

Neda Dalir



Biography

University Lecturer (PhD, Assistant Professor)

Department of Soil Science, Faculty of Agriculture, Tarbiat Modares University (TMU)

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Languages: Persian (Native), English (Professional Working)

Google Scholar: <https://scholar.google.com/citations?user=cCU-5nYAAAAJ&hl=en>

Publons: <https://publons.com/researcher/3145745/neda-dalir/>



Education

PhD | 2011 - 2016 | in Soil Fertility and Plant Nutrition, Isfahan University of Technology (IUT), Department of Soil Science, Isfahan, Iran. Thesis: "Characteristics of nickel uptake and transport as affected by certain rhizosphere amino acids in wheat". Supervisor: Prof. Dr. A. H. Khoshgoftarmanesh. **Thesis grade: Excellent.**

Sabbatical leave | Mar 2015 - Nov 2015 | in Chair of Soil Protection, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland). Supervisor Prof. Dr. Rainer Schulin.

MSc | 2007 - 2010 | in Soil Chemistry and Fertility, Department of Soil Science, Shiraz University, Shiraz. Iran.

Thesis: "Effect of phosphorous and cadmium application on chemical forms of cadmium in soil and its uptake by spinach". Supervisor Prof. Dr. N. A. Karimian. **Thesis grade: 20/20.**

BSc | 2003 - 2007 | in Soil Science, Department of Soil Science, Shiraz University, Shiraz. Iran.



Honors and Awards

- Top Researcher Award by Tarbiat Modares University, Tehran, Iran for publishing papers in leading academic journals (2022)
- Top ten lecturers in the College of Agriculture, Tarbiat Modares University, Tehran, Iran (2018)
- Member of Iran's Young Elite National Foundation (2007 - present)
- First ranked in the PhD entrance exam (2011)
- First ranked MSc Graduate (2010)
- Third ranked BSc Graduate (2007)



Academic Functions and Services

- Assistant Professor, Department of Soil Science, Tarbiat Modares University (TMU), Tehran, Iran (Feb 2018 - present)
- Representative of the Soil Science group in the Faculty Research Council, Tarbiat Modares University, Tehran, Iran (2018 - present)
- Participation in the Scientific Organization of the 3rd National Congress on Hydroponic and Greenhouse Products, Isfahan University of Technology, Isfahan, Iran (2012)
- Working as R&D expert in the Knowledge based company of Zist Fanavaran Novin on Fertilizer Production and Environment Protection, Isfahan, Iran (2011-2015)



Technical Skills and Familiarity with Professional Software

- **Application of analytical methods used in soil chemistry and plant physiology**, including gas chromatography (GC), high-performance liquid chromatography (HPLC), atomic absorption spectrophotometry (AAS), UV-Vis spectrophotometry, photoelectric flame photometry
- **Chemical speciation software:** Geochem-EZ, MINEQL, MINTEQA2
- **Statistical software:** GraphPad Prism, SigmaPlot, SAS, SPSS



Reviewing Activities

Reviewer for: Environmental and Experimental Botany (Q1), Soil Biology and Biochemistry (Q1), Applied Soil Ecology (Q1), PLoS One (Q1), Scientific Reports (Q1), Sustainability (Q1), European Journal of Agronomy (Q1), International Journal of Plant Production (Q2), Horticulturae (Q1), Sustainability (Q1), Journal of Agricultural Science and Technology (Q2) Fruits (Q3), Iran Agricultural Research, Journal Of Agroecology



Lecture Courses Taught

Soil Testing and Plant Analysis | Advanced Soil Fertility | Plant Nutrition Management | Research Methods and Instruments in Soil Fertility Management and Plant Nutrition | Sustainable Soil Management



Professional Memberships

Soil Science Society of Iran | Soil Science Society of America | Crop Science Society of Iran



Publications

1. Dalir, N., Karimian, N., Yasrebi, J., & Ronaghi, A. (2013). Chemical forms of cadmium in a calcareous soil treated with different levels of phosphorus and cadmium and planted to spinach. *Archives of Agronomy and Soil Science*, 59 (4), 559-571. (IF: 3.092)
2. Dalir, N., & Khoshgoftarmanesh, A. H. (2014). Symplastic and apoplastic uptake and root to shoot translocation of nickel in wheat as affected by exogenous amino acids. *Journal of Plant Physiology*, 171 (7), 531-536.3. (IF: 3.686)
3. Dalir, N., & Khoshgoftarmanesh, A. H. (2015). Root uptake and translocation of nickel in wheat as affected by histidine. *Journal of Plant Physiology*, 184, 8-14. (IF: 3.686)
4. Khodamoradi, K., Khoshgoftarmanesh, A. H., Dalir, N., Afyuni, M., & Schulin, R. (2015). How do glycine and histidine in nutrient solution affect zinc uptake and root-to-shoot translocation by wheat and triticale? *Crop and Pasture Science*, 66 (11), 1105-1110. (IF: 2.286)
5. Dalir, N., Tandy, S., Gramlich, A., Khoshgoftarmanesh, A., & Schulin, R. (2017). Effects of nickel on zinc uptake and translocation in two wheat cultivars differing in zinc efficiency. *Environmental and Experimental Botany*, 134, 96-101. (IF: 6.028)
6. Dalir, N., Khoshgoftarmanesh, A. H., Massah, A., & Shariatmadari, H. (2017). Plasma membrane ATPase and H⁺ transport activities of microsomal membranes from wheat roots under Ni deficiency conditions as affected by exogenous histidine. *Environmental and Experimental Botany*, 135, 56-62. (IF: 6.028)
7. Rafie, M. R., Khoshgoftarmanesh, A. H., Shariatmadari, H., Darabi, A., & Dalir, N. (2017). Influence of foliar-applied zinc in the form of mineral and complexed with amino acids on yield and nutritional quality of onion under field conditions. *Scientia Horticulturae*, 216, 160-168. (IF: 4.342)
8. Abdolahipour, M., Kamgar-Haghighi, A. A., Sepaskhah, A. R., Dalir, N., Shabani, A., Honar, T., & Jafari, M. (2019). Supplemental irrigation and pruning influence on growth characteristics and yield of rainfed fig trees under drought conditions. *Fruits*, 74 (6), 282-293. (IF: 0.8)
9. Honar, T., Shabani, A., Abdolahipour-Haghighi, M., Dalir, N., Sepaskhah, A. R., Kamgar-Haghighi, A. L. I., & Jafari, M. (2020). Effect of supplemental irrigation timing and potassium fertilizer on rain-fed fig in micro-catchment: yield and yield quality. *Iran Agricultural Research*, 39 (2), 29-36.
10. Yousefi, H., Dalir, N., Rahnemaie, R., & Babaei, A. (2020). The alleviation of salinity-induced stress by using boron in soilless grown rose. *Journal of Plant Nutrition*, 43(4), 526-537. (IF: 1.707)
11. Mousavi, S. A., Dalir, N., Rahnemaie, R., & Schulin, R. (2021). Phosphate and methionine affect cadmium uptake in Valerian (*Valeriana officinalis* L.). *Plant Physiology and Biochemistry*, 158, 466-474. (IF: 5.437)
12. Mousavi, S. A., Dalir, N., Rahnemaie, R., & Ebadi, M. T. (2021). Phosphate concentrations and methionine application affect quantitative and qualitative traits of valerian (*Valeriana officinalis* L.) under hydroponic conditions. *Industrial Crops and Products*, 171, p.113821. (IF: 6.449)
13. Omid, E., Dalir, N., Rahnemaie, R., & Babaei, A. (2021). Alleviation of salinity stress in *Rosa Hybrida* L. cv. 'Dolce Vita' by foliar application of calcium carbonate nanoparticles. *Iranian Journal of Horticultural Science. (In Persian with Eng. Abstract)*. 52 (3), 1-10.
14. Honar, T., Shabani, A., Abdolahipour, M., Dalir, N., Sepaskhah, A. R., Kamgar-Haghighi, A. L. I., & Jafari, M. (2021). Rain-fed fig trees response to supplemental irrigation timing and potassium fertilizer in micro-catchment. *Journal of Horticultural Science and Biotechnology*. 96 (6), 738-749. (IF: 1.641)
15. Dehghani, F., Rahnemaie, R., Dalir, N., Saadat, S., & Zarebanadkouki, M. (2021). Interactive Effect of Salinity and Ca to Mg Ratio of Irrigation Water on Pistachio Growth Parameters and its Ionic Composition in a Calcareous Soil. *New Zealand Journal of Crop and Horticultural Science*. Published online: 08 Dec 2021. (IF: 0.927)
16. Bayat, S., Dalir, N., Mokhtassi-Bidgoli, A., Malakouti, M. J., & Shahbazi, K. Selenium alleviates cadmium-induced stress in durum wheat (*Triticum durum* var. Hana) by retention of cadmium in root and modulating photosynthesis and chlorophyll fluorescence. *Journal of Plant Nutrition*. Published online: 31 Jul 2022. (IF: 1.707)
17. Dalir, N., Rahimi, M., & Schulin, R. How do phosphate and methionine affect distribution and chemical forms of cadmium in valerian (*Valeriana officinalis* L.)? *Rhizosphere*. (Under Review)
18. Bayat, S., Mokhtassi-Bidgoli, A., Dalir, N., Malakouti, M. J., & Shahbazi, K. Zinc alleviates cadmium toxicity by reducing cadmium translocation and enhancing photosynthetic characteristics in durum wheat (*Triticum durum* ssp.). *Gesunde Pflanzen*. (Under Review)



Books (Chapters)

- Abdolahipour, M., Kamgar-Haghighi, A.A., Sepaskhah, A.R., Davatgar, N. & **Dalir, N.** (2022). Irrigation and Water Requirements. In A. Sarkhosh, A. Yavari, and L. (Eds.), *The Fig: Botany, Production and Uses*. CABI.
- **Dalir, N.** Nutrients use efficiency in plants. In V.P. Singh (Ed.). *Plant Ionomics: Sensing, Signaling and Regulation*. Wiley-Blackwell. (In press)
- **Dalir, N.** Nutrients uptake and transport in plants: an overview. In V.P. Singh (Ed.). *Plant Ionomics: Sensing, Signaling and Regulation*. Wiley-Blackwell. (In press)



Projects

- Effect of potassium application on increasing the resistance of rainfed fig tree to drought. National Drought Research Institute, supervised by Prof. A. R. Sepaskhah and Dr. T. Honar. (2009 - 2011).
- Effect of supplemental irrigation and pruning on the yield of rainfed fig trees in drought and wet conditions. National Drought Research Institute, supervised by Prof. A.R. Sepaskhah and Prof. A.A. Kamgar. (2009 - 2011).



Presentations (selected)

- **Dalir, N.** 2015. Effect of different levels of nickel on zinc uptake and transport on two wheat cultivars. Annual Research Day of the Institute of Terrestrial Ecosystems, Swiss Federal Institute of Technology (ETH) Zurich, Switzerland.
- **Dalir, N.** 2017. Effects of nickel on zinc uptake and translocation in two wheat cultivars differing in zinc efficiency. 14th International Conference on the Biogeochemistry of Trace Elements (ICOBTE), Swiss Federal Institute of Technology (ETH) Zurich, Switzerland
- **Dalir, N.**, Mousavi, S. A., Ebadi, M.T., & Rahnamaie, R. 2019. The effect of phosphate concentration on root growth of valerian (*Valeriana officinalis* L.) in hydroponic growing media. 16th Iranian Soil Science Congress, University of Zanjan, Iran.
- **Dalir, N.** 2022. Plant nutrition and supplementary irrigation of rainfed fig orchards. Webinar Keynote Speaker. Management of deficit irrigation and supplementary irrigation of orchards. National Drought Research Institute. Shiraz University, Shiraz. Iran.



Supervision Activities

Ongoing Projects

- Investigating the mechanism of methionine effect on zinc uptake and transport in two wheat cultivars differing in zinc efficiency (MSc Thesis, Role: Supervisor)
- Effect of ionic composition of nutrient solution on quality and quantity of saffron corm and stigma (PhD Thesis, Role: Advisor)
- Uptake, translocation, chemical forms, physiological and morphological effects of cadmium on durum wheat (*Triticum durum*) with supplied zinc and selenium in cadmium spiked soil (PhD Thesis, Role: Advisor)
- Investigating the effect of silicon oxide on the availability and absorption of water and food by the plant (MSc Thesis, Role: Advisor)
- Design, fabrication and assessment of an agrivoltaic system based on a solar concentrating photovoltaic module using point-focus fresnel Lens for co-generation of electricity and agricultural product (MSc Thesis, Role: Advisor)
- Investigating the effect of silicon oxide on water availability and absorption of nutrients in corn (MSc Thesis, Role: Advisor)

Defended Theses

- Effect of phosphate and Methionine on the yield and harvesting age of valerian (*Valeriana Officinalis* L.) (MSc Thesis, Role: supervisor) (2018 – 2020)
- Impacts of conservation tillage and crop residue management on soil properties: A Short-Term trial in Iran (MSc Thesis, Role: Advisor) (2018 – 2020)
- The possibility of partial substitution of phosphate with phosphite in hydroponic cucumber Nutrient (MSc Thesis, Role: supervisor) (2019 – 2021)
- Effect of auxin on root system architecture and yield of medicinal herb *Valeriana officinalis* L. in hydroponic cultivation (MSc Thesis, Role: supervisor) (2019 – 2021)