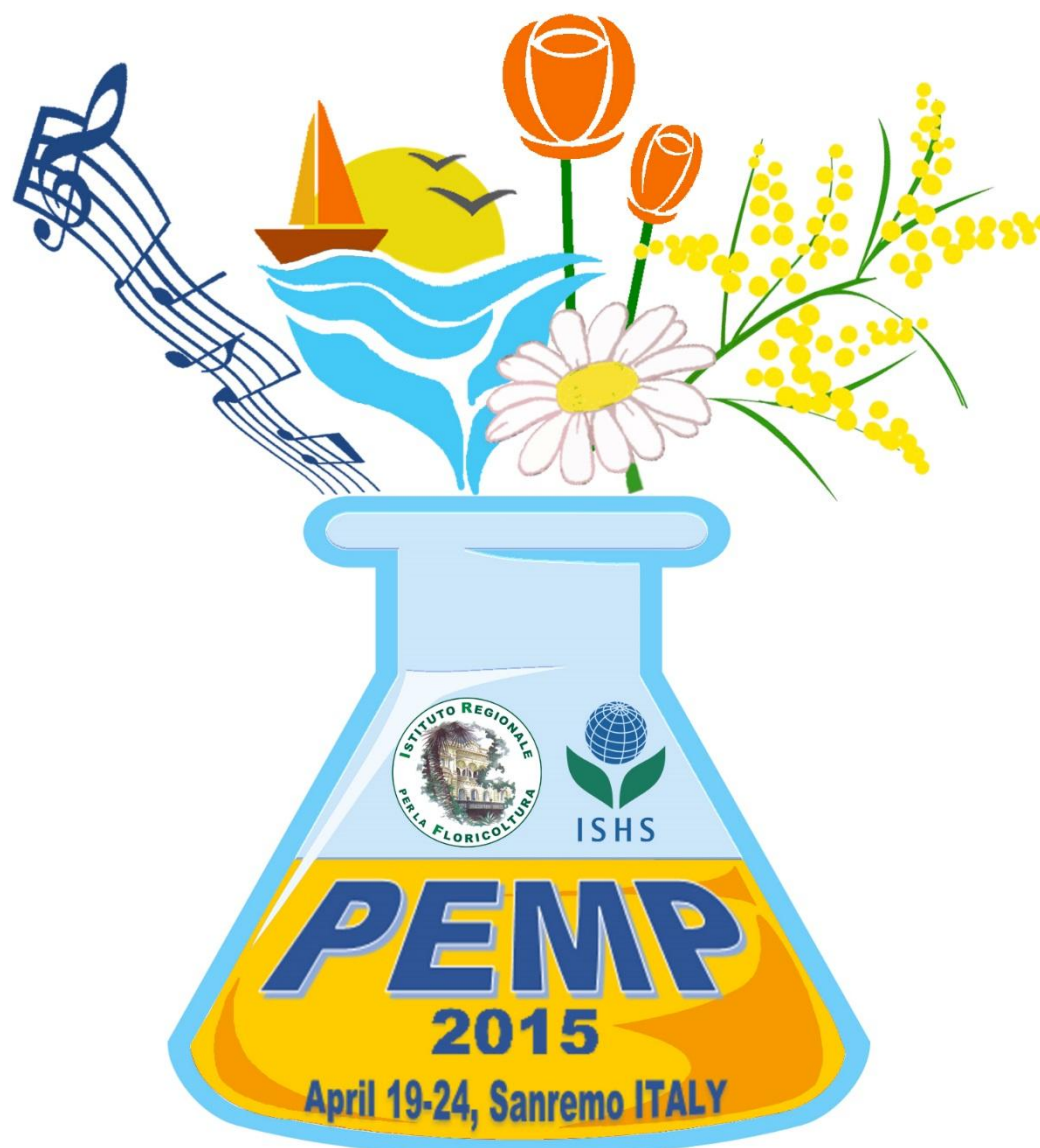




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## ABSTRACT FORM





## ***IN VITRO* ROOTING AND ACCLIMATIZATION OF SICILIAN HYPERICUM PERFORATUM**

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*Hypericum perforatum* L. (also known as St. John's wort) has been used for over 2000 years as a traditional medicinal plant because of different bioactive compounds (hyperforin, hypericin and pseudohypericin) with documented antidepressant activity. Plantlets mass production (rooted or unrooted) with high and uniform content of these secondary metabolites has been recently enhanced through *in vitro* culture but, in many cases, the process has been stopped at the multiplication phase with few available information on rooting and acclimatization. The definition of a complete micropropagation protocol would add knowledge on nursery activities aimed to the mass production of genotypes with peculiar characteristics (hardiness, low exigencies, rapid growth, etc.). Therefore, a study was conducted in order to set up an efficient *in vitro* rooting and acclimatization protocol of a *H. perforatum* Sicilian genotype well-adapted to south Mediterranean conditions (high radiation and temperatures).

Eight weeks old seedlings were used as explant sources (nodal segments) for *in vitro* initiation culture. Aseptic explants were transferred on to a Murashige and Skoog (MS) basal medium supplemented with 4.44  $\mu\text{M}$  6-benzyladenine (BA). Microshoots were then transferred on to specific culture media for *in vitro* rooting in order to evaluate the nutrients concentration and different auxins effect. Full and half-strength MS + 0, 5.71  $\mu\text{M}$  indole-3-acetic acid (IAA) or 4.9  $\mu\text{M}$  indole-3-butyric acid (IBA) were compared. Microshoots rooting rate, number of roots/shoot, root length and weight of rooted shoots were recorded after 40 days. Nutrients concentration of the media and the two different auxins significantly affected *in vitro* rooting of *H. perforatum*. The highest rooting rate was achieved on a half-strength hormone free MS, a higher number of roots on to half-strength MS supplemented with 4.9  $\mu\text{M}$  IBA, whereas the longest roots were recorded on the half-strength MS enriched with 5.71  $\mu\text{M}$  IAA. Rooted plantlets were *ex-vitro* acclimatized by transferring them into greenhouse in plastic pots filled with peat, perlite and their mixture (1:1, v/v) under mist (85% relative humidity). Acclimatization rate, after 40 days transplanting, was higher for plants grown in peat/perlite substrate.