

CURRICULUM VITAE



FIRST NAME AND SURNAME	Mario Pagano
NATIONALITY	Italian
DATE OF BIRTH	05/12/1981
PHONE	+390555225934 (office)
E-MAIL	mario.pagano@cnr.it (secondary e-mail: mariopagano.81@gmail.com)
GENDER	Male
JOB INFORMATION	Permanent Researcher at the National Research Council (CNR), Institute of Research on Terrestrial Ecosystems (Florence, Italy).
PH.D.	Ph.D. in "Agro-biotechnology for Tropical Productions" (13/03/2012, three years) at University of Florence (Italy).
PH.D. ACTIVITY	The aim of the research was to investigate the effects of sound waves on maize roots during gravitropism. To accomplish this, I acquired a foundational understanding of biophysics techniques by utilizing a Micro-scanning LDV (Laser Doppler Vibrometer).
MASTER'S DEGREE	"Science and Agricultural Technologies" (28/04/2008, five years) at University of Florence (Italy).
MASTER'S THESIS	The aim of my thesis was to investigate the impact of integrating RFID (Radio Frequency Identification) microchips into grapevine rootstock. The treated plants were completely indistinguishable from untagged plants and could maintain this electronic feature throughout their entire lifecycle. With this capability, plants can be easily monitored and provide a wealth of information, including data regarding their origin, growth parameters, productivity, and more.
INTERNATIONAL COURSE	I attended the 15th Bologna winter school – Bioinformatics for biological complexity 2014 (University of Bologna, International Master Course in Bioinformatics – School of Science). I passed the final examination with marks 30/30.
MEMBERSHIPS	Academic corresponding at the Italian Academy of Forest Sciences, Full Member of the Royal Society of

Biology, Member of the Società Italiana di Spettroscopia NIR

AREA OF RESEARCH

Plant physiology, plant biophysics and Terahertz imaging/spectroscopy

SCIENTIFIC PAPERS

- GENNARI F., PAGANO M., TONCELLI A., LISANTI M.T., PAOLETTI P., ROVERSI P.F., TREDICUCCI A., GIACCONE M. (2023). Terahertz imaging for non-invasive classification of healthy and cimiciato-infected hazelnuts. HELIYON, DOI:10.1016/j.heliyon.2023.e19891.
- DI GIROLAMO F.V., PAGANO M., TREDICUCCI A., BITOSI M., PAOLETTI R., BARZANTI G.P., BENVENUTI C., ROVERSI P.F., TONCELLI A. (2021). Detection of fungal infections in chestnuts: a terahertz imaging-based approach. FOOD CONTROL, DOI: 10.1016/j.foodcont.2020.107700.
- PAGANO M., BALDACCI L., OTTOMANIELLO A., De DATO G., CHIANUCCI F., MASINI L., CARELLI G., TONCELLI A., STORCHI P., TREDICUCCI A., CORONA P. (2019). THz water transmittance and leaf surface area: an effective nondestructive method for determining leaf water content. SENSORS, DOI: 10.3390/s19224838.
- PAGANO M., PALLIOTTI A., BALDACCI L., CARELLI G., STORCHI P. (2018). A possible role of leaf vascular network in heat dissipation in *Vitis vinifera* L. BRAZILIAN JOURNAL OF BOTANY, DOI: 10.1007/s40415-017-0430-z;
- BALDACCI L., PAGANO M., MASINI L., TONCELLI A., CARELLI G., STORCHI P., TREDICUCCI A. (2017). Non-invasive absolute measurement of leaf water content using terahertz quantum cascade lasers. PLANT METHODS. DOI 10.1186/s13007-017-0197-z;
- PAGANO M., STORCHI P. (2016). Leaf vein density and photosynthetic rate in *Rosa*: is there a correlation?. BOLETIN DE LA SOCIEDAD ARGENTINA DE BOTANICA. Vol. 51(4): pp. 683-687;
- PAGANO M., CORONA P., STORCHI P. (2016). Image analysis of the leaf vascular network: physiological considerations. PHOTOSYNTHETICA, Vol. 54 (4): pp. 567-571, DOI: 10.1007/s11099-016-0238-2;
- PAGANO M., STORCHI P. (2016). Densità del sistema vascolare nelle foglie di *Vitis vinifera* L.: aspetti fisiologici. Acta Italus Hortus 19: pp. 99-100;
- PAGANO M., STORCHI P. (2015). Leaf vein density: a possible role as cooling system. JOURNAL OF LIFE SCIENCES, vol. 9 (7): pp. 299-303, 1934-7391 / 1934-7405;
- PAGANO M., STORCHI P. (2015). The image processing how method to investigate the leaf vascular network: a first study in *Vitis vinifera* (L.) INTERNATIONAL JOURNAL OF COMPUTER ENGINEERING and APPLICATIONS. Vol. IX, Issue II February, ISSN 2321-3469;
- PAGANO M., VALENTINI P., ZOMBARDO A., STORCHI P. (2014). Mobile device usage to highlight the value of a *Vitis vinifera* L. germplasm collection. JOURNAL OF FOOD, AGRICULTURE & ENVIRONMENT, vol. 12(2): pp. 706-709, ISSN 1459-0263;
- PAGANO M., STORCHI P. (2014). Analisi dell'immagine e modelli di "rete idraulica" nelle foglie: possibili applicazioni in viticoltura. RIVISTA DI AGRARIA, ISSN 1970-2639;
- LUVISI A., PANATTONI A., RINALDELLI E., PAGANO M., MANNINI F., GRIBAUDO I., BANDINELLI R. (2014). Application of tracking implants in grape hybrids: Adjustments to production practices and new health-compliant methodologies. COMPUTER AND ELECTRONICS IN AGRICULTURE, vol. 108: pp. 130-134, ISSN 0168-1699.
- BANDINELLI R., PAGANO M. (2013). The evolution of clonal heritage registry available at TOS.CO.VIT. ADVANCES IN HORTICULTURAL SCIENCE, vol. 3, pp. 96-97, ISSN: 0394-6169 / 1592-1573;
- PAGANO M., (2013). L'impiego di microchip (RFID) nel vivaismo viticolo: prospettive per una completa tracciabilità del settore. RIVISTA DI AGRARIA, n. 168, ISSN 1970-2639;
- LUVISI A., PANATTONI A., BANDINELLI R., RINALDELLI R., PAGANO M., TRIOLO E. (2012). Ultra-High Frequency transponders in grapevine: A tool for traceability of plants and treatments in viticulture. BIOSYSTEMS ENGINEERING, vol. 30: pp. 1-11, ISSN: 1537-5110;
- LUVISI A., PANATTONI A., BANDINELLI R., RINALDELLI R., PAGANO M., TRIOLO E. (2012). Biosecurity of kiwifruit plants: effects of internal microchip implants on vines for monitoring plant health status. NEW ZEALAND JOURNAL OF CROP AND HORTICULTURAL SCIENCE, vol. 40: pp. 1-11, ISSN 0114-0671 / 1175-8783;
- LUVISI A., PANATTONI A., BANDINELLI R., RINALDELLI E., PAGANO M. TRIOLO E. (2012). Propagative material of grapevine: RFID technology for supporting traceability of "basic" and "certified" material along the wine production chain. ADVANCES IN HORTICULTURAL SCIENCE, vol. 26(1): pp. 39-43, ISSN: 0394-6169 / 1592-1573;
- RINALDELLI R., BANDINELLI R., PAGANO M. (2011). Short- and long-term effect of sulphite on sucrose transport in grapevine (*Vitis vinifera* L.) leaves. An electrophysiological study. ADVANCES IN HORTICULTURAL SCIENCE, 25(4): pp. 245-252, ISSN: 0394-6169 / 1592-1573;
- LUVISI A., PANATTONI A., BANDINELLI R., RINALDELLI R., PAGANO M., TRIOLO E. (2011). Implanting RFIDs into *Prunus* to facilitate electronic identification in support of sanitary certification. BIOSYSTEMS ENGINEERING, ISSN: 1537-5110;
- LUVISI A., TRIOLO E., RINALDELLI E., BANDINELLI R., PAGANO M., GINI B. (2011). Virtual vineyard for grapevine management purposes: a RFID/GPS application. COMPUTER AND ELECTRONICS IN AGRICULTURE, vol. 75; p. 368-371, ISSN:0168-1699;
- LUVISI A., PAGANO M. (2011). Plants with implanted RFID microchips: Traceability and outlook in information management systems. In: ALISON R. MCADAMS. Radio Frequency Identification, ISBN/ISSN: 978-1-61122-416-0 (book);
- BANDINELLI R., PAGANO M., TRIOLO E. (2011). Il Sangiovese nell'ambito dei vitigni storici toscani premoltiplicati da TOS.CO.VIT. In: Il vivaismo viticolo: nuove performance di tracciabilità e sviluppi per il mercato vivaistico. Cenaia (PISA) p. 73-82;
- LUVISI A., PANATTONI A., BANDINELLI R., RINALDELLI E., PAGANO M., GINI B., TRIOLO E. (2010). RFID microchip internal implants: Effects on grapevine histology. SCIENTIA HORTICULTURAE, vol. 124: pp. 349-353, ISSN: 0304-4238;
- LUVISI A., PANATTONI A., BANDINELLI R., RINALDELLI R., PAGANO M., TRIOLO E. (2010). Radiofrequency Identification Tagging in Ornamental Shrubs: An Application in Rose. HORTTECHNOLOGY, vol. 20(6): pp. 1037-1042, ISSN:1063-0198;
- LUVISI A., PANATTONI A., COLOSIMO A., PAGANO M., BANDINELLI R., RINALDELLI E., TRIOLO E. (2010). Sanitary selection of grapevine supported by RFID system. JOURNAL OF PLANT PATHOLOGY, vol. 92 (4S): p. S4.71-S4.105. ISSN: 1125-4653;

- LUVISI A., TRIOLO E., RINALDELLI E., BANDINELLI R., PAGANO M., GINI B. (2010). Radiofrequency applications in grapevine: From Vineyard to web. *COMPUTER AND ELECTRONICS IN AGRICULTURE*, vol. 70: pp. 256-259. ISSN: 0168-1699;
- PAGANO M., BANDINELLI R., RINALDELLI E., PANATTONI A., TRIOLO E., LUVISI A. (2010). RFID technology for clonal selection purposes. *ADVANCES IN HORTICULTURAL SCIENCE*, vol 4: pp. 282-284, ISSN: 0394-6169 / 1592-1573;
- LUVISI A., PANATTONI A., COLOSIMO A., PAGANO M., BANDINELLI R., RINALDELLI E., TRIOLO E. (2010). Sanitary selection of grapevine supported by RFID system. In: 16th Congresso Nazionale SIPaV. Firenze;
- PAGANO M., MANCUSO S. (2010). La tecnologia a scansione 3D nelle specie arboree da frutto. In: *ITALUS HORTUS*. Firenze, vol. 17 p. 127;
- PANDOLFI C., MASI E., PAGANO M. (2010). Valutazione dell'effetto dell'acclimatazione sulla riduzione dei danni da stress salino in due cultivar di Olea europea. In: *ITALUS HORTUS*. Firenze, vol. 17: pp. 42-43, ISBN/ISSN: 1127-3496;
- TRIOLO E., MATERAZZI A., BANDINELLI R., PAGANO M., LUVISI A., MATTII G.B. (2010). Vitigni autoctoni minori: recupero e caratterizzazione di due presunti cloni di "Vermentino bianco" in Toscana. In: Simposio Internazionale "il Vermentino, un vitigno mediterraneo: peculiarità viticole ed enologiche". Alberese (GR);
- BANDINELLI R., TRIOLO E., LUVISI A., PAGANO M., GINI B., RINALDELLI E. (2009). Employment of radiofrequency technology (RFid) in grapevine nursery traceability. *ADVANCES IN HORTICULTURAL SCIENCE*, vol. 2: pp. 75-78, ISSN: 0394-6169 / 1592-1573;
- LUVISI A., BANDINELLI R., RINALDELLI E., PAGANO M., TRIOLO E. (2009). RFid in viticoltura: un database online per la gestione delle piante. *AGRONOTIZIE*;
- LUVISI A., PANATTONI A., COLOSIMO A., RINALDELLI E., PAGANO M., BANDINELLI R., GINI B., TRIOLO E. (2009). Histological studies of RFID marked grapevines. In: 15th Congresso Nazionale SIPaV, Locorotondo (BA);
- BANDINELLI R., TRIOLO E., RINALDELLI E., LUVISI A., PAGANO M. (2008). La tecnologia delle radiofrequenze (RFid) nella filiera vivaistico-viticola: una prima sperimentazione per la tracciabilità nel settore. *ORGANIC EPRINTS*: 13950;
- TRIOLO E., LUVISI A., BANDINELLI R., RINALDELLI E., PAGANO M. (2007). RFID technology for improving traceability in grapevine nursery sector. IN: 14th Congresso Nazionale SIPaV. Perugia.

Scholar citations: <http://scholar.google.com/citations?user=pODM1bkAAAAJ&hl=en>

Scopus Id: 35307722800



PROJECTS

Member of the EU project entitled: Microbial services addressing climate change risks for biodiversity and for agricultural and forestry ecosystems: enabling curiosity-driven research and advancing frontier knowledge (MICROBES-4-CLIMATE), Call: HORIZON-INFRA-2023-SERV-01, Programme: HORIZON.

OTHER EXPERIENCES

Member of LINV-UNIFI for ESA (European Space Agency) gravity projects:

http://esamultimedia.esa.int/docs/edu/SYT/SYT2010_ExpReport_LINV_UNIFI.pdf

I conducted an international research project at the School of Biological Sciences, University of Bristol, UK. During this time, I collaborated with Professors Daniel Robert and Fernando Montealegre-Z to investigate the impact of low-frequency sound waves on plants. I designed and executed experiments to examine the growth patterns of maize roots under various environmental conditions, including exposure to substrate vibrations.

Furthermore, I initiated a research project at the University of Pisa - CREA - CNR, with a primary focus on pioneering a non-invasive method for evaluating leaf water content. The project was titled "Utilizing an Optical System for Non-Invasive Plant Water Content Monitoring." As part of this initiative, we developed a novel device and methodology (Italian Patent Application no. 102016000106179, submitted on October 21, 2016) that advanced our research in plant physiology. The findings were subsequently published in *Plant Methods* (Baldacci L et al., 2017. Non-invasive absolute measurement of leaf water content using terahertz quantum cascade lasers).

Since 2014, I have also been exploring the relationship between leaf architecture and physiological aspects.

LANGUAGES

Native: Italian
Professional: English

LECTURES	I participated as teacher, in plant physiology, at the UGA study abroad program (University of Georgia)
PERSONAL WEB PAGES	http://paganomario.blogspot.it ; https://publications.cnr.it/authors/mario.pagano
COMPUTER SKILLS	Windows; MAC OS; Linux; Microsoft Office; Drupal (PHP); ImageJ; Prism Graphpad; MaxStat; Costat CoHort; PAST; ImageTool, Matlab, R CRAN, Origin.