PERSONAL INFORMATION

Roberta Paradiso

Sex | Date of birth | Nationality

POSITION

Associate Professor of Horticulture at the Department of Agricultural Sciences, University of Naples Federico II (Naples, Italy)

WORK EXPERIENCE

From September 2018

Associate Professor of Horticulture

University of Naples Federico II, Portici (Naples, Italy)
Courses on Plant production for food industry and Greenhouse horticulture

From January 2004 to August 2018

Researcher of Horticulture

University of Naples Federico II, Portici (Naples, Italy)

The research activity is related to eco-physiology of vegetable and flower crops, soilless cultures (hydrological properties of substrates, nutrient, and water management), greenhouse technologies, sustainable horticulture in open field and greenhouse, nutritional quality of vegetables.

The most recent work concerns greenhouse artificial lighting, with special attention to: i) spectral dependence of photosynthesis and photomorphogenesis and leaf optical properties of single leaf and whole crop canopy; ii) advanced systems for artificial lighting based on light emitting diodes (LEDs); iii) development of photosynthesis models.

A specific expertise concerns the cultivation of higher plants in controlled environment for Bioregenerative Life-Support Systems (BLSSs) in Space. On this topic, she works in research projects funded by the Italian Space Agency (ASI) and the European Space Agency (ESA) and collaborates with scientific partners of the ESA consortium MELiSSA - Micro-Ecological Life Support System Alternative (https://www.esa.int/Enabling_Support/Space_Engineering_Technology/Melissa).

She collaborated in the creation of the Laboratory of Crop research for Space and the design of the Plant Characterization Unit (PCU) funded by ESA at the Department of Agricultural sciences of the University of Naples Federico II (Naples, Italy), aiming at the characterization of candidate crops for cultivation in BLSSs.

EDUCATION AND TRAINING

2002

PhD in Herbaceous Crops

Department of Agricultural Engineering and Agronomy, Faculty of Agriculture
University of Naples Federico II, Portici (Naples, Italy)
Title of the thesis: Research on water consumption and mineral nutrition of roses in closed soilless system. Supervisor Professor G. Barbieri

1998

Master in Agricultural Sciences

University of Naples Federico II, Portici (Naples, Italy)
Experimental thesis: Comparison of substrates for soilless cultivation of roses for cut flower.
Final grade 108/110. Tutor Professor G. Barbieri

PERSONAL SKILLS

Mother tongue: **Italian**
Other language(s): **English**

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1/2 PROFICIENT	C1/2 PROFICIENT	C1/2 PROFICIENT	C1/2 PROFICIENT	C1/2 PROFICIENT

Advanced level English Centre of Cambridge, Guildhall Place, Cambridge - United Kingdom.
Advanced level at North Atlantic Treaty Organization (NATO), Naples – Italy.

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills: Good communication skills gained through the teaching experience at Italian and foreign universities and other educational institutions, and through participation at National and International research networks and symposia.

Organisational / managerial skills: Good management ability acquired through the supervision of BSc, MSc and PhD students, the organization of scientific and educational events, and the responsibility of research projects.

Job-related skills: As described in CV.

Computer skills: Good expertise of Microsoft Office™ tools.

ADDITIONAL INFORMATION

Scientific publications

1. Paradiso R., Meinen E., Snel J.F.H., De Visser P., Van Ieperen W., Hogewoning S.W. and Marcelis L.F.M., 2011. Spectral dependence of Photosynthesis and Light Absorption in Single Leaves and Canopy in *Rosa hybrida*. *Scientia Horticulturae*, 127: 548-554. Corresponding author.
2. Palermo M., Paradiso R., De Pascale S., Fogliano V., 2012.Hydroponic cultivation improves the nutritional quality of soybean and its products. Journal of Agricultural and Food Chemistry, 60:250-255.
3. De Micco V., Buonomo R., Paradiso R., De Pascale S., Aronne G., 2012.Soybean cultivar selection for Bioregenerative Life Support Systems (BLSSs). Theoretical selection. Advances in Space Research 49: 1415-1421).
4. Paradiso R., Buonomo R., De Micco V., Aronne G., Palermo M., Barbieri G., De Pascale S., 2012. Soybean cultivar selection for Bioregenerative Life Support Systems (BLSSs). Hydroponic cultivation. Advances in Space Research, 50, pp. 1501-1511. Corresponding author.
5. Paradiso R., A. Maggio, De Pascale S., 2012. Moderate variations of day/night temperatures affect flower induction and inflorescence development in *Phalaenopsis*. *Scientia Horticulturae*, 139: 102-107. Corresponding author.
6. Barbieri G., Vallone S., Orsini F., Paradiso R., De Pascale S., Negre-Zakharov F., Maggio A., 2012. Stomatal density and metabolic determinants mediate salt stress adaptation and water use efficiency in basil (*Ocimum basilicum* L.). Journal of Plant Physiology, 169: 1737-1746.
7. Maggio A., De Pascale S., Paradiso R., Barbieri G., 2013. Quality and nutritional value of vegetables from organic and conventional farming. *Scientia Horticulturae*, 164: 532-539.
8. De Micco V., De Pascale S., Paradiso R., Aronne G., 2014. Microgravity effects on different stages of higher plant life cycle and completion of the seed-to-seed cycle. Plant Biology, 16(s1): 31-38.
9. Paradiso R., De Micco V., Buonomo R., Aronne G., Barbieri G., De Pascale S., 2014. Soilless cultivation of soybean for Bioregenerative Life Support Systems (BLSSs): a literature review and the experience of the MELiSSA Project - Food characterization Phase I. Plant Biology, 16(s 1): 69-78.
10. Paradiso R., Buonomo R., Dixon M.A., Barbieri G., De Pascale S., 2014. Soybean cultivation for Bioregenerative Life Support Systems (BLSSs): the effect of hydroponic system and nitrogen source. Advances in Space Research 53(3): 574-584.
11. De Micco V., Paradiso R., Aronne G., De Pascale S., Quarto M., Arena C., 2014. Leaf anatomy and photochemical behaviour of *Solanum lycopersicum* L. plants from seeds irradiated with low-LET ionising radiation. The Scientific World Journal, Article ID 428141.
12. Scariot V., Paradiso R., Rogers H., De Pascale S., 2014. Ethylene control in cut flowers: classical and innovative approaches. Review Article. Postharvest Biology and Technology 97: 83-92. Corresponding author.
13. Paradiso R., De Pascale S., 2014.Effects of plant size, temperature, and light intensity on flowering of *Phalaenopsis* Hybrids in Mediterranean Greenhouses. The Scientific World Journal, Volume 2014, Article ID 420807. http://dx.doi.org/10.1155/2014/420807. Corresponding author.

14. Paradiso R., Buonomo R., Dixon M.A., Barbieri G., De Pascale S., 2015. Effect of bacterial root symbiosis and urea as source of nitrogen on performance of soybean plants grown hydroponically for bioregenerative life support systems (BLSSs). Frontiers in Plant Science, 6:888. Corresponding author.
15. Sheridan C., Depuydt P., De Ro M., Petit C., Van Gysegem E., Delaere P., Dixon M., Stasiak M., Aciksöz S.B., Frossard E., Paradiso R., De Pascale S., Ventorino V., De Meyer T., Sas B., Geelen D., 2017. Microbial community dynamics and response to plant growth-promoting organisms in the rhizosphere of four common food crops cultivated in hydroponics. Microbial Ecology, 73.2 (2017): 378-393.
16. Paradiso R., Arena C., De Micco V., Giordano M., Aronne G., De Pascale S., 2017. Changes in leaf anatomical traits enhanced photosynthetic activity of soybean grown in hydroponics with plant growth-promoting microorganisms. Frontiers in Plant Science, 8:674. Corresponding author.
17. Di Mola I., Rouphael Y., Colla G., Fagnano M., Paradiso R., Mori M., 2017. Morpho-physiological traits and nitrate content of greenhouse lettuce as affected by irrigation with saline water. HortScience, 52(12):1716-1721.
18. Paradiso, R., Arena, C., Rouphael, Y., D'Aquino, L., Makris, K., Vitaglione, P., & De Pascale, S. (2018). Growth, photosynthetic activity and tuber quality of two potato cultivars in controlled environment as affected by light source. Plant Biosystems, 153(5): 725-735. Corresponding author.
19. Carillo P., Arena C., Modarelli G.C., De Pascale S., Paradiso R., 2019. Photosynthesis in *Ranunculus asiaticus* L.: the influence of the hybrid and the preparation procedure of tuberous roots. Frontiers in Plant Science, Vol. 10, Article 241. Corresponding author.
20. Peiro E., Pannico A., Colleoni S.G., Bucchieri L., Rouphael Y., Paradiso R., De Pascale S., Gòdia F., 2020. Air distribution in a fully-closed higher plant growth chamber impacts crop performance of hydroponically-grown lettuce. Frontiers in plant science, Special topic Higher Plants, Algae and Cyanobacteria in Space Environments, Brief Research Report. Vol. 11, Article 537.
21. Modarelli G.C., Arena C., Pesce G., Dell'Aversana E., Fusco G.M., Carillo P., De Pascale S., Paradiso R., 2020. The role of light quality of photoperiodic lighting on photosynthesis, flowering and metabolic profiling in *Ranunculus asiaticus* L. *Physiologia Plantarum*, 170(2), 187-201. Corresponding author.
22. Paradiso R, de Visser P.H.B., Arena C., Marcelis L.F.M., 2020. Light response of photosynthesis and stomatal conductance of rose leaves in the canopy profile: the effect of lighting on the adaxial and the abaxial sides. Functional Plant Biology, 47, 639-650. Corresponding author.
23. Paradiso R., Ceriello A., Pannico A., Sorrentino S., Palladino M., Giordano M., Fortezza R., De Pascale S., 2020. Design of a module for cultivation of tuberous plants in microgravity: the ESA project "Precursor of Food Production Unit (PFPU)". Frontiers in plant science, Vol. 11, Article 417. Corresponding author.
24. Carillo P., Dell'Aversana E., Modarelli G.C., Fusco G.M., De Pascale S., Paradiso R., 2020. Metabolic profile and performance responses of *Ranunculus asiaticus* L. hybrids as affected by light quality of photoperiodic lighting. Frontiers in Plant Science, Special topic Crop Physiology under LED Lighting, Vol. 11, Article 597823. Corresponding author.
25. Paradiso R., Proietti S., 2021. Light quality manipulation to control plant growth and photomorphogenesis in greenhouse horticulture: the state of the art and the opportunities of modern LED systems. Review article. Journal of Plant Growth Regulation, 41, 742-780. Corresponding author.
26. Arena C., Graham T., Leguè V. Paradiso R., 2021. Higher Plants, Algae and Cyanobacteria in Space Environments. Editorial. Front. Plant Sci., 10. Corresponding author.
27. De Pascale S., Arena C., Aronne G., De Micco V., Pannico A., Paradiso R., Rouphael Y., 2021. Biology and crop production in extra-terrestrial environments: challenges and opportunities. Life science in space research, 29, 30-37.
28. Carillo P., Modarelli G.C., Fusco G.M., Dell'Aversana E., Arena C., De Pascale S., Paradiso R., 2021. The role of light quality of photoperiodic lighting on photosynthesis, flowering and metabolic profiling in *Ranunculus asiaticus* L. - Part 2 – Experiment on plant from non vernalized tuberous roots. Environmental and Experimental Botany, 192 (2021) 104649. Corresponding author.
29. Modarelli G.C., Paradiso R., Arena C., De Pascale S., van Labeke M.C. 2022. High Light Intensity from Blue-Red LEDs Enhance Photosynthetic Performance, Plant Growth, and Optical Properties of Red Lettuce in Controlled Environment. Horticulturae, 8(2), 114 https://doi.org/10.3390/horticulturae8020114.
30. Proietti S., Scariot V., De Pascale S., Paradiso R., 2022. Flowering mechanisms and environmental stimuli for flower transition: bases for strategies of production scheduling in greenhouse floriculture. Review article. Plants, 11, 432. https://doi.org/10.3390/plants11030432. Corresponding author.
31. Pannico P., Cirmini G., Quadri C., Paradiso R., Bucchieri L., Rouphael Y., De Pascale S., 2022. Plant Characterization Unit for closed life support system: hardware and control design for atmospheric system. Special topic: Bioregenerative Life-Support Systems for Crewed Missions to the Moon and Mars. Frontiers in Astronomy and Space Sciences, 9: 820752. doi: 10.3389/fspas. Corresponding author.

32. Carillo P., Fusco G.M., Del Gaudio S., De Pascale S., Paradiso R. 2022. Cold Treatment Modulates Changes in Primary Metabolites and Flowering of Cut Flower Tulip Hybrids. Horticulturae, 8, 371. https://doi.org/10.3390/horticulturae8050371. Corresponding author.
33. Vitale E., Velikova V., Tsonev T., Costanzo G., Paradiso R., Arena C. 2022. Manipulation of light quality is an effective tool to regulate photosynthetic capacity and fruit antioxidant properties of *Solanum lycopersicum* L. cv. 'Microtom' in a controlled environment. Peer J. 10:e13677 DOI 10.7717/peerj.13677
34. Caporale A.G., Paradiso R. (both as first authors), Liuzzi G., Arouna N., De Pascale S., Adamo P. 2023. Can peat amendment of Mars regolith simulant allow soybean cultivation in Mars bioregenerative life support systems? Brief Report. Plants, 12, 64 10.3390/plants12010064. Corresponding author.
35. Caporale A.G., Paradiso R. (both as first authors) Liuzzi G., Palladino M., Amitrano C., Arena C., Arouna N., Verrillo M., Cozzolino V., De Pascale S., Adamo P. 2023. Green compost amendment improves potato plant performance on Mars regolith simulant as substrate for cultivation in Space. Plant & Soil, 2 10.1007/s11104-022-05860-0. Corresponding author.
36. Fusco G.M., Carillo P., Nicastro R., Modarelli G.C., Arena C., De Pascale S., Paradiso R., 2023. Vernalization procedure of tuberous roots affects growth, photosynthesis and metabolic profile of *Ranunculus asiaticus* L. Plants, 12(3), 425. 10.3390/plants12030425. Corresponding author.
37. Proietti S., Paradiso R., Moscatello S., Saccardo F., Battistelli A., 2023. Light intensity affects the assimilation rate and carbohydrates partitioning in spinach grown in controlled environment. Plants, 12(4):804. doi: 10.3390/plants12040804
38. Paradiso R., Di Mola I., Cozzolino E., Ottaiano L., El-Nakhel C., Rouphael Y., Mori M., 2023 Nutrient and Nutraceutical Quality of Rocket as a Function of Greenhouse Cover film, Nitrogen Dose and Biostimulant Application. Agronomy, 13(3), 638. doi: 10.3390/agronomy13030638
39. Vitale E., Motta C. Avallone B., Amoresano A., Fontanarosa C., Battaglia G., Spinelli M., Fogliano C., Paradiso R., Arena C. 2023. Sustainable reuse of expresso coffee by-products as a natural fertilizer to improve growth and photosynthesis in cucumber (*Cucumis sativus*) plants. Waste and Biomass Valorization, doi: 10.1007/s12649-023-02143-2
40. Amitrano C., Paglialunga G., Battistelli A., De Micco V., Del Bianco M., Liuzzi G., Moscatello S., Paradiso R., Proietti S., Rouphael Y., De Pascale1 S., 2023. Analyzing biomass production, morpho-anatomical and nutritional traits is necessary to define microgreens growth requirements in Space cultivation systems. Frontiers in plant science, https://doi.org/10.3389/fpls.2023.1190945
41. Costanzo G., Vitale E., Iesce M.R., Spinelli M., Fontanarosa C., Paradiso R., Amoresano A., Arena C., 2023. Modulation of Antioxidant Compounds in Fruits of *Citrus reticulata* Blanco using Post-harvest LEDs Irradiation. Biology, 12(7), 1029. doi.org/10.3390/biology12071029
42. Fusco G.M., Carillo P., Nicastro R., Pagliaro L., De Pascale S., Paradiso R., 2023. Metabolic Profiling in Tuberous Roots of *Ranunculus asiaticus* L. as Influenced by Vernalization Procedure Plants, 12(18)3255. doi.org/10.3390/plants1218325. Corresponding author.
43. Paradiso R., Di Mola I., Conti S., Ottaiano L., Cozzolino E., Rippa M., Mormile P., Melchionna G., Testa A., Beltrame L., Mori M. 2023. Photosynthesis, yield and quality in wild rocket (*Diplotaxis tenuifolia* L.) under photoluminescent greenhouse covers. Agronomy, 13(9): 2372. doi.org/10.3390/agronomy13092372
44. Paradiso R., Di Mola I., Ottaiano L., Cozzolino E., Pelosi M.E., Rippa M., Mormile P., Mori M., 2024. Integrating Smart Greenhouse Cover, Reduced Nitrogen Dose and Biostimulant Application as a Strategy for Sustainable Cultivation of Cherry Tomato. Plants, 13,440. Doi: 10.3390/plants13030440.
45. Caporale A.G., Paradiso R., Liuzzi G., Palladino M., Arouna N., Izzo L., Ritieni A., De Pascale S., Adamo P., 2024. Green compost amendment of Mars regolith simulant as substrate for potato cultivation in Space: the evolution of physicochemical properties and the influence on tuber quality. Plants, 13, 747. https://doi.org/10.3390/plants13050747. Corresponding author.
46. Paradiso R., Cocetta G., Proietti S., 2025. Beyond red and blue: unveiling the hidden action of green wavelengths on plant physiology, metabolisms and gene regulation in horticultural crops. Env. Exp. Bot., in press. Corresponding author.

Chapters in books

1. Arena C., Aronne G., Billi D., Cheli M., Cristoforetti S., De Micco V., De Pascale S., Ferranti F., Guidoni U., Malerba F., Nespoli P., Paradiso R., Parmitano L., Pippia P., Piccirillo S., Rizzo A., Vittori R., 2014. A Lezione sulla Stazione Spaziale Internazionale. p. 1-111, Italian Space Agency (ASI), Rome (Italy). E-book version: https://www.asi.it/it/educational/liss-a-lezione-sulla-iss
2. De Micco V., Arena C., Paradiso R., Aronne G., De Pascale S., 2018. Capitolo: Le piante nello Spazio. Explora. La scoperta umana e robotica dello spazio. Italian Space Agency (ASI), Rome (Italy).
3. De Pascale S., De Micco V., Ferrante A., Maggio A., Paradiso R., Vernieri P., 2018. Capitolo 2: Fisiologia della produzione delle colture ortive, in Orticoltura, principi e pratica. Edagricole (Bologna, Italy) ISBN 978-88-506-5514-4.

4. De Pascale S., Paradiso R. 2020. Capitolo 5.8 Programmazione della produzione. in Floricoltura. A cura di S. De Pascale, D. Romano, A. Ferrante, V. Scariot. Edagricole (Bologna, Italy).

International proceedings

1. De Pascale S., Maturi T., Paradiso R., Barbieri G., 2001. Comparison of water and nutrient use of three cultivars of *Cymbidium* in a soilless culture system. International Symposium on Protected cultivation in Mild winter climates: current trends for sustainable technologies. ISHS 2000, Cartagena (Spain), March 7-11, 2000. Acta Horticulturae, 559(2): 535-542. ISSN 0567-7572.
2. De Pascale S., Paradiso R., 2001. Water and nutrient uptake of rose growing on two inert media. IV International Symposium on Growing media and Hydroponics, ISHS 1999, Thessaloniki (Greece), August 31 - September 5. Acta Horticulturae, 548:631-639. ISSN 0567-7572.
3. Paradiso R., Raimondi G., De Pascale S., 2003. Growth and yield of rose in a closed soilless system on two inert substrates. VI International ISHS Symposium on Product and process innovation for protected cultivation in mild winter climate. Ragusa (Italy), March 5-8, 2002. Acta Horticulturae, 614 (1): 193-198. ISSN 0567-7572.
4. Paradiso R., De Pascale S., Aprea F., Barbieri G., 2003. Effect of Electrical Conductivity Levels of Nutrient Solution on Growth, Gas Exchanges and Yield of Two Gerbera Cultivars in Soilless System. International Symposium on Managing Greenhouse crops in Saline environment. ISHS, Pisa (Italy), July 9-12. Acta Horticulturae, 609: 165-171. ISSN 0567-7572.
5. De Pascale S. Paradiso R., 2006. Intervenciones para la programacion de la floracion en *Alstroemeria hybrida*. III Congreso Argentino de Floricultura, La Plata (Buenos Aires) Argentina, 7-10 noviembre. Libro de resúmenes, 17-20. ISBN 987-521-226-1.
6. De Pascale S., Paradiso R., 2006. Influencia del régimen térmico y del GA3 sobre *Zantedeschia aethiopica* L. III Congreso Argentino de Floricultura, La Plata, Buenos Aires (Argentina), 7-10 noviembre. Libro de resúmenes, 21-24. ISBN 987-521-226-1.
7. De Pascale S., Paradiso R., 2006. Programacion de la produccion de *Lisianthus russellianus* L. III Congreso Argentino de Floricultura, La Plata, Buenos Aires (Argentina), 7-10 noviembre. Libro de resúmenes, 25-28. ISBN 987-521-226-1.
8. Paradiso R., Cuocolo B., De Pascale S., 2007. Gibberellic acid and nitrogen rate affect yield and quality of artichoke. ISHS - VI International Symposium on Artichoke, Cardoon and their Wild Relatives. Lorca, Murcia (Spain), March 27-April 1, 2006. Acta Horticulturae, 730: 211-216. ISSN 0567-7572.
9. Paradiso R., De Pascale S., 2008.Effects of coco fibre addition to perlite on growth and yield of cut Gerbera. ISHS-IPS International Symposium on Growing Media. Angers (France), September 4-10, 2005. Acta Horticulturae, 779: 529-534. Editor J. C. Michel. ISSN 0567-7572.
10. Paradiso R., Aronne G., De Pascale S., 2008. Thermal and Light Requirements for Flower Differentiation of Snapdragon. International Congress of International Society for Horticultural Science (ISHS) "GreenSys 2007 - High Technology for Greenhouse system Management", Naples (Italy), October 4-6. Acta Horticulturae, 801(2): 1399-1405. ISSN 0567-7572.
11. Paradiso R., Fiorenza S., De Pascale S., 2008. Light requirements for flowering of *Lisianthus*. International Congress of International Society for Horticultural Science (ISHS) "GreenSys 2007 - High Technology for Greenhouse system Management", Naples (Italy), October 4-6. Acta Horticulturae, 801(2): 1155-1160. ISSN 0567-7572.
12. Paradiso R., Buonomo R., De PascaleS., 2009. Effects of thermal regime on growth and flowering of *Lisianthus*. International Symposium of International Society for Horticultural Science (ISHS) on Strategies Towards Sustainability of Protected Cultivation in Mild Winter Climate, April 6-11, 2008, Antalya (Turkey). Acta Horticulturae, 807: 687-692. ISSN 0567-7572.
13. Paradiso R., Buonomo R., Cardarelli M., De Pascale S., 2010. Evaluation of spontaneous species for the innovation in floriculture: *Pancratium maritimum* L. as ornamental plant. ISHS 2nd Conference on landscape and urban horticulture. Bologna (Italy), June 9-13, 2009. Acta Horticulturae, 881:563-566. ISSN 0567-7572.
14. Paradiso R., Meinen E., Snel J., van Ieperen W., Hogewoning S.W., Marcelis L.F.M., 2011. Light Use Efficiency at Different Wavelengths in Rose Plants. ISHS International Symposium on High Technology for Greenhouse Systems Greensys 2009. Québec City (Canada), June 14-19. Acta Horticulturae, 893: 849-855. Ed.: M. Dorais. ISSN 0567-7572.
15. Paradiso R., De Pascale S., 2012. Effect of light regime on growth and flowering of *Phalaenopsis* orchid. Symposium on "Advanced technologies and management towards sustainable greenhouse ecosystems–GreenSys2011". Halkidiki peninsula (Greece), June 5-10. Acta Horticulturae, 952: 329-334. Eds.: C. Kittas et al. ISSN 0567-7572.
16. Paradiso R., Marcelis L.F.M., 2012. The Effect of Irradiating Adaxial or Abaxial Side on Photosynthesis of Rose Leaves. Proc. ISHS 7th IS on Light in Horticultural Systems. Eds: S. Hemming and E. Heuvelink. Acta Horticulturae, 956: 157-163. ISSN 0567-7572.

17. Paradiso R., Buonomo R., Dixon M.A., Barbieri G., De Pascale S., 2012.Hydroponic cultivation of soybean for Bioregenerative Life Support Systems (BLSS): the effect of nitrogen source and bacterial root symbiosis. Proceedings 63rd International Astronautical Congress (IAC), International Astronautical Federation (IAF). Naples, Italy, October,1-5, vol. 1, pp. 366-375. ISSN 1995-6258.
18. De Micco V., Paradiso R., Aronne G., Fogliano V., De Pascale S., 2012. Agronomical and nutritional characterization of soybean for BLSS: lessons learned from the MELiSSA project – Food characterization phase I. Proceedings 63rd International Astronautical Congress (IAC) of the International Astronautical Federation (IAF). Naples, Italy, October 1-5, vol. 2, pp. 1354-1360, ISSN 1995-6258.
19. Paradiso R., De Micco V., Aronne G., De Pascale S., 2012. Soilless cultivation of soybean for BLSS. In: Proceedings 63rd International Astronautical Congress (IAC) of the International Astronautical Federation (IAF), Naples, Italy, October, p. 1-7, ISSN 1995-6258.
20. Paradiso R., De Pascale S., 2012.The Influence of Day/Night Thermal Regime on Growth and Flowering of *Phalaenopsis* 'Premium'. In 28th XXVIII International Horticultural Congress on Science and Horticulture for People (IHC2010). Lisbon, Portugal, August 22-27, 2010. Acta horticulturae, 937: 609-613. ISSN 0567-7572.
21. De Pascale S., Maggio A., Paradiso R., Caputo R., Barbieri G., 2013.Organic Farming May Affect the Nutritional Value of Vegetables. In II International Symposium on Organic Greenhouse Horticulture.Acta horticulturae, 1041: 231-238. ISSN 0567-7572.
22. Paradiso, R., De Pascale, S. 2014. Plant size at flower induction affects flowering of *Phalaenopsis* orchids. International Symposium on New Technologies for Environment Control, Energy-Saving and Crop Production in Greenhouse and Plant Factory - Greensys 2013. Jeju (Republic of Korea), October 6-11, 2013, Acta Horticulturae, 1037: 1139-1144. ISSN 0567-7572.
23. Modarelli, G.C., Arena C., De Pascale S., Paradiso R., 2020. Photosynthesis in *Ranunculus asiaticus* L.: characterization in two Mediterranean hybrids under fluorescent white light. III International Symposium on Innovation and New Technologies in Protected Cultivation, Istanbul (Turkey), August 12-16, 2018. Acta horticulturae, 1271, 163-168. ISSN 0567-7572
24. Modarelli, G.C., Arena C., De Pascale S., Paradiso R. 2021 The influence of the hybrid and the preparation procedure of tuberous roots on plant growth and flowering in *Ranunculus asiaticus* L. International Symposium on Advanced Technologies and Management for Innovative Greenhouses - GreenSys 2019. Angers (France), June 16-20, 2019. Acta horticulturae, 1271, 163-168. ISSN 0567-7572.
25. Raimondi G., Giordano M., Pedalino A., El-Nakhel C., Pannico A., Di Stasio E., Maiello R., Paradiso R., Rouphael Y., Fascella G. Configuration of greenhouse sweet basil nutritional quality in response to cultivar and growing media. III International Symposium on Growing Media, Composting and Substrate Analysis. Milan (Italy), June 24-28, 2019. Acta horticulturae, 1305, 179-184.
26. Paradiso R., De Pascale S., 2021. Morpho-physiological response of garden roses to saline aerosol stress. IV International Symposium on Woody Ornamentals of the Temperate Zone. March 3-5, 2021. in digital format because of the SARS-COVID-19 emergency. www.woodyornamentals2020.com. Acta horticulturae, 1331, 131-137. ISSN 0567-7572.
27. Liuzzi G., Paradiso R., Caporale A., Arouna N., De Pascale S., Adamo P. Regolith simulant and green compost as substrates for plant cultivation in Mars space colonies. International Horticultural Congress, Angers (France), August 14-20, 2022. https://www.ihc2022.org/. Acta horticulturae, 1377, 583-588.
28. Del Gaudio S., Fusco G.M., Carillo P., De Pascale S., Paradiso R. Interaction between vernalization procedure and plant genotype on flowering and metabolism in cut flower tulip. Angers (France), August 14-20, 2022. Acta horticulturae, Acta Hortic. 1368, 63-70.

Teaching and Educational Collaborations

2008 - June to July: short-term mobility program for teachers, researchers and scholars of the University of Naples Federico II at the Wageningen University and Research (WUR) Greenhouse Horticulture (Wageningen, the Netherland), Research unit Crop Management, Physiology and Modeling, Team leader prof. Leo F.M. Marcelis.

2008-2009 - September to March: Visiting scientist at the Wageningen University and Research (WUR) Greenhouse Horticulture (Wageningen, the Netherland), Research unit Crop Management, Physiology and Modeling, Team leader prof. Leo F.M. Marcelis.

2010 - November 2-8: Teaching assignment (Researcher / Junior class) LLP / Erasmus program Teacher and company staff mobility for teaching activities (STA), Area code: 01.4 Horticulture, host university: Akdeniz Universitesi, Antalya (Turkey).

2019 - May 27-31: Erasmus+ Staff Mobility for Teaching (agreement n. n. 2017-1-IT02-KA107-035832) at the University of Belgrade (Serbia).

2022 - February 5-11: Erasmus+ Staff Mobility for Teaching (agreement n. 2019-1-IT02-KA107-061646) at the University of An Najah, Nablus (Palestine), Faculty of graduate students.

2022 - February 20-26: Universities for EU Projects N. 2020-1-IT02-KA103-078224 Erasmus Plus KA1 at the

Swedish University of Agricultural Sciences Malmö (Sweden).

2022 - May 18: Lesson on Food production and higher plants in BLSSs for MELiSSA Summer University of the European Space Agency (ESA), Sofia (Bulgaria), (remote presentation).

International Scientific Collaborations

From 2008: Scientific collaboration with partners of the Micro-Ecological Life Support System Alternative (MELiSSA) program of the European Space Agency (ESA).

Institutional assignments and Assignments in scientific societies

From 2002 - Regional Delegate of the Italian Society for Horticulture (Società Orticola Italiana - S.O.I.) - Section Floriculture and Ornamental Plants.

From 2016 - Delegate of Researchers in the Council of the Department of Agricultural Sciences, University of Naples Federico II (Naples, Italy).

From 2006 - Responsible for the Socrates/Erasmus Bilateral Agreement between Faculty of Agricultural Sciences University of Naples Federico II - Ziraat Fakültesi Akdeniz Universitesi (Antalya, Turkey).

From 2005 - Member of the Commission for the Internship for the Laurea course in Agricultural Sciences and Technologies, Faculty of Agricultural Sciences of Portici, University of Naples Federico II (Naples, Italy).

From 2005 - Delegate for Researchers at the Council of the Faculty of Agriculture of the University of Naples Federico II (Naples, Italy).

From 2018 - Member of the Commision for the admission of foreign students Department of Agricultural Sciences, University of Naples Federico II (Naples, Italy).

2020-2022 - Member of the Bord of direction of the Italian Society for Horticulture (Società Orticola Italiana - S.O.I.) - Section Floriculture and Ornamental Plants

Participation to research projects

As Principal Investigator

2023 - Progetti di ricerca di Rilevante Interesse Nazionale (PRIN) 2022 PNRR. Project "Smart systems for improving artificial light use efficiency in controlled environment agriculture" (Smart-Light). Duration: 24 months.

2019 - Italian Space Agency (ASI) project Systems and technologies for production of microgreens in Space 'Microgreens x Microgravity' (MICROx2). Duration: 36 months. Role: Manager WP 1400 Definizione dell'intensità e della composizione della luce per la produzione in ambiente spaziale Definition of light intensity and spectral composition for plant production in Space. Scientific manager: S. De Pascale.

2018 - Rural development plans (P.S.R.) Campania region Misura 16.1.1 - Support for the constitution and functioning of the PEI Operative Groups on agricultural productivity and sustainability. Project "Study on the introduction of eco-compatible cultivation and defense techniques, on the recycling and enhancement of waste and on the introduction of native species originating from the Mediterranean environment, in Campania (ECOVIV)". Duration: 10 months.

2018 - European Space Agency (ESA) Project "PlAnt Characterization unit for closed life support system - engineering, MANufacturing & testing (PaCMan)". Duration: months 24. Role: Manager WP1000PCU requirements definition. Scientific manager: prof. S. De Pascale.

2017 - Convention for the realization of a scientific collaboration Biolchim s.p.a. (Medicina, Bologna) "Evaluation of the effectiveness of commercial biostimulant and corrective formulations in soilless flower and horticultural crops raised". Duration: 12 months.

2016 - Project "Light quality and photosynthesis in flower species (Qua-Lu-Flor)". Department of Agriculture - Expenses for the execution of the departmental research. Duration 16 months. Role: Scientific Responsible.

2012 Financing for the start of original experiments (FARO): Plants as functional food for long term missions in Space: effect of ionizing radiations on tomato growth (Tom-Rad - Tomato and Radiation).

2012 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF): Quality of ornamental products for use of guidelines green planning in urban and extra-urban environment (QuaProVer).

2009 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF) OIGA: Strategies to increase the sustainability of Anthurium production for cut stem in Southern Italy.

2000 - University of Naples Federico II: Founding for young researchers: Influence of irrigation regime on nitrogen use efficiency in flower species.

As participant

European projects

2019 - Italian Space Agency (ASI) project Rebus - In-situ resource bio-utilization for life support system. Scientific manager: S. De Pascale. Duration: 36 months.

2018 - European Space Agency (ESA) Project PFPU phase 2 - Precursor of Food Production Unit, Phase A System Study. Scientific manager: prof. S. De Pascale.

2017 - Italian Space Agency Project (ASI) Explora – Human and robotics exploration of the space; educational program within the Mission ISS (International Space Station) 53/54 "VITA".

2016 - European Space Agency (ESA) Project Pilot Plant Compartment IVb: Air & Canopy Sub-compartment Analysis (ACSA), MELiSSA program. Scientific manager: prof. S. De Pascale. Duration: 18 months.

2015 - European Space Agency (ESA) Project Precursor of Food Production Unit (PFPU), MELiSSA program. Scientific manager: prof. S. De Pascale. Duration: 18 months.

2015 - European Space Agency (ESA) Project Water Across the Plant Systems: effects of microgravity on organ morphological and functional traits (WAPS). ILSRA (International Life Sciences Research Announcement) program-2014-0020. Scientific manager: prof. G. Aronne. Duration: 24 months.

2012 - European Space Agency (ESA) Project Micro-Ecological Life Support System Alternative - MELiSSA - Food Characterization Phase 2 - Cultivar Selection.

2012 - European Space Agency (ESA) Project Greenhouse module for Space System - Green-MoSS.

Other projects

2023 - Piani di sviluppo rurale (P.S.R.) Regione Campania Misura 16.1.2. "INnovare il comparto Agroalimentare moduLAndo la radiazione solaRE (INALARE)". PI of WP4 Crops agronomical evaluation. Scientific manager: prof. M. Mori. Duration: 24 months.

2018 - Piani di sviluppo rurale (P.S.R.) Regione Campania Misura 16.1.1 - "Studio sull'introduzione di tecniche di coltivazione e di difesa ecocompatibili, sul riciclo e la valorizzazione degli scarti e sull'introduzione di specie autoctone originarie dell'ambiente mediterraneo, nell'ortoflorovivaismo campano (ECOVIV)".

2014 - Italian Space Agency (ASI) EPO (Education and Public Outreach) - HiP (Higher Plants), MISSIONE ISS 42/43 "FUTURA" con LISS (Lessons on the International Space Station).

2011 - Ministry of Education, Universities and Research (MIUR): Sustainability of potted plants production in Mediterranean environment - SoProMe.

2009 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF): Production chain technologies for the control of water stress tolerance in *Bougainvillea*.

2009 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF): production scheduling of Phalaenopsis potted plants: physiologic, technologic and economic aspects.

2009 - Ministry of Education, Universities and Research (MIUR) PRIN: Morpho-physiological components of water and salt stress in flower model-species: individuation and functional characterization.

2008 - European Space Agency (ESA): Micro-Ecological Life Support System Alternative - MELiSSA - Food Characterization Phase 1.

2007 - Ministry of Education, Universities and Research (MIUR) PRIN: Water homeostasis and cut flowers quality.

2006 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF): Eco-efficiency of water management in floriculture: resources, technologies and systems for optimization.

2006 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF) and Liguria Region: Collection and valorisation of autochthonous and naturalized plant heritage: productive, varietal and economic aspects related to the diversification and introduction of product innovation in floriculture (ReVFlor AgroInnova).

2006 - Sicily Region: Nitrogen nutrition of vegetables: development and transfer of innovative methods to increase the use efficiency of fertilizers, to reduce the environmental impact and improve the products quality (AZORT).

2005 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF): Modelization of temperature requirements of flower species and control strategies for the energy-input reduction. Valorisation on floriculture and nursery in the South of Italy (ProFloMer).

2005 - Ministry of Education, Universities and Research (MIUR) PRIN: Modulation of trans-cellular water fluxes and vase life of cut flowers.

2005 - Campania Region: Sustainable restoration of fertility in salted soils and valorisation of typical products of Campania region.

2004 - Campania Region: Activity of research, experimentation and test in floriculture at the experimental centres of Eboli, Salerno and Ponticelli. Cultivation of rose in soilless on solid substrates.

Agreement with Con.Flo.Mer. (Consortium for the development of floriculture in southern regions), Department of Agriculture of Campania Region and University of Naples Federico II.

2003 - Government Department for the archaeological heritage of Naples and Caserta: Study for the definition of guidelines for the control of weeds and for the design of a project on green areas in the archaeological area of Villa Jovis - Capri. Agreement with Government Department for the archaeological heritage of Naples and Caserta and University of Naples Federico II.

2003 - Ministry of Education, Universities and Research (MIUR) PRIN: Physiology of production and technologies for flower species scheduling - temperature and light requirements of cut flower species and provisional models of flowering: two cases of study.

2002 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF) POM: Improvement of extra seasonal flower productions while respecting the environment.

2001 - Ministry of Agriculture, Food and Forestry Policies (MiPAAF): Ornamental plants: products and innovative technologies on ornamental plants with particular attention to the Southern areas.

2001 - National Research Council (CNR) for young researchers: Morpho-physiological response of rose to abiotic stresses in coastal environment.

2001 - Sicily Region: Interregional Project: Validation of adaptability of Mediterranean species to environmental conditions different from the typical ones - Validation of cultivation of flower and ornamental species in Mediterranean environment.

1999 - National Research Council (CNR): Characterisation and valorisation of genetic, plant, animal and microbial resources (biodiversity) - bio-attitudinal evaluation of Mediterranean species for ornamental purposes and environmentally friendly cultivation techniques.

Other titles

Tutor of the PhD projects

Academic years 2022-2023/2024-2025 - University Hassan II, Casablanca (Morocco). PhD program Environmental Process Engineering - Engineering Science.

- Doctorate thesis (temporary title): Study of the Impact of Agricultural Activities on Groundwater and Surface Water Pollution: Modeling and Experimentation. Student: Hatim Sanad. Co-tutor: Professor L. Mouhir. Italian Co-tutor: Professor R. Spaccini (University of Naples Federico II, Italy).
- Doctorate thesis (temporary title): Valorization of various composts made from green waste at the Botanical Experimental Garden for soil amendment. Student: Majda Oueld Lhaj. Co-tutor: Professor L. Mouhir. Italian Co-tutor: Professor R. Spaccini (University of Naples Federico II, Italy).

Academic years 2021-2022/2023-2024 - PhD in Food Science University of Naples Federico II XXXVII cycle: Impact of light on plant growth: characterisation and modelling. Student Arouna Nafiou. Funded by the European Space Agency (ESA). Duration 3 years.

Academic years 2016-2017/2018-2019 - PhD in Agricultural and Agri-food Sciences University of Naples Federico II XXXII cycle: The modulation of the light spectrum for the control of growth and development in greenhouse-grown flowering species. Student G.C. Modarelli. Co-Tutor Dr. C. Arena (Department of Biology, University of Naples Federico II). Duration 3 years.

Participation in international research networks

2008 Participation to the MELiSSA consortium within ESA program MELiSSA - Micro-Ecological Life Support System Alternative.

Scientific and editorial committees and review activities

2015 Review Editor of the international journal Frontiers in plant science, section Crop and Product Physiology (Crop Science and Horticulture).

2018-Invited Guest Editor of the international journal Frontiers in plant science for the Special topic "Plants in Space research". Title of the volume: Higher Plants, Algae and *Cyanobacteria* in Space Environments.

2017 Component of the Scientific Committee of the International Symposium on New Technologies for Environment Control, Energy-saving and Crop Production in Greenhouse and Plant Factory - Greensys 2017, International Society for Horticultural Science (ISHS), Beijing, China, 20-24 August.

2013 Reviewer for the evaluation of research projects of the Ministry of Education, University and Research (MIUR) - Bando "Futuro in Ricerca 2013" (Area delle Scienze agrarie).

2019 - Referee for the Netherlands Organisation for Scientific Research (NWO) - domain Applied and Engineering Sciences (TTW).

Editorial Board

Journal Acta Horticulturae of the International Society for Horticultural Science (ISHS), volumes:
- 1345 VIII International Conference on Landscape and Urban Horticulture – LUH 2021, Catania (Italy) - (virtual symposium), December 15, 2021. Editors D. Romano, S. Toscano, F. Bretzel.
- 1227 International Symposium on New Technologies for Environment Control, Energy-saving and Crop Production in Greenhouse and Plant Factory - Greensys 2017. Beijing (China), 20-24 August 2017. Editors Q. Yang, W. Luo.
- 956 ISHS 7th International Symposium on Light in Horticultural Systems - LightSym 2012. Wageningen (The Netherland) October 14-18, 2012. Editors S. Hemming, E. Heuvelink.
- 893 ISHS International Symposium on High Technology for Greenhouse Systems - Greensys 2009. Québec City (Canada), June 14-19. Editor M. Dorais.
- 881 ISHS 2nd International Conference on landscape and urban horticulture - LUH 2009, Bologna (Italy), June 9-13. Editors G. Prosdocimi Gianquinto, F. Orsini.
- 801 ISHS International Congress High Technology for Greenhouse system Management - GreenSys 2007, Naples (Italy), October 4-6. Editors S. De Pascale, G. Scarascia Mugnozza, A. Maggio, E. Schettini.

Referee for scientific journals
- international journals: Acta horticulturae, Acta astronautica, Advances in Agriculture, Advances in Space Research, African Journal of Agricultural Research, Australian Journal of Crop Science, Biologia plantarum, Biosystems Engineering, European Journal of Horticultural Science, Frontiers in plant science, Italus Hortus, Journal of Plant Growth Regulation, Journal of Plant Physiology, Life Sciences in Space Research, Plant Biology, Scientia Agricola, Scientia horticulturae, Sustainability.

Participation to international conferences

As Chair person

2024 - 75th International Astronautical Congress (IAC) of International Astronautical Federation (IAF), Milan (Italy), October 14-18. Session: Plant cultivation in space for food production and resource regeneration: opportunities, constraints and progress in technologies.

2023 Sessione Sistemi Colturali. XIV Giornate Scientifiche della Società di Orto-floro-frutticoltura Italiana (SOI), Turin (Italy), June 21-23.

2020 - European Space Agency (ESA) MELiSSA conference 2020: Current and future ways to closed life support systems. Session Edible Biomass. Held in digital format because of the SARS-COVID-19 emergency, November 3-5, 2020, https://melissaconference.org/

2019 - European Space Agency (ESA) Workshop MELiSSA Plant Characterization Unit (PCU). November 4th, 2019. Department of Agricultural Sciences of the University of Naples Federico II (Italy).

As invited speaker

2016 - European Space Agency (ESA) MELiSSA Workshop Science and Technologies on Regenerative Life-Support, Lausanne (Switzerland), 8-9 June. Food production and preparation - The state of the art. Paradiso R., De Pascale S., De Micco V., Aronne G.

2016 - European Mars Society (EMS) Conference: From simulation to reality, Bergamo (Italy), 14-16 October. Plant cultivation for Bioregenerative Life Support Systems (BLSSs) in Space. Paradiso R., Rouphael Y., Pannico A., De Pascale S.

As speaker

2024 - 75th International Astronautical Congress (IAC) of International Astronautical Federation (IAF), Milan (Italy), October 14-18. Temporary title: state of the art of research on plant cultivation for space application.

2023 - European Geosciences Union (EGU) General Assembly 2023, Vienna (Austria), April 23-28. Mars regolith simulant as substrate for cultivation of higher plants in space colonies: the need for organic amendment for potato as a case study. Paradiso R., Caporale A.G., Liuzzi G., Palladino M., De Pascale S., Adamo P. https://doi.org/10.5194/egusphere-egu23-14954, 2023

2020 - European Space Agency (ESA) MELiSSA conference 2020: Current and future ways to closed life support systems. Session Edible Biomass. Held in digital format because of the SARS-COVID-19 emergency, November 3-5, 2020, https://melissaconference.org/. Design of a module for cultivation of tuberous plants in space: the project "Precursor of Food Production Unit" (PFPU). Paradiso R., Ceriello A., Pannico A., Palladino M., Boscheri G., Fortezza R., De Pascale S.

2018 - First joint AgroSpace-MELiSSA workshop, Rome (Italy), 16-18 May. Light spectral composition is a key factor in controlling plant growth and tuber quality of potato in controlled environments. Paradiso R., Arena C., Rouphael Y., d'Aquino L., Vitaglione P., De Pascale S.

2015 - International Space Life Science Working Group (ISLSWG) Workshop on Bioregenerative Life Support, Turin (Italy), 28-29 May. Ground-based research for soybean cultivation in BLSS: harmonization of plant structure and physiology in hydroponics. Paradiso R., De Micco V., Arena C., Aronne G., De Pascale S.

2013 - 19th Humans in Space Symposium of the International Academy of Astronautics (IAA), Cologne (Germany), 7-12 July. Effects of high- and low- LET ionising radiation on plants: are plants ready for spaceflight Arena C., Paradiso R., Aronne G., De Pascale S., De Micco V.

2012 - 63rd International Astronautical Congress (IAC) of the International Astronautical Federation (IAF). Naples

(Italy), 1-5 October. Hydroponic cultivation of soybean for Bioregenerative Life Support Systems (BLSSs): the effect of nitrogen source and bacterial root symbiosis. Paradiso R., Buonomo R., Dixon M.A., Barbieri G., De Pascale S.

2012 - Workshop Plant Water Relations. ICT International - Department of Agricultural Engineering and Agronomy University of Naples Federico II, PRIN Project 2009. Faculty of Agriculture, Portici (Naples, Italy), 17-19 September. Morpho-physiological determinants of tolerance to water and salinity stress in model flowering species: identification and functional characterization. Paradiso R., Di Stasio E., Raimondi G., Caputo R., Maggio A., De Pascale S.

2009 - International Symposium on High Technology for Greenhouse Systems - Greensys 2009 (ISHS), Québec City (Canada), 14-19 June. Light use efficiency at different wavelengths in rose plants. Paradiso R., Meinen E., Snel J., van Ieperen W., Hogewoning S.W., Marcelis L.F.M.

2008 - International Symposium on Strategies Towards Sustainability of Protected Cultivation in Mild Winter Climate (ISHS), Antalya (Turkey), 6-11 April. Effects of thermal regime on growth and flowering of *Lisianthus*. Paradiso R., Buonomo R., De Pascale S.

2007 - International Congress High Technology for Greenhouse system Management - GreenSys 2007 (ISHS), Naples (Italy), 4-6 October. Thermal and light requirements for flower differentiation of snapdragon. Paradiso R., Aronne G., De Pascale S.

2003 - International Symposium on Managing Greenhouse crops in Saline environment (ISHS), Pisa (Italy), 9-12 July. Effect of electrical conductivity levels of nutrient solution on growth, gas exchanges and yield of two gerbera cultivars in soilless system. Paradiso R., De Pascale S., Aprea F., Barbieri G.

Roberta Paradiso