



## **Best CIHEAM Master Thesis 2007**

### **Propagation techniques and reduction in the juvenile period in the olive breeding**

**Milad El Riachy** (*Lebanon*)

CIHEAM-MAI of Zaragoza

**Director of thesis**

Luis Rallo Romero  
Lorenzo León Moreno

## **Abstract**

The raising of seedlings is a key process in fruit breeding. This process begins with the germination of the seed, then the growth of the generated plant and finally the propagation of the selected genotypes. All these phases are of great importance especially in the case of the olive tree species, in which the long juvenile period has been the main cause of the delay of the genetic breeding. In the present work different treatments have been applied to cultivated cultivars with the aim to improve different aspects related to these growing phases. This will help to improve the efficiency of the olive breeding program that is carried out in Cordoba since 1991. The best results have been obtained applying the general procedure of germination, which consist in olive harvesting, dispulping, washing, breakage of the stone, extraction of the seed, disinfection, sowing, stratification and at the end seeds are placed in germination rooms for germination. Other results obtained such as the reduction of the period of stratification, the direct germination in greenhouse, the election of a suitable substrate and the study of the relation between the time of maturation and the optimal germination of the seeds, have also contributed to improve and to simplify the initial management of the plants. The germination of the seeds of wild olives has also been studied and elevated percentages of germination, that surpass those of the cultivated varieties, have been obtained when the harvested seeds are of good quality. The effect of the solarization has also been studied as a method to increase the growth of the olive seedlings and, therefore, to shorten the juvenile period of the olive tree. The results obtained indicate that the solarization treatment increased the growth of the seedlings. A higher growth in height and trunk diameter in the solarized trees with respect to not solarized was obtained. Finally the rooting ability of some genotypes previously selected in the breeding program has been characterized. A high variability between them was obtained, although. However, most of them showed good propagation capacity by semi hardwood cuttings. This character could be of paramount importance for the diffusion of the new varieties.