

Scientific and Biotechnological Bioresource Nucleus, BIOREN-UFRO

María de la Luz Mora Gil

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AFFILIATIONS

Full Professor, Chemical Science and Natural Resources Department, Universidad de La Frontera, Chile.

Head of Scientific Technological Research Nucleous

SHORT BIOGRAPHY

Dra. María de la Luz Mora heads an interdisciplinary research group (Plant Soil interaction and plant biotechnology, Center) mainly on Physicochemistry of Soil and (Material related) and Environment, Soil-Plant Interaction (Rhizosphere) and Plant Nutrition, Plant Physiology and Biotechnology, microbiology, contributing significantly to plant production especially in cereals, meat and milk in the South of the country. Dra. Mora is author and coauthor of more than 50 scientific publications in the last 5 years, highlighting by an important contribution of international researchers and doctorate students as well as post doctorates. In addition, she has generated and participated in several International Cooperation Programs with Research Canters of excellence. She is the Director of the Scientific and Technological Bioresources Nucleus (Bioren-Ufro) from 2009. During her career as researcher she has directed several National and Co-International projects (FONDECYT, FONDEF, FIA and ECOS). She was the creator of the Doctorate Program in Sciences of Natural Resources and she also has advised about 20 doctor graduates. One of the important research lines is nanotechnology in soil, agriculture and environment area, like biofertilizers and different biotechnological applications. Also, she is the creator and the head of Soil and Plant Laboratory Services, since 1992 in Agroindustry-Ufro technical Division. Nowadays she is working in a new project in phosphorus in the rizosphere, C:N:P stoichiometry, P recycling from wastes and genomic and proteomic identifying the phosphate activity gen looking for new biofertilizer and innovative food production strategies in agriculture management.

ACADEMIC DEGREES AND PROFESSIONAL STUDIES

1992 Doctor in Chemistry, Universidad de Santiago de Chile, Santiago, Chile.
1992 Postdoctorate, CSIRO-Perth-Australia, Australia.
1980 Chemist, Universidad de Chile.

RESEARCH LINES

Environment and Soil Physicochemistry
Soil-Pant Interactions, Rizosphere and Plant Nutrition

Soil fertility and Mineral Nutrition

PROFESSIONAL EXPERIENCE

Undergraduate level courses

Biochemistry and Environment
Physical chemistry

Graduate level courses

Biogeochemical cycles
Soil Chemistry and Environment
Soil and Plant Nutrition

SUPERVISOR OF GRADUATE AND UNDERGRADUATE THESIS

Postdoctoral Supervisor:

2017-2019 Patricio Barra. FONDECYT Posdoctoral N° 3170629
2016-2018 Rayen Millaleo. FONDECYT Posdoctoral N° 3160799
2015-2017 Phuong Ngo. FONDECYT Posdoctoral N° 3150194
2013-2015 Paola Durán. FONDECYT Posdoctoral N°3130542
2011 – 2014 Marcela Calabi. FONDECYT Posdoctoral N° 3120157.
2006-2009. Paula Cartes CONICYT-UFRO Postdoctoral Project PSD-26 (Bicentenary Program of Science and Technology).
2009-2013 Alejandra Ribera. FONDECYT Posdoctoral N° 3090074.
2007-2010 Mara Cea. FONDECYT Posdoctoral N° 3080039.

Graduate Thesis Supervisor:

2016. Tomás Lobos. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería y Ciencias, Universidad de La Frontera.
2015. Gabriela Velásquez. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería y Ciencias, Universidad de La Frontera.
2014 Jacqueline Acuña. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería y Ciencias, Universidad de La Frontera.
2014 Oscar Martínez. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería y Ciencias, Universidad de La Frontera.
2012 Daniel Menezes. Doctorado Internacional en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera-Universidad Federico II de Nápoles
2011 Elizabeth Garrido. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.
2011 Marcela Calabi. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.
2011 Cecilia Paredes. Magister en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.
2009 Bárbara Fuentes. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.
2008 Pedro Núñez. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.
2006 Analí Rosas. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.

2006 Erika Vistoso. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.

2005 Paula Cartes. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera.

2005 Alejandra Jara. Doctorado en Química, Universidad de Chile.

2005 Gustavo Baeza. Doctorado en Química, Universidad de Santiago de Chile.

Graduate Thesis Co-supervisor:

2006 Roxana López. Doctorado en Ciencias de Recursos Naturales, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera, Universidad de La Frontera.

Undergraduate Thesis Supervisor:

More than 30

ACADEMIC RESPONSABILITIES

- 2017 at date Director of the Network for Extreme Environments Research (NEXER) between Universities of: La Frontera, Magallanes and Antofagasta (<http://www.nexerchile.cl/>).
- 2016-2024 Deputy Director CORFO technological program: Centro para la Investigación en Fruticultura para la Zona Sur. 16PTECFS-66647
- 2015-at date Full member of the Intellectual Property Commission of the Technology Transfer Office, Universidad de la Frontera. <http://innovacion.ufro.cl/>
- 2013-2017 Director of the Convenio de Desempeño for the internationalization of doctoral programs ascribed to the Scientific and Technological Bio-Resource Nucleus, Universidad de La Frontera.
- 2009-at date Director of the Scientific and Technological Bio-Resource Nucleus, Universidad de La Frontera.
- 2004-at date Editor of the Journal of Soil Science and Plant Nutrition, from the Chilean Society of Soil Science.
- 2003-2007 Member of the Directive Council at the Universidad de La Frontera.
- 2002-at date Full Professor, Departamento de Ciencias Químicas y Recursos Naturales, Facultad de Ingeniería y Ciencias, Universidad de La Frontera.
- 2001-2012 Founder and Director of the Doctorate program in Natural Resources Sciences, Universidad de La Frontera. Accredited for 8 years and Director of several Projects such as Mecesus and Fundación Andes for the support of the Doctorate.
- 1999-at date Member of the National Commission for Laboratory of soil and plant analyses Certification (CNA).
- 1994-at date Member of the Directive Committee at the Instituto de Agroindustria, Universidad de La Frontera.
- 1991-at date Director of Laboratory of soil and plant analyses, Instituto de Agroindustria, Universidad de La Frontera. Soil and plant analysis service for farmers and companies associated with the Agricultural sector.

ACHIEVEMENTS

2006 Award to academic carrer, Universidad de La Frontera.

CONSULTANCY SERVICES TO THE PUBLIC INSTITUTIONS

2016-at date Member of National Commission of Accreditation (CNA)

2005-2008 Member of the Central Committee for the Scientific and Technological Research Council (FONDECYT) from Consejo Nacional de Ciencia y Tecnología (CONICYT).

PUBLICATIONS

h-index: 31 **Source:** Web of Science

(Reference for search in Web of Science: Author: Mora, M.* or Mora Maria Luz or Mora MDL o M* ML; Institution: Universidad de la Frontera)

- Poblete-Grant, Patricia; Suazo-Hernández, Jonathan; Condrón, Leo; Rumpel, Cornelia; Demanet, Rolando; Malone, Sparkle L.; Mora, María de La Luz. (2020). Soil available P, soil organic carbon and aggregation as affected by long-term poultry manure application to Andisols under pastures in Southern Chile. *Geoderma Regional* 2:e 00271. doi.org/10.1016/j.geodrs.2020.e00271
- Gonzalez-Villagra, J.; Reyes-Díaz, M.; Alberdi, M.; Mora, M. L.; Ulloa-Inostroza, M.; Ribera-Fonseca, A. E. (2020). Impact of Cold-Storage and UV-C Irradiation Postharvest Treatments on Quality and Antioxidant Properties of Fruits from Blueberry Cultivars Grown in Southern Chile. *Journal of soil science and plant nutrition*. doi.org/10.1007/s42729-020-00247-5
- Leyla Parra-Almuna; Sofía Pontigo; Giovanni Larama; Jonathan R. Cumming; Jacob Pérez-Tienda; Nuria Ferrol; María de la Luz Mora. (2020). Expression analysis and functional characterization of two PHT1 family phosphate transporters in ryegrass. *Planta* 251:6. doi.org/10.1007/s00425-019-03313-0
- Poblete-Grant, Patricia; Biron, Philippe; Bariac, Thierry Bariac, Paula Cartes, María de La Luz Mora and Cornelia Rumpel. (2019). Synergistic and Antagonistic Effects of Poultry Manure and Phosphate Rock on Soil P Availability, Ryegrass Production, and P Uptake. *Agronomy*-basel 9 (4): 191
- Durán, Paola; Barra, Patricio J.; Jorquera, Milko A.; Viscardi, Sharon; Fernandez, Camila.; Paz, Cristian; Mora, María de la Luz; Bol, Roland (2019). Occurrence of Soil Fungi in Antarctic Pristine Environments. *Frontiers in bioengineering and biotechnology* 7: 28. doi: 10.3389/fbioe.2019.00028
- Zhang, Qian; Acuna, Jacqueline J.; Inostroza, Nitza G.; Mora, María Luz; Radic, Sergio; Sadowsky, Michael J.; Jorquera, Milko A. (2019). Endophytic Bacterial Communities Associated with Roots and Leaves of Plants Growing in Chilean Extreme Environments. *Scientific Reports* 9: 4950. DOI: 10.1038/s41598-019-41160-x
- Acuna, Jacqueline J.; Campos, Marco; Mora, María de la Luz; Deb P.Jaisic and Milko A. Jorquera (2019). ACCD-producing rhizobacteria from an Andean Altiplano native plant (*Parastrephia quadrangularis*) and their potential to alleviate salt stress in wheat seedlings. *Applied Soil Ecology* 136: 184-190
- Paola Durán; Gonzalo Tortella, Sharon Viscardi, Patricio Javier Barra, Victor J. Carrión, María de la Luz Mora and María José Pozo. (2018). Microbial Community Composition in Take-All Suppressive Soils. *Frontiers in Microbiology* 9: 2198. DOI: 10.3389/fmicb.2018.02198
- Leyla Parra-Almuna, Andrea Díaz-Cortez, Nuria Ferrol, María de la Luz Mora (2018). Aluminium toxicity and phosphate deficiency activates antioxidant systems and upregulates expression of phosphate transporters gene in ryegrass (*Lolium perenne* L.) plants. *Plant Physiology and Biochemistry* 130:445-454. DOI: 10.1016/j.plaphy.2018.07.031
- Barra, P.J.; Viscardi, S.; Jorquera, M.A.; Duran, P.A.; Valentine, A.J.; Mora, M.L. (2018). Understanding the Strategies to Overcome Phosphorus-Deficiency and Aluminum-Toxicity by Ryegrass Endophytic and Rhizosphere Phosphobacteria. *Frontiers in Microbiology* 9:1155. DOI: 10.3389/fmicb.2018.01155
- Barthod, J.; Rumpel, C.; Calabi-Floody, M.; Mora, M.L.; Bolan, N.S.; Dignac, M.F. (2018). Adding worms during composting of organic waste with red mud and fly ash reduces CO₂ emissions and increases plant available nutrient contents. *Journal of Environmental Management* 222: 207-215. DOI: 10.1016/j.jenvman.2018.05.079
- Calabi-Floody, M.; Medina, J.; Rumpel, C.; Condrón, L.M.; Hernández, M.; Dumont, M. Mora, María de la Luz. 2018. Smart Fertilizers as a Strategy for Sustainable Agriculture, *Advances in Agronomy* 147: 119-157. DOI: 10.1016/bs.agron-2017.10.003

- Ribera-Fonseca, A.; Rumpel, C.; Mora, María de la Luz; Nikolic, M.; Cartes, P. 2018. Sodium silicate and calcium silicate differentially affect silicon and aluminium uptake, antioxidant performance and phenolics metabolism of ryegrass in an acid Andisol. *Crop & Pasture Science* 69(2): 205-215. DOI: 10.1071/CP17202
- Lobos, T.E.; Retamales, J.B.; Ortega-Farías, S.; Hanson, E. J.; Lopez-Olivari, R.; Mora, María de la Luz. 2018. Regulated deficit irrigation effects on physiological parameters, yield, fruit quality and antioxidants of *Vaccinium corymbosum* plants cv. Brigitta. *Irrigation Science* 36(1): 49-60. DOI: 10.1007/s00271-017-0564-6
- Durán, P.; Jorquera, M.; Viscardi, S.; Carrion, V.J.; Mora, María de la Luz and Pozo, M.J. 2017. Screening and Characterization of Potentially Suppressive Soils against *Gaeumannomyces graminis* under Extensive Wheat Cropping by Chilean Indigenous Communities. *Frontiers in Microbiology* 8:1552. DOI:10.3389/fmicb.2017.01552
- Mora, María de la Luz; Demanet, R.; Acuña, J.J.; Viscardi, S.; Rengel, Z.; Jorquera, M. and Duran P. 2017. Aluminum-tolerant bacteria improve the plant growth and phosphorus content in ryegrass grown in a volcanic soil amended with cattle dung manure. *Applied Soil Ecology*. 115:19-26 doi: 10.1016/j.apsoil.2017.03.013.
- Violante, A.; Mora, María de La Luz; Caporale, A.G. 2017. Formation, properties and reactivity of coprecipitates and organomineral complexes in soil environments. *Journal of Soil Science and Plant Nutrition* 17(2): 319-340
- Pontigo, S; Godoy, K; Jimenez, H; Gutierrez-Moraga, A; Mora, MD; Cartes, P. 2017. Silicon-Mediated Alleviation of Aluminum Toxicity by Modulation of Al/Si Uptake and Antioxidant Performance in Ryegrass Plants. *Frontiers in Plant Science*. 8:642. DOI: 10.3389/fpls.2017.00642
- Barra, P.J., Inostroza, N.G., Mora, M.L., Crowley, D., Jorquera, M.A. 2017. Bacterial consortia inoculation mitigates the water shortage and salt stress in an avocado (*Persea americana* Mill.) nursery. *Applied Soil Ecology* 111: 39-47. DOI: 10.1016/j.apsoil.2016.11.012
- Inostroza, N.G., Barra, P.J., Wick, L.Y., Mora, M. L., Jorquera, M.A. 2017. Effect of rhizobacterial consortia from undisturbed arid- and agro-ecosystems on wheat growth under different conditions. *Letters in Applied Microbiology*. 64(2): 158-163. DOI: 10.1111/lam.12697
- Lagos, L.M., Acuña, J.J., Maruyama, F., Ogram, A., Mora, M.L., Jorquera, M.A. 2016. Effect of phosphorus addition on total and alkaline phosphomonoesterase-harboring bacterial populations in ryegrass rhizosphere microsites. *Biology and Fertility of Soils*. 52(7): 1007-1019. DOI: 10.1007/s00374-016-1137-1
- Jorquera, M. A., Maruyama, F., Ogram, A.V., Navarrete, O.U., Lagos, L.M., Inostroza, N.G., Acuña, J.J., Rilling, J.I., Mora, M.L. 2016. Rhizobacterial Community Structures Associated with Native Plants Grown in Chilean Extreme Environments. *Microbial Ecology*. 72(3): 633-646. DOI: 10.1007/s00248-016-0813-x
- Redel, Y., Cartes, P., Demanet, R., Velásquez, G., Poblete-Grant, P., Bol, R., Mora, M.L. 2016. Assesment of phosphorus status influenced by Al and Fe compounds in volcanic grassland soils. *Journal of Soil Science and Plant Nutrition* 16(2), 490-506.
- Lobos, T. E., Retamales, J. B., Ortega-Farías, S., Hanson, E. J., Lopez-Olivari, R., Mora, M. L. 2016. Pre-harvest regulated deficit irrigation management effects on post-harvest quality and condition of *V-corymbosum* fruits cv. Brigitta. *Scientia Horticulturae*, 207: 152-159 Impact Factor: 1.871 DOI: 10.1016/j.scienta.2016.05.022 Quartile: 1 Editorial: Elsevier Science BV, Netherlands ISSN: 0304-4238
- Acuña, J. J., Duran, P., Lagos, L.M., Ogram, A., Mora, M.L., Jorquera, M.A. 2016. Bacterial alkaline phosphomonoesterase in the rhizospheres of plants grown in Chilean extreme environments. *Biology and Fertility of Soils*. 52(6): 763-773. Impact Factor: 3.069 DOI: 10.1007/s00374-016-1113-9 Quartile: 1 Editorial: SPRINGER, 233 SPRING ST, NEW YORK, NY 10013 USA ISSN: 0178-2762
- Cid, F.P., Rilling, J.I., Graether, S.P., Bravo, L.A., Mora, M.L., Jorquera, M.A. 2016. Properties and biotechnological applications of ice-binding proteins in bacteria. *FEMS Microbiology Letters*. 363: 11 Impact Factor: 1.858 DOI: 10.1093/femsle/fnw099 Quartile: 3 Editorial: OXFORD UNIV PRESS, GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND ISSN: 0378-1097

- Menezes-Blackburn, D., Inostroza, N.G., Gianfreda, L., Greiner, R., Mora, M.L., Jorquera, M.A. 2016. Phytase-producing *Bacillus* sp inoculation increases phosphorus availability in cattle manure. *Journal of Soil Science and Plant Nutrition*. 16(1): 200-210 Impact Factor: 1.6 DOI: Quartile: 3 Editorial: SOC CHILENA CIENCIA SUELO, CASILLA 54-D, TEMUCO, 00000, CHILE ISSN: 0718-9516
- Duran, P., Acuna, J.J., Armada, E., Lopez-Castillo, O.M., Cornejo, P., Mora, M.L., Azcon, R. 2016. Inoculation with selenobacteria and arbuscular mycorrhizal fungi to enhance selenium content in lettuce plants and improve tolerance against drought stress. *Journal of Soil Science and Plant Nutrition*. 16(1): 211-225 Impact Factor: 1.6 DOI: Quartile: 3 Editorial: SOC CHILENA CIENCIA SUELO, CASILLA 54-D, TEMUCO, 00000, CHILE ISSN: 0718-9516
- Velásquez, G., Ngoa, P., Rumpel, C., Calabi-Floody, M., Redel, Y., Turner, B.L., Condrón, L. & Mora, M.L. 2016. Chemical nature of residual phosphorus in Andisols. *Geoderma*, 271(1) 27–31. Impact Factor: 2.772 DOI: 10.1016/j.geoderma.2016.01.027 Quartile: 1 Editorial: Elsevier Science BV, Netherlands ISSN: 0016-7061
- Velásquez, G., Calabi-Floody, M., Poblete-Grant, P., Rumpel, C., Demanet, R., Condrón, L., Mora, M.L. 2016. Fertilizer effects on phosphorus fractions and organic matter Andisols. *Journal of Soil Science and Plant Nutrition* 16(2), 294-304.
- Barra, P.J., N.G. Inostroza, J.J. Acuña, M.L. Mora, D.E. Crowley & M.A. Jorquera. 2016. Formulation of bacterial consortia from avocado (*Persea americana* Mill.) and their effect on growth, biomass and superoxide dismutase activity of wheat seedlings under salt stress. *Applied Soil Ecology* 102:80-91. Impact Factor: 2.644 DOI: 10.1016/j.apsoil.2016.02.014 Quartile: Q1 Editorial: Elsevier Science BV, Netherlands ISSN: 0929-1393
- Marileo, L.G., M.A. Jorquera, M. Hernández, C. Briceño, M.L. Mora, R. Demanet & G. Palma. 2016. Changes in bacterial communities by post-emergent herbicides in an Andisol fertilized with urea as revealed by DGGE. *Applied Soil Ecology* 101:141-151. Impact Factor: 2.644 DOI: 10.1016/j.apsoil.2016.02.003 Quartile: Q1 Editorial: Elsevier Science BV, Netherlands ISSN: 0929-1393
- Palma, G., M. Jorquera, R. Demanet, S. Elgueta, G. Briceño, M.L. Mora. 2016. Urea Fertilizer and pH Influence on Sorption Process of Flumetsulam and MCPA Acidic Herbicides in a Volcanic Soil. *Journal of Environmental Quality* 45(1): 323-330. Impact Factor: 2.652 DOI: 10.2134/jeq2015.07.0358 Quartile: Q2 Editorial: AmerSoc Agronomy, USA ISSN: 0047-2425
- Viscardi, S., Ventorino, V., Duran, P., Maggio, A., De Pascale, S., Mora, M.L., Pepe, O. 2016. Assessment of plant growth promoting activities and abiotic stress tolerance of *Azotobacter chroococcum* strains for a potential use in sustainable agriculture. *Journal of Soil Science and Plant Nutrition* 16(3): 848-863. DOI: 10.4067/S0718-95162016005000060
- Duran, P., Acuña, J.J., Gianfreda, L., Azcon, R., Funes-Collado, V., Mora, M.L. 2015. Endophytic selenobacteria as new inocula for selenium biofortification. *Applied Soil Ecology* 96:319-326. Impact Factor: 2.644 DOI: 10.1016/j.apsoil.2015.08.016 Quartile: 1 Editorial: Elsevier Science BV, Netherlands ISSN: 0929-1393
- Demanet, R., M.L. Mora, M.A. Herrera, H. Miranda & J.M. Barea. 2015. Seasonal variation of the productivity and quality of permanent pastures in Andisols of temperate regions. *Journal of Soil Science and Plant Nutrition* 15(1): 111-128 Impact Factor: 0.68 DOI: 10.4067/S0718-95162015005000010 Quartile: 4 Editorial: Soc. Chilena Ciencia Suelo, Chile ISSN: 0718-9516
- Cartes, P., M. Cea, A. Jara, A. Violante & M.L. Mora. 2015. Description of mutual interactions between silicon and phosphorus in Andisols by mathematical and mechanistic models. *Chemosphere* 131: 164-170. Impact Factor: 0.68 DOI: no information Quartile: 4 Editorial: Soc. Chilena Ciencia Suelo, Chile ISSN: 0718-9516.
- Palma, G., R. Demanet, M. Jorquera, M.L. Mora, G. Briceño & A. Violante. 2015. Effect of pH on sorption kinetic process of acidic herbicides in a volcanic soil. *Journal of Soil Science and Plant Nutrition* 15(3): 549-560. Impact Factor: 0.68 DOI: no information Quartile: 4 Editorial: Soc. Chilena Ciencia Suelo, Chile ISSN: 0718-9516

- Lagos, L., O. Navarrete, F. Maruyama, D. Crowley, F. Cid, M.L. Mora & M. Jorquera. 2014. Bacterial community structures in rhizosphere microsites of ryegrass (*Lolium perenne* var. Nui) as revealed by pyrosequencing. *Biology and Fertility of Soils* 50(8): 1253-1266. Impact Factor: 3.396 DOI: 10.1007/s00374-014-0939-2 Quartile: 1 Editorial: Springer, USA ISSN: 0178-2762
- Calabi-Floody, M., Rumpel, C., Velásquez, G., Violante, A., Bol, R., Condrón, L. M., Mora, M.L. 2015. Role of Nanoclays in Carbon stabilization in Andisols and Cambisols. *Journal of Soil Science and Plant Nutrition*. 15 (3): 587-604. DOI: 10.4067/S0718-95162015005000026
- Rumpel, C., Crème, A., Ngo, P.T., Velásquez, G., Mora, M.L., Chabbi, A. 2015. The impact of grassland management on biogeochemical cycles involving carbon, nitrogen and phosphorus. *Journal of Soil Science and Plant Nutrition*, 15 (2): 353-371. DOI: 10.4067/S0718-95162015005000034
- Mora, M.L., Durán, P., Acuña, J., Cartes, P., Demanet, R. and Gianfreda, L. 2015. Improving selenium status in plant nutrition and quality. *Journal of Soil Science and Plant Nutrition*, 15 (2): 486-503.
- Lagos, M.L., Maruyama, F., Nannipieri, P., Mora, M.L., Ogram, A., Jorquera, M.A. 2015. Current overview on the study of bacteria in the rhizosphere by modern molecular techniques: a mini-review. *Journal of Soil Science and Plant Nutrition*. 15 (2): 504-523
- Pontigo, S., Ribera, A., Gianfreda, L., Mora, M.L., Nikolic, M., Cartes, P. 2015. Silicon in vascular plants: uptake, transport and its influence on mineral stress under acidic conditions. *Planta* 242: 23-37. DOI: 10.1007/s00425-015-2333-1.
- Cartes, P., Cea, M., Jara, A., Violante, A., Mora, M.L. 2015. Description of mutual interactions between silicon and phosphorus in Andisols by mathematical and mechanistic models. *Chemosphere*. 131:164-70. DOI: 10.1016/j.chemosphere.2015.02.059.
- Durán, P., Acuña, J.J. Gianfreda, L., Azcón, R., Funes-Collado, V., Mora, M.L. 2015. Endophytic selenobacteria as new inocula for selenium biofortification. *Applied Soil Ecology*. 96: 319-326
- Martínez, O.A., Crowley, D.E., Mora, M.L. and Jorquera, M.A. 2015. Short-term study shows that phytate-mineralizing rhizobacteria inoculation affects the biomass, phosphorus (P) uptake and rhizosphere properties of cereal plants. *Journal of Soil Science and Plant Nutrition*. 15 (1): 153-166
- Fuentes, B., M.L. Mora, R. Bol, F. San Martine, E. Pérez & P. Cartes. 2014. Sorption of inositol hexaphosphate on desert soils. *Geoderma* 232: 573-580. Impact Factor: 2.509 DOI: 10.1016/j.geoderma.2014.06.016 Quartile: 1 Editorial: Elsevier Science BV, Netherlands ISSN: 0016-7061
- Wulff-Zottele, C., H. Hesse, F. Holger; J. Fisahn, M. Bromke, H. Vera-Villalobos, Y. Li, F. Frenzel, P. Giavalisco, A. Ribera-Fonseca, L. Zunino, I. Caruso, E. Stohmann & M.L. Mora. 2014. Sulphate fertilization ameliorates long-term aluminum toxicity symptoms in perennial ryegrass (*Lolium perenne*). *Plant Physiology and Biochemistry* 83: 88-99. Impact Factor: 2.352 DOI: 10.1016/j.plaphy.2014.07.017 Quartile: 2 Editorial: Elsevier France-Editions Scientifiques Medicales Elsevier, France ISSN: 0981-9428
- Jorquera, M., N. Inostroza, L. Lagos, P. Barra, L. Marileo, J. Rilling, D. Campos, D. Crowley, A. Richardson & M.L. Mora. 2014. Bacterial community structure and detection of putative plant growth-promoting rhizobacteria associated with plants grown in Chilean agro-ecosystems and undisturbed ecosystems. *Biology and Fertility of Soils* 50(7): 1141-1153. Impact Factor: 3.396 DOI: 10.1007/s00374-014-0935-6 Quartile: 1 Editorial: Springer, USA ISSN: 0178-2762
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Current projects

2018 – 2022. Role of organic phosphorus and C:N:P stoichiometry in smart sustainable agriculture in volcanic soils. FONDECYT Regular N° 1181050.

2017-2018 Proyecto de redes internacionales etapa inicial, convocatoria 2017. N° REDI170334

2016-2026 Associate Researcher. CORFO 16PTECF5-66647. Centro para la Investigación e Innovación en Fruticultura para la Zona Sur

Finished projects

2014-2018. Improving phosphorus efficiency use and aluminum detoxification on pastures growing in acid volcanic soils throughout biotechnological tools. Co-researcher, FONDECYT Regular Competition N° 1141247.

2014-2017. Understanding the origin and stabilization of organic phosphorus in agricultural soils to improve its bioavailability by biotechnological tools. Co-researcher, PROGRAM ECOS-CONICYT C13U02.

2010-2014. Crop rhizosphere management in acid Andisols of Southern Chile for improving plant nutrition and food quality. Responsible Researcher, FONDECYT Regular Competition N° 1100625.

2014. Unidad de Procesamiento de Muestras para Identificación y Caracterización Morfofisiológica mediante Microscopía Electrónica. Responsible Researcher, FONDEQUIP EQM140169.

2009. La fertilización nitrogenada en praderas y los mecanismos de la rizosfera asociados que regulan

- la nutrición y salud de especies forrajeras en Andisoles del sur de Chile. Responsible Researcher, FONDECYT Regular Competition N° 7090100 (International Cooperation).
- 2008-2010. Factores ambientales del sur de Chile que regulan el crecimiento y calidad de (*Vaccinium corymbosum* L.): efecto de la acidez del suelo y la radiación UV-B sobre la capacidad fotosintética y antioxidante de arándano alto. Co-researcher, FONDECYT Regular Competition N° 1080372.
- 2006-2010. La fertilización nitrogenada en praderas y los mecanismos de la rizósfera asociados que regulan la nutrición y salud de especies forrajeras en Andisoles del sur de Chile. Responsible Researcher, FONDECYT Regular Competition N° 7080221.
- 2007-2008. Optimización del manejo de herbicidas en la producción de maíz forrajero con aplicación de purines de bovino a través del estudio procesos físico-químicos y biológicos en el sistema suelo-purin-herbicida. Co-researcher, FONDECYT Regular Competition N° 1070568.
- 2006-2008. Desarrollo de un adsorbente a partir de residuos industriales de interés nacional y su uso en la retención de metales pesados presentes en efluentes líquidos. Co-researcher, FONDECYT Regular Competition N° 1060309.
- 2006-2008. Reinforcement of biosciences in the doctorate in natural resources sciences (BIOREN). Bicentenario-CONICYT.
- 2002-2006. Effect of the interaction phosphate-soil acidity on the dynamics of microelements interesting for agriculture and livestock production in the south of Chile. Responsible Researcher, FONDECYT Regular Competition N° 1020934.
- 2004-2007. Application of cellulose sludge in volcanic soils and its effect on soil properties and vegetal production. Co-researcher, FONDECYT Regular Competition N° 1040854.
- 2005-2009. Study of the efficiency and mechanisms (abiotic and biotics) involved in the elimination of chlorophenol compounds with column treatments in an allophanic soil. Co-researcher, FONDECYT Regular Competition N° 1050614.
- 1998-2001. Color and phenolic compounds removal from cellulose kraft plants sludge using a combination of biological/physic-chemical methods. Co-researcher, FONDECYT Regular Competition N° 1980-378.
- 1999-2001. Study of the sulfur-phosphorus association in volcanic soils and its effect on vegetal production. Responsible Researcher, FONDECYT Regular Competition N° 1990-873.
- 1998-2001. Improvement of the production of grassland species and turf grass seeds for export. Responsible Researcher, FONDEF D97I2005.
- 2003-2004. Empowerment of the research line on detoxification of residual waters coming from the cellulose industry. Co-researcher, (Chile-Italia), CONICYT-CNR 14662002.
- 2006-2007. Behavior of enzymes immobilized in Chilean Andisols and in soils from Galicia applied to bioremediation of organochloride compounds. Co-researcher (Chile-España), CONICYT-CSIC.
- 2007-2010. Improvement of beef production: a mathematic model to describe the dynamic behavior of a permanent pasture and generation of software for decision making. Co-Investigator, FONDEF Grant D06I1081.
- 1995-1998. Evaluation of the soil-plant-animal relationships on acidic soils. Responsible Researcher, FONDECYT Regular Competition N° 1950-773.
- 1997-1998. Fructose and oligosacarids production from topinambur crop (*Helianthus tuberosa*) in the and 10th regions. Second Responsible Researcher, FONDEF D96I1014.
- 1994-1997. Nutritional factors affecting productivity in soils of southern Chile because of soil acidification. Second Responsible Researcher, FONDEF 2-88.

PRESENTATION AT NATIONAL/INTERNATIONAL CONGRESSES

- Calabi-Floody, M., Medina, J., Suazo, J., Ordiqueo, M., Mora, M.L. (2017). "Conditioning of wheat straw to be used as microbial carrier for smart fertilizer development" Plant Biology June 24-28, 2017, Honolulu, Hawaii.
- Calabi-Floody, M., Medina, J., Suazo, J., Ordiqueo, M., Mora, M.L. 2017. Modification of wheat straw to be used as carrier smart fertilizer development. III Conferencia Iberoamericana de

- Interacciones Beneficiosas Planta-Microorganismo-Ambiente (IBEMPA). 6-10 de Noviembre, Lima, Perú.
- Calabi-Floody, M., Medina, J., Suazo, J., Mercado, D., Mora, M.L. 2017. Optimizing wheat straw modification as carrier for microbial assemblages. 6th International workshop in advances in science and technology of bioresources, 29 de Noviembre al 1de December. Pucón, Chile.
- María de la Luz Mora, Cecilia Paredes, Cornelia Rumpel, Leo Condrón and Rolando Demanet 2016. Priming phosphorus effect in volcanic soils. Oral Presentation. Organic Phosphorus Workshop 2016, Organic Phosphorus in the Environment: Solutions for Phosphorus Security. 5 - 9 September 2016, Windermere, Lake District, United Kingdom
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- Patricia Poblete-Grant, Leo Condrón, Rolando Demanet and María de la Luz Mora. 2016. Organic phosphorus fate in grassland Andisols with a poultry manure application history. Poster. Organic Phosphorus Workshop 2016, Organic Phosphorus in the Environment: Solutions for Phosphorus Security. 5 - 9 September 2016, Windermere, Lake District, United Kingdom
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