EVERGREEN

LIFE13 ENV/IT/000461

ENVIRONMENTALLY FRIENDLY BIOMOLECULES FROM AGRICULTURAL WASTES AS SUBSTITUTES OF PESTICIDES FOR PLANT DISEASES CONTROL

>> background

Among the most harmful phytopathogens which threaten crops, causing severe losses and including many quarantine for Europe, there are bacteria and nematodes. Current pesticides for controlling these plant pathogens are definitely unsatisfactory and highly pollutant.

>> objective

Demonstrating the in vitro and in vivo efficacy and reliability of polyphenolic-based biomolecules extracted from agricultural non-food biomasses and wastes as disease control products against phytopathogenic bacteria and nematodes, to replace current pesticides and application of copper salts in agriculture.

>> expected results

- improved soil fertility
- long-term reduction of the reservoir of environmental antibiotic-resistant bacteria.
- reduction of pesticides residues on fruit and vegetable for human and animal consumption.
- reduction of point-source and diffuse pollution from the disposal of agricultural vegetable wastes in the environment.
- short-term reduction of pesticide- and drug-resistant bacteria and nematodes in agricultural sites.
- reduction of costs for disposal of agricultural non-food vegetable biomasses and wastes.
- reduction of energy consumption used for remediation processes of pesticides-contaminated soils
- increased soil microbial diversity
- long-term reduction of pollution in agricultural soils due to the use of conventional pesticides and of pesticides pollution in water bodies.
- reduction of toxicological impact of pesticides pollution on terrestrial, aerial and aquatic fauna.

- **coordinator** -

>> info

| dr. Stefania Tegli - stefania.tegli@unifi.it