried out during the period from 2005- 2007on Citrus trees in the Farm of Faculty of Agriculture , Moshtohor , Benha University .The Citrus tree under study were belongs to three genera ,Citrus, Fortunelle and Poncirus. The studies were divided into two parts: Isolation and Identification of volatile oils and Isolation and Identification of DNA.Isolation and Identification of volatile oils:The obtained results revealed that, the components of volatile oils differed between the three Citrus genera and between Citrus species and varieties under study as follows:The difference between three genera were:1-The volatile oils components of Genus Fortunella were characterized alone by the presence of Isoledene, Germacrene I), Elemol and JI-Eudesinel.2-The volatile oils components of Genus Citrus were characterized alone by the presence of Nonae in sour orange, Linalool oxide in sweet orange, Carine and 13 Terpneol in sweet lime, Neral in sweet lime and Cleopatra mandarin ,and 2,3 Dimethyl in Santara and Satsuma mandarin.3-The obtained results revealed that the components of volatile oils in Genus Poncirus were common with Genus Citrus.The differences between Citrus species and varieties were:1-Volatile oil component of Sweet orange leaves were characterized alone by the presence of Linalooloxide component.2-Volatile oil component of Sour orange leaves were characterized alone by the presence of Nonane component.3-Volatile oil component of Sweet Lime leaves were characterized alone by the presence of Carine and p-Terpineol components.4-Volatile oil component of Sweet Lime and Cleopatra mandarin leaves were characterized alone by the presence of Neral component.5-Volatile oil component of Santara Mandarin and Satsuma mandarin leaves were characterized alone by the presence of a-3 Dimethyl component.6-Volatile oil component of Rough Lemon, Lemon and Citron (Citrus medica var. Kabbad) leaves were characterized alone by the presence of Nerolidol component.7-Volatile oil component of Rough Lemon, Lemon and Trifoliata Orange leaves were characterized alone by the presence of Cineol component.8-Volatile oil component of Gaffa Orange, Blood Orange and Cleopatra Mandarin leaves were characterized alone by the presence of Geranial component.9-Volatile oil component of Gaffa Orange, Blood Orange, Santara Mandarin and Satsuma Mandarin leaves were characterized alone by the presence of Cis 2 penta 1 al component.10-Volatile oil component of Gaffa Orange, Blood Orange and Balady Mandarin leaves were characterized alone by the presence of Trans Ocimene component.11-Volatile oil component of Gaffa Orange, Succary Orange, Blood Orange and Balady Mandarin leaves were characterized alone by the presence of Octanol component.12-Volatile oil component of Gaffa Orange, Succary Orange, Sour Orange and Balady Mandarin leaves were characterized alone by the presence of Sabnene component.13-Volatile oil component of Sour Orange, Santara Mandarin, Lemon and Sweet Lemon leaves were characterized alone by the presence of Camphene component. Isolation and Identification of DNA:The results revealed also the presence of 10 positive and 2 negative molecular markers for genotypic identification. The dendrogram for the genetic distances were of the ISSR technique revealed that the highest similarity was between the Balady mandarin and trifoliata orange genotypes. The lowest similarity index recorded was observed between Kabbad and Kumquat genotypes. The dendrogram resulting from the ISSR technique separated the ten Citrus genotypes into two clusters; cluster 1 included both of Balady lime and Kumquat, cluster 2 included; two subclusters; the first subcluster included Naffash and Kabbad with Shaddock alone and sour orange with grapefruit. The second subcluster include Balady mandarin with trifoliata orange and

Jaffa orange alone.