Physiological and histological studies on propagation of some olive cultivars

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2001-2002 seasons at North Sinai Research Station at El-Sheikh Zuwayid, Desert Research Center (D.R.C), Egypt to shed light on rooting ability of olive cuttings cvs. Manzanillo and Picual.Possibility of producing standard nursery plants (survived rooted cutting) through enhancing rooting ability in stem cuttings by applying some preplanting treatments on mother plants or cuttings is the purpose of this study.Moreover, changes in some chemical components namely phenols and indoles were determined in cuttings.Furthermore, anatomical studies were also carried out for the basal portion cuttings of both cultivars to shed light on difficulties or success in rooting of the cuttings.Subterminal leafy cuttings with 12 to 15cm. length and the four terminal leaves which were retained, were prepared in (February — June — October) for Manzanillo and Picual olive cultivars.The obtained results in this work could be summarized as follows:1-Cuttings taken from Manzanillo cv. gave significantly an increase in rooting percentage, number of roots and average root length as compared with those taken from Picual cv.2-Cuttings planted in June had the highest rooting percentage, number of roots and average root length,followed in descending order values by those taken in October, while February recorded the lowest values during the two seasons of study.3-Cuttings collected from shaded mother trees gave a significant increase in rooting percentage, number of roots and average root length in comparison with those taken from unshaded mother trees (control).4- Moreover, dipping cuttings in IBA at 6000 ppm for 5 secondes was the most effective IBA preplanting treatment that increased rooting percentage, number of roots and average root length of cuttings as compared with other preplanting treatments.5- As for the interaction effect:(a)Shaded cuttings from mother trees of Manzanillo cv. which planted in June and treated with IBA at 4000 ppm and also those taken from Picual cv. and treated with IBA at 6000 ppm, significantly gave the highest rooting percentage.(b)whereas June shaded cuttings which treated with IBA at 6000 ppm significantly possessed the longest roots.6- Manzanillo cuttings produced higher value of survival percentage, number of sprouted shoots and average shoot length per rooted cutting as compared with those taken from Picual cv.7- June planting exhibited the highest value of survival percentage, number of shoots and average shoot length.