

CURRICULUM VITAE	
Name, Surname	Maria Giovanna Molinu
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Nationality	Italian
Work Experience	
2001 –to date	<p>Researcher III level (matr. 8964) at the National Research Council (CNR), Institute of Sciences of Food Production (ISPA) – Sassari, Italy.</p> <p>Involved in researches on postharvest preserving and evaluating quality of fresh horticultural commodities. Expertise in nutritional and chemical properties of fruit and vegetables.</p>
2000 - 2001	<p>Research grant on “Interaction and Mobilization of Metal Ions at the Soil-Root Interface” at the Faculty of Agricultural Sciences, University of Sassari. The research concerned the study of interactions between biomolecules (phenolic compounds) with micro and macronutrients of plants. Responsible of instrumental analysis by UV-VIS and infrared spectrophotometry, HPLC-DAD chromatography.</p>
1998 – 99	<p>Postgraduate scholarship on “Food Science” at the Faculty of Medicine, University of Sassari, carried out at the Faculty of Chemistry, University of Sassari.</p>
1996 - 98	<p>Scholarship on “Nutritional quality of stored Citrus fruits” carried out at the Institute of Fruit Ripening and Storage Physiology (Mediterranean arboreal species) in Sassari (IMFPP) - CNR. Involved in researchs on qualitative and morpho-physiological evaluation of <i>Citrus</i> fruits subjected to different postharvest treatments: packaging, curing, cold storage, wax treatments, anaerobic conditions.</p>
1995 - 96	<p>Teaching Assistant's of study course “Analitical Chemistry” at the faculty of Environmental Science, University of Nuoro. Responsible</p>

	for the practical training in the analytical chemistry laboratory.
Education and training	
2002	Postgraduated (<i>Summa cum laude</i>) in “Food Science” with a thesis on “Food Postharvest Technology: Function of Packaging in Storage of <i>Citrus</i> Fruits”, at the Faculty of Medicine, University of Sassari
1995	Graduated (<i>Summa cum laude</i>) in Chemistry, Faculty of Chemistry, University of Sassari
Research sectors	Extraction, purification, and analysis of main and minor constituents of fresh and processed commodities, mainly by liquid chromatography. Characterization of specific chemical classes (polyphenols, vitamins) related to nutraceutical properties of fresh crops. Identification of physio-pathological disorders of stored products especially on Citrus fruits. Identify proper storage conditions and postharvest technological processes to keep fresh produce quality. Development of ecologically friendly postharvest treatments based on the use of GRAS compounds integrated to physical pest control technologies. Development of storage protocols (superatmospheric O ₂ concentration and UV-C light) to improve nutraceuticals content of fruit and vegetables.

Recent Scientific Activity

Research Project **PRIN 2007** "Development of innovative technologies in postharvest quality of fruit production". Sub-project “Postharvest interventions aimed at the storability and handling of fresh-cut prickly pear and pomegranate”. Responsible for the chemical characterization of the nutraceutical fruit compounds, especially the polyphenolic profile. From 22/09/2008 to 22/10/2010

Research Project agrifood **MIUR-CNR** "Development of exports of food products in Southern Italy". Dr. Molinu has collaborated studying protocols aimed to improve the efficiency of post-harvest citrus fruit treatments to reduce rot during storage. From April 2008- to April 2010.

Project **RAS** " The biodiversity of native foods of Sardinia in longevity: Research Proteomics, Metabolomics and Molecular Biology on Biological samples of Sardinian centenarians and on diet samples." Research granted by Regione Autonoma della Sardegna, L. R. 7 2007, “Promotion of scientific research and technological innovation in Sardinia” from 2011 to 2012. Responsible for the chemical characterization of the main compounds with functional properties in fruits. She performed the characterization of the profile of polyphenols in HPLC-MS (phenolic acids,

anthocyanins, flavonoids) and the total antioxidant capacity of pears, apples and plums cultivars, native in areas with high incidence of centenarians.

Project **MIUR** "Characterization of compounds with nutraceutical properties in plum cultivars (*Prunus domestica*) of Native Germplasm of Sardinia". Research granted by MIUR "Integrate knowledge for Sustainability and Innovation made in Italy Agrifood" (CISIA) Legge 191/2009. From 2011 to 2014. Dr. Molinu is responsible for chemical, nutritional and functional characterization (flavonoids, polyphenols and total anthocyanins, vitamin content, total antioxidant capacity, profile of anthocyanins and polyphenols in HPLC-MS) of native plum cultivars by comparing with national and international cultivars commercially more widespread.

Relevant publications

Molinu M. G., Dore A., Palma A., D'Aquino S., Azara E., Rodov V., D'hallewin G. 2015. Effect of superatmospheric oxygen storage on the content of phytonutrients in 'Sanguinello Comune' blood orange. *Postharvest Biology and Technology* 112, 24–30.

Molinu M.G., Dore A., D'hallewin G. 2015. Effect of short heat treatments with a sodium bicarbonate solution on storability of the yellow germoplasm plum 'Meloni'. *Adv. Hort. Sci.*, 29(2).

Fadda A., Serra M., Molinu M. G., Azara E., Barberis A., Sanna D. 2014. Reaction time and DPPH concentration influence antioxidant activity and kinetic parameters of bioactive molecules and plant extracts in the reaction with the DPPH radical. *Journal of Food Composition and Analysis* 35, 2, 112-119.

Dore A., Molinu M.G., Venditti T., D'hallewin G. 2013. Use of high-intensity ultrasound to increase the efficiency of imazalil in postharvest storage of citrus fruits. *Food Biopr. Tech.* 6 (11), 3029 - 3037.

Dore A., Molinu M. G., Venditti T., D'hallewin G. 2010. Sodium bicarbonate induces crystalline wax generation, activates host-resistance, and increases imazalil level in rind wounds of oranges, improving the control of green mold during storage. *J. Agric. Food Chem.* 58, 7297-7304.

Dore A., Molinu M.G., Venditti T., D'hallewin G. 2009. Immersion of lemons into imazalil mixtures heated at 50 °C alters the cuticle and promotes permeation of imazalil into rind wounds. *J. Agric. Food Chem.* 57, 623-631.

Venditti T., Dore A., Molinu M.G., Agabbio M., D'hallewin G. 2009. Combined effect of curing followed by acetic acid vapour treatments improves postharvest control of *Penicillium digitatum* on mandarins. *Postharvest Biol. Technol.* 54, 111-114.

Molinu M.G., Pani G., Venditti T., Dore A., Ladu G., D'hallewin G. Alternative methods to control postharvest decay caused by *Penicillium expansum* in plums (*Prunus domestica* L.). *Commun. Agric. Appl. Biol. Sci.* 77 (4), 509-514. ISSN 1379-1176.

D'hallewin G., Ladu G., Pani G., Dore A., Molinu M.G., Venditti T. 2012. Postharvest physiological disorders in table grapes as affected by UV-C light", *Commun. Agric. Appl. Biol. Sci.* 77 (4), 515-525. ISSN 1379-1176

Ladu G., Pani G., Venditti T., Dore A., Molinu M.G., D'hallewin G. 2012. Natural resistance against pre- and post-harvest pathogens in Sardinian pears germplasm. *Commun. Agric. Appl. Biol. Sci.* 77 (3), 163-171. ISSN 1379-1176

D'Aquino S., Palma A., Molinu M.G., La Malfa S., Continella A., Tribulato E. 2010. Effect of superatmospheric oxygen levels on physiological and qualitative aspects of cold stored pomegranate fruits. *Acta Horticulturae* 858, 349-355. ISBN 906605 648 7.

- D'Aquino S., Schirra M., Molinu M.G., Tedde M., Palma A. 2010. Preharvest aminoethoxyvinylglycine treatments reduce internal browning and prolong the shelf-life of early ripening pears. *Scientia Horticulturae* 125, 353-360.
- Molinu M. G., Venditti T., Dore A., Agabbio M., Rosas G., D'hallewin G. 2010. Postharvest behaviour of five Sardinian plum varieties as affected by immersion in heated sodium bicarbonate solution. *Com. Agric. Appl. Biol. Sci.* 75 (3), 753-760. ISSN 1379-1176.
- Molinu M. G., Arras G., Dore A., Venditti T., Petretto A., D'hallewin G. 2009. Host-Pathogen-Biocontrol Agent Interaction as Affected by Sequential Application of Na₂CO₃ and CaCl₂ *Commun. Agric. Appl. Biol. Sci.* 74(3). 703-710. ISSN 1379-1176.
- Molinu M.G., Pani G., Venditti T., Dore A., Ladu G., D'hallewin G. 2011. Sequential application of NaHCO₃, CaCl₂ and *Candida oleophila* (isolate 13L) affects significantly *Penicillium expansum* Growth and the Infection Degree in Apples *Agric. Appl. Biol. Sci.* Vol 76(4) 743-750 ISSN 1379-1176
- D'hallewin, G., Molinu, M G., Venditti, T., Dore, A., Ben-Yehoshua, S., Rodov, V., Kinay, P. 2010. Heat Conditioning Before Ultraviolet-C Illumination Improves Decay Control and the keeping Quality of Cold Stored Lemon Fruit. *Acta Horticulturae* 877 (3), 1427 – 1432. ISBN 906605 648 7.
- Dore A., Molinu M.G., Venditti T., Culeddu N., Chessa M., D'hallewin G. 2010. NMR-imaging studies on fungicide motion into citrus fruit rind following hot water immersion. *Acta Horticulturae* 877(3), 1419-1426. ISBN 906605 648 7.
- Molinu M.G., Venditti T., Dore A., Petretto A., Agabbio M., D'hallewin G. 2010. The effect of hydrocooling on the keeping quality of early ripening pear cultivars. *Acta Horticulturae* 877 (2), 861-868. ISBN 906605 648 7.
- Deiana S., Manunza B., Molinu M.G., Palma A., Premoli A., Solinas V. 2002. Influence of pH and of several organic acids on the interaction between esculetine and iron (III). In "Soil mineral organic matter-microorganism interactions and ecosystem health" Vol. 28° Elsevier Science B.V. p. 261-277. Ed. Violante A., Huang P.M., Bollag J-M, Gianfreda L.