

PERSONAL INFORMATION

ROBERTO ALTIERI



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Nationality: Italian

QUALIFICATION

Master Science (M. Sc.) *Summa cum laude* in Agriculture Science, University of Perugia, Italy, 1990;

Doctor of Philosophy (Ph.D.) in Agriculture Chemistry, University of Bari, Italy, 1995;

Diploma of “Agronomist”, University of Perugia, Italy, 1991;

Diploma as Teacher for Italian High Schools on the following subjects: “*Natural science, chemistry and geography*”, “*Science, agrarian mechanics, business management, plant pathology and entomology*”, “*Agrarian chemistry*”, as result of open selections, 1991.

Mother tongue	Italian				
	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English (*)	C1	C1	C1	C1	C1

(*) SELF ASSESSMENT

EMPLOYMENT HISTORY

1991-2000, Professional activity as “Agronomist”.

1991-2000, Teaching “*Natural science, chemistry and geography*” for over 7 years in several Italian High Schools (Perugia Province).

2000 – Current, Researcher at CNR-ISAFOM.

PLACE OF CURRENT EMPLOYMENT

Institute for Agriculture and Forest Systems in the Mediterranean (ISAFOM), National Research Council (CNR), Perugia, (Italy), Via della Madonna Alta, 128 - 06128

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POSITION

Researcher (since 2001 with permanent position).

Primary research area includes development of novel strategies for bioremediation of recalcitrant effluents (agro-industrial waste, such as olive mill waste) for agronomical purposes.

PARTICIPATION AT INTERNATIONAL TRAINING/RESEARCH PROGRAMS

- Visiting fellow as post-graduate student (April-October 1994) at Agronomy Department of Purdue University (West Lafayette, Indiana, USA) and National Soil Erosion Research Laboratory of United States Department of Agriculture (USDA), West Lafayette, Indiana, USA.
- Short course on Agroecology (16-25 June, 1997) at Berkeley University of California, USA, chaired by Prof. Miguel Altieri, dealing with organic farming and composting of organic waste.
- International Visiting Fellow (4-26 May 2005) at University of Western Sydney (UWS), New South Wales, Australia, within the framework of the three-annual project "*Environment Technology – A Preparatory Model System for Recovery, Reuse and Recycling of Waste Products in Oleiculture*", coordinated by Prof. N. Nair, Centre For Horticulture & Plant Sciences, (UWS).

MAIN SPECIFIC LAB EXPERTISES

- Advanced chromatography (GC, HPLC, IC) and spectroscopic techniques (IR, FT-IR, NMR, X-ray Diffraction Analyses, Atomic Absorption), for analysis of soil and organic waste extracts (Humic and Fulvic acid fractions, Humic-like substances).
- Sampling, extraction and purification methods for elemental analyses
- Running fit-for-purpose self-made Lab-equipment for respirometric studies on composting, with particular reference to SOUR and DRI analyses and tests for determination of *ultimate biodegradability* of plastic polymers conducted under aerobic composting condition (according to the UNI EN ISO 14855-1) or compostability/disintegrability of bio-based plastic items, under simulated composting environment at Lab-scale (according to the UNI EN ISO 14045).

INTERDISCIPLINARY AREAS OF EXPERTISE:

- Soil Science
- Agroecology.
- Fate of xenobiotics (pesticides and heavy metals) in the environment (soil) and plant tissues.
- Chemistry, microbiology and biotechnology of composting process.
- Bioremediation
- Chemical-physical and biological characterization of different agro-industrial waste (pig slurries, food industry residues, bottom and fly ashes from fluidized bed-combustion (FBC) power plants, olive mill waste).
- Horticulture of edible mushrooms with special reference to development of selective substrates.
- Prototyping of Lab-scale bio-reactors, such as composting systems (COMPOSTER), equipments for assessing the biodegradability of bio-plastics (BIODEG), according to the UN EN ISO 13432:2002, 14045:2003, 14855-1:2013, 17556:2012, 14852:2004 European Standards as well as stability of compost (IRDP, SOUR).

CURRENT RESEARCH

The major focus of current work is on the management of solid and liquid organic waste streams coming from source selected urban waste and/or agro-industry, using bioremediation technologies for production of high quality compost.

MAIN AREAS OF INTEREST

- Chemical-physical and microbiological characterization of raw and composted olive mill waste (OMW); evaluation of biological stability and maturity of amendments produced by oxygen-driven biological processes;
- Evaluation of the agronomic performances of OMW composts in field and nursery trials for different crops;
- Studies of the impact of raw and composted OMW on native soil organic matter in long-term trials, using chemical-physical and microbiological assessments;
- Evaluation of carbon sequestration in soil;
- Evaluation on the use of OMW compost as substitute for peat in growing media for potted or soilless crops: assessments of crop production in commercial cultivation trials;
- Evaluation of OMW as an ingredient of the growth media for mushroom cultivation (*Pleurotus ostreatus*, *Agaricus bisporus*): assessments in commercial cultivation trials;
- Evaluation of the use of OMW compost as surrogate for mineral fertilization in agriculture;
- Evaluation of the suppressiveness of OMW compost against the main soil-borne pathogens in horticultural crops;
- Designing and setting up of fit-for-purpose self-made Lab equipments for research on composting.

MAJOR RESEARCH PROJECTS CARRIED OUT:

- Italian Ministero Università Ricerca Scientifica e Tecnologica (MURST), Project: “Recycling of waste effluents from Agro-industrial systems”, Line: “Olive mill waste”, Activity: “Set up of methods of using olive mill waste as growth media for olive cuttings”, **(1998-2002)**.
- European Union, Life Environment Project: 00 ENV/IT/000223 TIRSAV (“Tecnologie Innovative per il Riciclaggio delle Sanse e delle Acque di Vegetazione”) in collaboration with Parco Nazionale del Cilento e Vallo di Diano, Salerno, Italy, **(2001-2004)**.
- ARSIA Toscana Agency, Italy, Project: “Soluzioni alternative allo spandimento in campo dei sottoprodotti dei frantoi” (Alternative solution to land spreading of olive mill waste), in cooperation with Biology and Environmental Science Departments, University of Siena, Italy, **(2005-2007)**.
- UNAPROL, Italian Olive Oil Consortium, Italy, Project: “Analisi della fattibilità economica dell’impiego della tecnologia CNR-MATReFO per la valorizzazione agronomica ed energetica delle biomasse di scarto dei frantoi oleari” (First assessment of economic suitability of CNR-MATReFO technology for olive mill waste recycling for agronomic and energetic purposes), **(2006-2007)**.
- European Union, Framework Program (FP) 6, Collective Research Project “INtegrated Approach for Sustainable Olive Oil and table olive Production” (INASOOP) Coll-CT-2003-500467, **(2006-2007)**.
- European Union, Life Environment Project: 05ENV/IT/000845, TIRSAV PLUS, in collaboration with Parco Nazionale del Cilento e Vallo di Diano, Salerno, Italy, **(2007-10)**.
- European Union, Framework Program (FP) 7, Regions Coordination Action Project: “Sustainable Innovation and Treatment in Industrial Waste Water Clusters” (STInno), **(2009-2012)**.
- Regione Toscana Agricultural Agency, Framework “Bando multimisura per progetti Integrati di Filiera (PIF), Ordinance n. 604/2011. Reg. CE 1698/05 - PSR 2007/2013”, Project: “Creazione di un nuovo ammendante, sostitutivo della torba utilizzata nel vivaismo, ottenuto dalla

- trasformazione degli scarti da frantoio oleario” (“Making new amendments from olive mill waste as peat surrogate for potted plant production in nurseries”), Acronym: SAN-SOIL, **(2012-13)**.
- Regione Toscana Agricultural Agency, Framework “Bando multimisura per Progetti Integrati di Filiera-PIF” (“Multi-call for integrated supply chain projects) - Fase 2 (2nd Step), Ordinance n. 161/2012. Reg. CE 1698/05 - PSR 2007/2013”, Project: “IGAN (Italian Green Agri-Net) “Promozione di una rete di imprese vivaistiche (IGAN) basata sull’allargamento ed il consolidamento della filiera di cui al PIF in corso di attuazione denominato SAN-SOIL e sulla valorizzazione della produzione tramite la diffusione della certificazione ambientale MPS, l’ammodernamento delle aziende per rendere la produzione più ecocompatibile e la sperimentazione di un prodotto innovativo costituito dal vaso biodegradabile (Eco-Pot)” “Promotion of a plant nursery net, based on the enrichment and expansion of the supply chain of plant nurseries (based on the ongoing PIF, called SAN-SOIL) and based on the enhancement of plant production through the MPS environmental certification (More Profitable Sustainability), the modernization of the plant nursery companies, and the investigation on innovative biodegradable pots (Eco-pot)”, Acronym: IGAN - ECO-POT, **(2013-15)**.
 - European Union, Framework Program (FP) 7, Collaborative Project: “Liquid and gas Fischer-Tropsch fuel production from olive industry waste: fuel from waste”, Acronym (FFW), **(2012-2015)**.
 - Programma di Sviluppo Rurale per l’Umbria 2014-2020 – Misura 16 – Sottomisura 16.1, collaboration within the framework of the project: “Valorizzazione delle risorse legnose e dei sottoprodotti agricoli e forestali, attraverso la creazione di un modello per la produzione e commercializzazione di prodotti energetici”, acronym AGREEGREEN, **(2018-2020)**.
 - PRIMA 2019, Call Section 1: Farming Systems, Innovation Action (IA); Topic 1.2.2 Sustainability and Competitiveness of Mediterranean Greenhouse and Intensive Horticulture, partnership as scientific responsible ISAFOM-CNR, for the project SusMedHouse “Efficient, Eco-Friendly, Sustainable Mediterranean Greenhouse Integrated with Artificial Intelligence, Hi-Tech Automation and Control System”, selected for funding on 31/10/2019; start project 01/03/2020, **(2020-2023), in progress**.
 - Piano Nazionale di Ripresa e Resilienza (PNRR), National Research Centre for Agricultural Technologies (AGRITECH), Mission #4, partnership as scientific responsible for ISAFOM-CNR-Perugia within the framework of **Spoke 8 - Circular economy in agriculture through waste valorisation and recycling, WP 8.3: Nutrient and organic matter recovery from wastes to reduce the use of agrochemicals and closing waste cycle, Task 8.3.2: Valorisation and biological regeneration of wastes as resources, organic fertilisers, or amendments to improve carbon storage and soil quality, and Task 8.4.2: Multidimensional sustainability assessment of circular technologies in agriculture (2022-2025), in progress.**

RESEARCH PROJECTS RECENTLY SUBMITTED:

- European call **LIFE18 ENV/IT/000306**, partnership as scientific responsible ISAFOM-CNR for the project “Composting Activities to Recycling Bio-waste for Organic Nutrition, acronym: CARBON; **not granted**.
- Within the framework of the call for proposal for Relevant National Interest Research Projects (**PRIN 2017**) from the Italian University and Research Department, leadership as *Associated*

Investigator for the project: *Eco-sustainable production of bioplastics and high added value products from micro and macroalgae* (acronym MAREA - MAterial REcovery from Algae). Principal Investigator: Dr.ssa Raffaella Casotti; **not granted**.

- European call **BBI-RIA 2018** (Bio-Based Industries - Research and Innovation Action), **Topic BBI.2018.SO3.R10**: *Develop bio-based packaging products that are biodegradable/compostable and/or recyclable*, partnership as scientific responsible fISAFOM-CNR for the project “*STRETCHABLE BIO-BASED POLYMER FILMS AND LABELS*, acronym: *STRETCH-B*”; **not granted**.
- Within the framework of the **Italian** call *FONDO INTEGRATIVO SPECIALE PER LA RICERCA (FISR) 2019 – Area Blue Growth* partnership as scientific responsible ISAFOM-CNR, for the project *Eco-sustainable production of bioplastics and high value added products from micro and macroalgae* (acronym MAREA - MAterial REcovery from Algae); **not granted**.
- Within the framework of the **Italian** call *FONDO INTEGRATIVO SPECIALE PER LA RICERCA (FISR) 2019 – Area Green Chemistry* partnership as scientific responsible ISAFOM-CNR, for the project “*Synergy of green technologies for the catalytic production and use of high value added chemical compounds, monomers, solvents, platforms and plant biomass materials*” (acronym GREENSYNCHEM), **not granted**.
- European **H2020** call **CE-SC5-28-2020**: *Develop and pilot circular systems in plastics, textiles and furniture sectors*, partnership as scientific responsible ISAFOM-CNR for the project: “*A circular bioplastic economy for the future – Loop design and demonstration of its functionality in the praxis*”, acronym *BIOLOOP*, **not granted**.
- European **Horizon 2020** call in the *Framework Programme – GREEN DEAL: Testing and demonstrating systemic innovations in support of the Farm-to-Fork Strategy*, **TOPIC ID: LC-GD-6-1-2020 Subtopic B. Achieving climate neutral food businesses by mitigating climate change, reducing energy use and increasing energy efficiency in processing, distribution, conservation and preparation of food (IA)**, partnership as scientific responsible ISAFOM-CNR for the project: *Take Planet decarbonized*, acronym: *TakePlanet* (Proposal: # 101037466), **not granted**.
- Within the framework of the call for proposal for Relevant National Interest Research Projects (**PRIN 2020**) from the Italian University and Research Department, leadership as *Associated Investigator* for the project “*ECO-design of BIOdegradable PLastics for a sustainable Use in Soil and Sea*”, acronym *ECO-BIOPLUSS*, **not granted**.
- **PRIMA 2022** call *Nexus WEFE - TOPIC: 1.4.1-2022 (IA) Predicting and testing options of socio-economic adaptation to declining Water-Energy-Food-Ecosystem (WEFE) resources in the Mediterranean Region*, partnership as scientific responsible ISAFOM-CNR for the project: “*Conversion of Rose Processing Effluent into Bioproducts with Bio-Circular Economic and Artificial Intelligence Predictive Models*”, acronym: *RoPEBio-AIM*, **not granted**.
- European **Horizon 2020** call **MISS-2022-01-02** “*Improving food systems sustainability and soil health with food processing residues*” partnership as scientific responsible ISAFOM-CNR for the project: “*Development of TEchnologies and pRocesses for maximising the benefit of food Residues with using AI for sustainable soil improvement at different regions*”, acronym: *TERRA*, **not granted**.
- Within the framework of the call for proposal for Relevant National Interest Research Projects (**PRIN 2022**) from the Italian University and Research Department, leadership as *Associated Investigator* for the project “*Re-use and valorization of organic biomass and by-products to obtain Bio-active agents and active Biopolymer coating as sustainable technologies for Agricultural system and for Food preservation*”, acronym: *BioAgriFood*, **not granted**.

AN OVERVIEW OF MY RESEARCH CARRIER PROVIDES EVIDENCE OF

- Considerable innovative research activities that have resulted in 94 publications + 3 acknowledgments (in referred scientific journal): 20 in ISI journals; 2 in non-ISI journal; 8 in other journals; 6 books/chapters in edited books; 20 scientific articles in refereed conference proceedings; 3 scientific articles in other conference proceedings; 35 extract of papers in referred conference proceedings.
- Ability to initiate and secure research funding amounting about **€ 1,500,000** from varied sources.
- Leadership role in enhancing research activity.
- Member of Scientific Committee of International Congresses to promote issues related to treatment and recycling of Mediterranean waste streams and by-products of agro-industrial activities, in an environmental-sensitive manner, such as:
 - the First Symposium IAMAW (International Association of Mediterranean Agro-industrial Waste) “*Agro-industrial by-products: waste or resource?*”, within the framework of Ecomondo Fair, October 29th 2009, Rimini, Italy.
 - the Second International Conference IAMAW (International Association of Mediterranean Agro-industrial Waste) within the framework of the Vth International Bioengineering Congress, 17-19 June 2010, Izmir, Turkey. Chairman of session #3 *Bioprocessing and Recycling*.

SOME OF MAJOR ACHIEVEMENTS IN RESEARCH ARE

- Developed an efficient, simplified, and cost-effective end-of-pipe composting method (SANSOIL) for bioremediation of olive mill waste (OMW) which led to the preparation of stable and mature compost. This procedure has been showed to be comparable to conventional composting systems, satisfying standard requirements set by regulators. It is particularly fitting for treatment of *humid olive husk* produced by *two phase* centrifugation system (olive oil decanter) which is more ecologically sustainable because it drastically reduces wastewater production and energy use in the olive mill. SANSOIL also provides technology to separate ground pits from the olive husk, thus giving added-value to OMW.
- Designed an efficient fertilizing program for olive orchard and short-term crops (*Lactuca sativa* and *Lycopersicon esculentum*) using olive mill waste compost as alternative to mineral fertilizing.
- Achieved significant boost in organic matter (organic carbon 40%, humic substances 58% and nitrifying bacteria, *Arthrobacter* spp. and α -*Proteobacteria* spp.) in olive orchard soil through long term trial involving annual OMW compost amendments. These parameters are widely recognized as indicators of the status of soil fertility.
- Demonstrated the suitability of olive mill waste mix as an effective and cheap alternative to peat substrate for strawberry soilless cultivation.
- Validation of a commercial-scale method for composting mushroom (*Agaricus bisporus*) substrates containing OMW as partial poultry manure alternative.
- Isolation from OMW enrichment culture of tannin-degrading bacterial strains (*Serratia marcescens*, *Pantoea/Enterobacter cloacae*, *Lysinibacillus fusiformis*, *Kocuria palustris*, *Tetrathlobacter kashmirensis* and *Rhodococcus rhodochrous*) which represent a reasonable resource for potential biotechnological applications.
- Designing and setting up of homemade Lab research equipment: the followings have been recently validated:

- 1) OCTOPUS, for assessing thermal diffusion and profiling temperature within biomasses put under composting
- 2) BIODEG, for assessing, under controlled composting condition, the ultimate aerobic biodegradability of plastic polymers, according to the UNI EN ISO 13432:2002, 14855-1:2013, 17556:2012, 14852:2004 standards.
- 3) COMPOSTER, fit-for-purpose Lab-scale bio-reactors able to reproduce aerated static pile composting; the main parameters of interest, such as: weight loss, air flow rate, temperature, moisture, O₂, CO₂, NH₃, H₂S and VOCs emissions in the exhausted air, are put under automatic control: hence, the system can weigh up in real time the true mass balance of the composting, thus speculating on the efficiency of the process in terms of carbon sequestration and reduction of CO₂ emission, which is the main contributor to global warming.
- 4) Two lab equipments for the evaluation of static and dynamic respirometric indexes as descriptors of the biological stability of organic waste, namely: SOUR (Specific Oxygen Uptake Rate) and DRI (Dynamic Respiration Index).

PROFESSIONAL ACTIVITIES

Extension/Teaching

- From 1991 to 2000 - collaboration with Società Cooperativa ECOS, Terni, Italy, giving consultancy in *“Conservation, research and restoration of the environment, town planning and green design”*. Particular attention was paid in teaching and training projects dealing with *“sustainable architecture”*, most of which supported or commissioned by the Umbrian Region or Italian sections of the World Wildlife Fund (WWF).
- In 1997 I was invited by the Studio Tecnico Associato AG.E.R., Perugia, Italy, to be Tutor to six graduate students, within the framework of a Professional Course on *“Specialist in crop protection and nutrition in organic farming”* funded by Umbria Region, Italy (Obiettivo 3, Asse 2, sub-asse 3, course code PG 96.03.23.004). The course lasted 800 hours, with the tutoring commitment of 439 hours. During the course I was also invited to give lectures (14 hours) on *“Chemical characterization of organic waste for potential agronomical uses”* and *“Fate of pesticides in soil and plants tissues”*.
- 2003 to current, I am a member of the Regional (Umbria, Italy) Panel of Tasters of Virgin and Extra Virgin Olive Oil.
- From 2002 to 2008 I was invited to be a member of several panel of examiners by the National Research Council. I assessed selection of candidates (graduate applicants) for temporary positions (scholarships and/or research grants) in the field of olive mill waste management and bioremediation.
- I was invited by the University of Teramo Italy, in December 2005, to be a member of a panel of examiners. I assessed two post graduate thesis submitted for the Master degree (First Level) in *“Production, Processing and Marketing of Olive Oil”*. The subjects of theses concerned *“Foliar fertilization in olive groves”* and *“Innovation in olive mill waste management: proposal for use in Abruzzo Region, (Italy)”*.
- From 2004 to 2005 I was invited to give three lectures by the University of Teramo, Italy for post graduate students, within the framework of the Master in *“Production, Processing and Marketing of Olive Oil”*. The subjects of lectures concerned *“Physiology in plant nutrition, with particular reference to olive groves”* and *“Olive mill waste management and bioremediation”*.
- I was invited to be a member of a panel of three international examiners by the University of Western Sydney, Australia, in September 2011. [I refereed a post- graduate thesis submitted for the degree of Doctor of Philosophy \(Ph.D.\) in the field of olive mill waste water bioremediation.](#)

- Within the framework of the [WasteReuse Life Project](#) and with the support and cooperation of the European Economic and Social Committee, I was invited to contribute with the presentation titled "Quality assessment of a simplified method for olive mill waste composting" delivered in the panel Session "Challenges and Solutions in the Mediterranean Countries and in the rest of Europe for the reuse of agricultural waste" of the WasteReuse Forum "[Towards Sustainable Use of Agricultural Waste](#)" held on May 12th, 2015 at the European Economic and Social Committee, Rue de Trèves 74, Brussels.
- On June 14-16, 2018, I was invited by Prof. Dr. Jutta Geldermann, Chair of Production and Logistics, as guest researcher at Georg-August-University Göttingen, to participate at the dissertation of the thesis "[Assessment of supply chain sustainability of bio-composite materials](#)" submitted by Francesco Castellani in order to acquire his doctoral degree from the Faculty of Economic Sciences at the University of Göttingen.

Research

- From 2001 to current I was invited for keynote lectures in several national and international conferences or seminars on olive mill waste management.
- Founding member (2008) and Secretary from 2008-2014 of the [International Association of Mediterranean Agro-industrial Wastes \(IAMAW, \[www.iamawaste.org\]\(http://www.iamawaste.org\)\)](#).
- Editor in-Chief of [World Journal of Agricultural Sciences](#), edited by "International Digital Organization for Scientific Information" ([IDOSI](#)), from 2010 to 2018.
- Invitations to serve as reviewer for the following international scientific Journals and/or Publishers: [Journal of Chemical Technology & Biotechnology](#), [Agriculture, Ecosystems & Environment](#), [Waste Management](#), [Journal of Environmental Management](#), [Journal of Agricultural and Food Chemistry](#), [Industrial & Engineering Chemistry Research](#), [Scientia Horticulturae](#), [International Biodeterioration & Biodegradation](#), [African Journal of Biotechnology](#), [Bentham Science Publishers e-Books](#), [Journal of Soil Science and Plant Nutrition](#), [International Journal of Environmental Science and Technology](#), [Crop Protection](#), [Journal of Waste Management](#), [CLEAN – Soil, Air, Water](#), [Chemosphere](#), [Journal of Agricultural Science and Technology](#), [HortScience](#), [Environmental Technology](#), [Chemical Speciation & Bioavailability](#)
- Nomination for candidature proposal for an ENI 2012 Award, section *Protection of the Environment* prize.

Source SCOPUS: **H-index: 14**, Total citations: 556

Source GOOGLE SCHOLAR: **H-index: 16**, Total citations: 844

PERSONAL ID (links to website)

[CNR Peolpe URL](#), [Scopus ID URL](#), [Researcher ID URL](#), [ORCID ID URL](#), [Google Scholar URL](#), [ResearchGate URL](#)

APPENDIX - Full list of scientific publications**Scientific articles in scholarly international refereed journals (ISI)**

1. Businelli M., **Altieri R.**, Giusquiani P. L., Gigliotti G., (1999). *Complexation capacity of dissolved organic matter from pig slurry: a gel filtration and dialysis study*, **Water, Air and Soil Pollution**, 113: 385-394. <https://doi.org/10.1023/A:1005084418217>
2. **Altieri R.**, Esposito, A. (2008). *Olive orchard amended with two experimental olive mill wastes mixtures: Effects on soil organic carbon, plant growth and yield*, **Bioresource Technology** 99/17: 8390-8393. <https://doi.org/10.1016/j.biortech.2008.02.048>
3. **Altieri R.**, Esposito A., Parati F., Lobianco A., Pepi M., (2009). *Performance of olive mill solid waste as a constituent of the substrate in commercial cultivation of Agaricus bisporus*. **International Biodeterioration & Biodegradation**, 63: 993-997. <https://doi.org/10.1016/j.ibiod.2009.06.008>
4. Pepi M., **Altieri R.**, Esposito A., Lobianco A., Borghini F., Stendardi A, Gasperini S., Focardi S. E., (2009). *Effects of amendment with olive mill by-products on soils revealed by nitrifying bacteria*. **Chemistry and Ecology**, Vol. 25/4: 293 – 303. <https://doi.org/10.1080/02757540903093173>
5. Pepi M., Lampariello L.R., **Altieri R.**, Esposito A., Perra G., Renzi M., Lobianco A., Feola A., Gasperini S., Focardi S.E., (2010). *Tannic acid degradation by bacterial strains Serratia spp. and Pantoea sp. isolated from olive mill waste moisture*, **International Biodeterioration & Biodegradation**, 64/1: 73-80. <https://doi.org/10.1016/j.ibiod.2009.10.009>
6. **Altieri R.**, Esposito A., (2010). *Evaluation of the fertilizing effect of olive mill waste compost in short-term crops*. **International Biodeterioration & Biodegradation**, 64: 124-128. <https://doi.org/10.1016/j.ibiod.2009.12.002>
7. **Altieri R.**, Esposito A., Baruzzi G., (2010). *Use of olive mill waste mix as peat surrogate in substrate for strawberry soilless cultivation*, **International Biodeterioration & Biodegradation**, 64: 670-675. <https://doi.org/10.1016/j.ibiod.2010.08.003>
8. Parati F., **Altieri R.** Esposito A., Pepi M., Lobianco A., Montesi L., Nair N., (2011). *Validation of thermal composting process using olive mill solid waste for industrial scale cultivation of Agaricus bisporus*, **International Biodeterioration & Biodegradation**, 65, 160-163. <https://doi.org/10.1016/j.ibiod.2010.10.009>
9. **Altieri R.**, Esposito A., Nair T., (2011). *Novel static composting method for bioremediation of olive mill waste*, **International Biodeterioration & Biodegradation**, 65, 786-789. <https://doi.org/10.1016/j.ibiod.2011.05.002>
10. Federici E., Pepi M., Esposito A., Scargetta S., Fidati L., Gasperini S., Cenci G., **Altieri R.**, (2011). *Two-phase olive mill waste composting: community dynamics and functional role of the resident microbiota*, **Bioresource Technology**, 102, 10965–10972. <https://doi.org/10.1016/j.biortech.2011.09.062>
11. Vitullo D., **Altieri R.**, Esposito A., Nigro F., Ferrara M., Alfano G., Ranalli G., De Cicco V., Lima G., (2013). *Suppressive biomasses and antagonist bacteria for an eco-compatible control of*

- Verticillium dahliae* on nursery-grown olive plants. **International Journal of Environmental Science and Technology**, ISSN: 1735-1472, Volume 10, Issue 2, Page 209-220. <https://doi.org/10.1007/s13762-012-0145-4>
12. Pepi M., Cappelli S., Hachicho N., Perra G., Renzi M., Tarabelli A., **Altieri R.**, Esposito A., Focardi S. E., Heipieper H. J. (2013), *Klebsiella* sp. strain C2A isolated from olive oil mill waste is able to tolerate and degrade tannic acid in very high concentrations, **FEMS Microbiology Letters**, 343, 105–112 <https://doi.org/10.1111/1574-6968.12136>
 13. **Altieri R.**, Esposito A., Baruzzi G., Nair T., (2014), Corroboration for the successful application of humified olive mill waste compost in soilless cultivation of strawberry, **International Biodeterioration & Biodegradation**, 88, 118-124. <https://doi.org/10.1016/j.ibiod.2013.12.006>
 14. Barbanera M., Lascaro E., Stanzione V., Esposito A., **Altieri R.**, Bufacchi M. (2016). Characterization of pellets from mixing olive pomace and olive tree pruning, **Renewable Energy** 88, 185-191, <https://doi.org/10.1016/j.renene.2015.11.037>
 15. Castellani F., Esposito A., Stanzione V., **Altieri R.**, (2016). Measuring the Biodegradability of Plastic Polymers in Olive-Mill Waste Compost with an Experimental Apparatus, **Advances in Materials Science and Engineering**, Volume 2016, [Article ID 6909283](http://dx.doi.org/10.1155/2016/6909283), 7 pages, <http://dx.doi.org/10.1155/2016/6909283>
 16. Chilosi G., Esposito A., Castellani F., Stanzione V., Aleandri M.P., dell'Unto D., Tomassini A., Vannini A., Altieri R., (2018). Characterization and use of olive mill waste compost as peat surrogate in substrate for cultivation of *Photinia* potted plants: assessment of growth performance and in vitro suppressiveness, **Waste and Biomass Valorization**, 9:919–928 <https://doi.org/10.1007/s12649-017-9855-7>
 17. Seggiani M., Altieri R., Puccini M., Stefanelli E., Esposito A., Castellani F., Stanzione V., Vitolo S., (2018). Polycaprolactone-Collagen Hydrolysate Thermoplastic Blends: Processability and Biodegradability/Compostability, **Polymer Degradation and Stability**, 150:13-24 <https://doi.org/10.1016/j.polymdegradstab.2018.02.001>
 18. Castellani, F., Esposito, A., Geldermann, J., Altieri, R. (2019). Life cycle assessment of passively aerated composting in gas-permeable bags of olive mill waste, **The International Journal of Life Cycle Assessment**, 24:281-296. DOI: <https://doi.org/10.1007/s11367-018-1514-0>
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