

PON “Ricerca e Innovazione” 2014-2020”
Azione IV.4 - “Dottorati e contratti di ricerca su tematiche dell’innovazione” e
Azione IV.5 - “Dottorati di ricerca su tematiche Green”
Corso di Dottorato in
Sustainable Agricultural and Forestry Systems and Food Security

AZIONE:

Azione IV.4 – BORSE DI DOTTORATO DI RICERCA AGGIUNTIVE SU TEMATICHE DELL'INNOVAZIONE

o

Azione IV.5 – BORSE DI DOTTORATO DI RICERCA AGGIUNTIVE SU TEMATICHE GREEN

Referente: Giuliano Bonanomi

Titolo: Biochar and smoke-water as new tools for pest and plant disease control

Descrizione della proposta progettuale

The fourth range cultivation system, as well as the viticulture, are primary sectors that require continuous innovation to adapt to market dynamics. In these cultivation systems, the production of high quality food required new tools to reduce and optimize the use of pesticides. In this context, the pyrolysis of waste organic feedstock yields the solid fraction biochar and the associated smoke-water, and recent studies have shown their potential for control of pest and plant diseases. Biochar can be applied to soil while smoke water can be delivered directly to soil, seeds, or plant canopy to exert its biological activity. Objectives of the project are: i. determine the biological activity of biochar and smoked water on plant pathogens, insects and nematodes of agricultural importance; ii. define the conditions for a proper and efficient use (dosages, types, application mode) in fourth range cultivation systems and in viticulture; iii. evaluate biochar and smoke water impact on beneficial microbiota associated with agricultural crops; iv. quantify the possible presence of toxic substances and evaluate their effects on products quality.

- **Time to be spent in the private company BiokW Srl: 6 months**
- **Time to be spent abroad in a research institution: 6 months**