

Rapid Proliferation of Tissue Culture Using of Olive (*Olea Europea L.*) cv.Zard

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Abstract : This research is studying the effects that various densities of Zeatin, and BA hormones may have on the scale of transformation of plant nodes to new shoots, among seedlings produced by seed germination, and also surveys the amount of produced shoots and their lengths, inside the specific Olive seed lab medium (OM). It is also concerned with the effects that various densities of IBA hormone, and inoculating the shoots with *Agrobacterium Rhizogenez A4* can have on shoots' root production. This is a totally random research, and each attendance group has had three occurrences, and ten samples per a hectare. The average amounts have been compared using Duncan's test method, which was done in 5% level. The results indicated that the highest rate of transformation of micro samples to shoots happened in the seed germination environments, containing Zetain with 5 mg, and also 15 mg per a liter densities. (respectively, 95% and 94%), while the highest rate of plants' stem production ,in micro samples, happened in the lab medium environments with 5mg per a liter Zetain density (4.5). In lab medium environments with 15 mg Zetain per liter, a decrease was observed in the number of produced stems (3.88). According to the produced stems' lenght, the longest stem length was observed in environments with 5 mg and also 15 mg per a liter Zetain, and 25 mg per a liter BA densities (respectively, 8.45 cm, 45.66 cm, 8.53 cm). Meanwhile, the lowest amount of transformation of micro samples to shoots, the lowest number of produced shoots, and the shortest shoots were observed in the environments without any hormones (respectively, 3.32 cm, 1.13, 19.66%). The results of root production in Olive indicated that attendance groups which were exposed to different hormones did not vary, and *Agrobacterium Rhizogenez A4* had no effect on them, as well. The lowest root's growth rate (22%) happened in environments without any hormones and also, in environment with *Agrobacterium Rhizogenez A4* (19.66%). The largest number of roots was observed in the environments, containing *Agrobacterium Rhizogenez A4* plus IBA (10 mg/l) and *Agrobacterium Rhizogenez A4* plus IBA (10 mg/l), (respectively, 8.46 and 8.70), which had a significant difference with environments merely containing 10 mg and 20 mg of IBA per a litre (respectively, 3.06 and 3.2). So it can be concluded that even though *Agrobacterium Rhizogenez A4* had no impact on root's growth among shoots, it had an impact on the number of produced roots. It should be noted that even when the environment contained merely *Agrobacterium Rhizogenez A4* without any hormones, only (1.16) roots were produced, which is significantly different from the attendance group with hormones (1.06).

Keywords : olive-effect of hormones-germination of seed, densities of zeatin, BA hormones, agriculture

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