



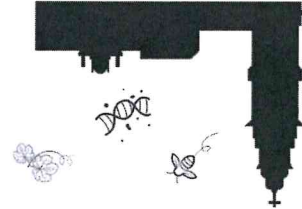
**XIV CONVEGNO NAZIONALE
SULLA BIODIVERSITÀ
1ST INTERNATIONAL CONFERENCE ON
MEDITERRANEAN BIODIVERSITY**

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B.3 The ENEA microbial culture collection in the PNR SUS-MIRRI.IT

Cuna D.^{1*}, Ambrico A.², Molino A.³, Bevilino A.⁴, all the PNR SUS-MIRRI.IT Consortium⁵

¹ENEA, Dept. For Sustainability, Brindisi Research Center, S.S. 7 Appia, 72100 Brindisi – Italy

²ENEA, Dept. For Sustainability, Trisaia Research Center, S.S. 106 Jonica, 75026 Rotondella – Italy

³ENEA, Dept. For Sustainability, Portici Research Center, P.le E. Fermi 1, 80055 Portici – Italy

⁴ENEA, Dept. For Sustainability, Casaccia Research Center, Via Anguillarese 301, 00123 Rome – Italy

⁵Italian Microbial Resource Research Infrastructure - MIRRI.IT

*daniela.cuna@enea.it

Keywords: ENEA microbial culture collection, microbial consortia, sustainability, bioeconomy.

ENEA is partner of the SUS-MIRRI.IT project being involved with four Operational Units. ENEA microbial collection (EMCC) has been created over 30 years by an interdepartmental team of researchers that has collected microbial strains (bacteria, fungi, microalgae, microbial consortia, virus) from different environments (contaminated sites, hypogea and archaeological sites, food, lake sediments, sea, soil, rhizosphere, water). The microbial collection has several environmental applications: i) sustainability and protection (soil, bioremediation, restoration of artistic heritage, biorefinery), ii) plant disease suppression and plant growth promotion, iii) production of high-value and bio-based molecules for the development of a sustainable and circular bioeconomy (nutraceutical, cosmeceutical, pharmaceutical and green chemistry sectors), iv) a vegetable virus with applications in the biomedical sector. In addition, molecular tools as Next Generation Sequencing (NGS) and metagenomic approaches have increased the detection of biodiversity in different environments. In the agri-food sector, the large EMCC include rhizobacteria with plant-growth promoting activity, nitrogen-fixing strains, biocontrol agents against several phytopathogenic fungi. The microbial strains were characterized and used in single applications and in SynCom in several sectors. A brief overview of the EMCC and its potential application for the development of the bioeconomy and biosustainability will be presented. <https://www.enea.it/it/Stampa/comunicati/ambiente-il-grande-archivio-enea-di-microorganismi-tra-le-eccellenze-della-ricerca-europea>

B.4 Microbes as biostimulants in Mediterranean plants: the effect of *Azospirillum* *baldaianorum* Sp245 in cuttings of olive (*Olea europaea* L., cultivar Leccino)

Toffanin A.^{1*}, Pappalètere L.², Bartolini S.²

¹Department of Agriculture, Food and Environment (DAFE), University of Pisa, Via Borghetto 80, 56124 Pisa, Italy
²Crop Science Research Center (CSR), Sant'Arna School of Advanced Studies, Piazza Martiri della Libertà 33, 56127 Pisa, Italy

*annita.toffanin@unipi.it

Keywords: PCR, bacterial biostimulant, agamic propagation, olive, semi-hardwood cuttings.

The research assesses the effectiveness of *Azospirillum baldaianorum* Sp245 in stimulating the induction processes related to adventitious root formation in the Leccino olive cultivar (*Olea europaea* L.). Semi-hardwood cuttings were collected at different sampling times and subjected to root-inductive treatments with *A. baldaianorum* strain Sp245 (AZO) and indole-3-butyric acid (IBA), the most employed synthetic auxin used in nursery production of olive plants. Histological assays were carried out to identify the main cellular changes leading to adventitious root formation. The adopted protocol allowed to identify the crucial histological events related to the emergence of root primordia within a few days of rooting treatments. *A. baldaianorum* Sp245 showed a strong attitude as biostimulant and as a potential alternative rooting inducer. In particular, the microscopic observations carried out up to 24 DAT with IBA and AZO allowed for identifying the phases leading to the formation of adventitious roots, as a function of rooting treatments, substrate type, and experimental seasons. The positive responses of semi-hardwood cuttings of Leccino cultivar to AZO provide the possibility of replacing IBA and develop perspectives in a context of organic nursery systems where alternative compounds, able to improve the rooting rate of cuttings, could substitute the non-permitted synthetic rooting agents.