Curriculum Vitae Raúl Silvio LAVADO

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ESTUDIOS UNIVERSITARIOS

- **Grado:** Ingeniero Agrónomo. Facultad de Agronomía y Veterinaria, UBA. Diciembre 1968.
- **Postgrado:** Diplomado en Edafología y Biología Vegetal. Universidad de Granada. España. 1971.

PRINCIPALES EXPERIENCIAS DE ENTRENAMIENTO/PERIODOS POSDOCTORALES

- 1979. Solonetzic Soil Research Substation. Vegreville, Alberta, Canada.
- 1980. U.S. Salinity Laboratory. Riverside, California, U.S.A.

CARGOS

1968-1974: Estación Experimental de Riego y Cultivos del IDEVI, Viedma, Río Negro. Técnico en fertilidad de suelos.
1975-1978: Facultad de Agronomía de la Universidad Nacional de La Pampa, Santa Rosa (La Pampa).
1978-1982: Instituto de Geomorfología y Suelos de la Facultad de Ciencias Naturales y Museo. Universidad Nacional de La Plata, La Plata.
1983-1998: PROSAG (Programa CONICET/Facultad de Agronomía (UBA), actualmente IFEVA. Miembro asociado del IFEVA (1999-2005).
1995-2010: Profesor Titular, Cátedra de Fertilidad y Fertilizantes. Facultad de Agronomía,
2010- presente: Profesor Consulto, UBA.
Desde 1975: Investigador CONICET, desde 2010 investigador Superior (actualmente ad honorem).

PUESTOS EXECUTIVOS

- Ex Director Instituto de investigaciones en Biociencias Agrícolas y Ambientales: INBA
- Ex Presidente de la Red Argentina de la Salinidad (2015-2019).

ACTIVIDADES EN ORGANISMOS

- Miembro de varios comités y Miembro de la Junta de calificaciones del CONICET (1986-2017).
- Miembro Consejo Directivo de la Facultad de Agronomía de la UBA.
- Miembro del Directorio del IFEVA (1994-95),
- Miembro del Comité de acreditación de Facultades de Agricultura, Forestación y recursos naturales (MERCOSUR – Brasil, Uruguay, Paraguay and Argentina, más Bolivia and Chile).
- Miembro de otros Comités Consultivos.

ACTIVIDAD EN REVISTAS CIENTÍFICAS

- Associated Editor J. of Soil and Water Conservation Society, EE.UU. (2007-2015).
- Associated Editor revista Phyton, (2011-) (Argentina/ EE.UU
- Editor Asociado revista Agronomía y Ambiente (2012-).
- Miembro del Editorial Board of varias Conferencias y Congresos
- Reviewer de múltiples revistas
- Creador de Ciencia del Suelo y primer Editor (1982-1989).

PUBLICACIONES
En revistas incluidas en el Science Citation Index (ordenadaspor temas)

Presencia y efectos de elementos tóxicos (metales pesados y otros) en suelos, cultivos y microorganismos. Fitorremediación.

1. Spagnoletti F.N, M. Carmona, K. Balestrasse, V. Chiocchio, R. Giacometti, R.S. Lavado. 2021. Arbuscular mycorrhiza *Rhizophagus intraradices* can reduce root rot caused by *Fusarium pseudograminearum* in wheat. Rhizosphere. 19: doi.org/10.1016/j.rhisph.2021.100369
2. Ureta Suelgaray F.J., D.M. Aguilar Beltramo, R.S. Lavado, V.M. Chiocchio. 2021. Dark Septate Endophytes (DSE) fungi: potential promoters of bioremediation of oil derivatives. International J. of Phytoremediation 24: 255-262. DOI: 10.1080/15226514.2021.1932733
3. Ureta Suelgaray F.J., D.M. Aguilar Beltramo, R.S. Lavado, V.M. Chiocchio. 2020. Dark Septate Endophytes (DSE) fungi: potential promoters of bioremediation of oil derivatives. Submitted to International microbiology.
4. Ferreyroa, G. V., J. Gelma, M. D. Sosa, M.A. Orellana Benítez, M. B. Tudino, R.S. Lavado and F. V. Molina. 2018. *Brassica napus* growth in lead polluted soil: bioaccumulation in plant organs at different ontogenetic stages and speciation in soil. Water, Air, and Soil Pollution. 229: 213-224.
5. Bustingorri, C., G. Noriega, R. S. Lavado and K. Balestrasse. 2017. Protective effect exerted by soil phosphorus on soybean subjected to arsenic and fluoride. Redox Report, 22: 352-360
6. Ferreyroa, G.V., M.G. Lagorio, M.A. Trinelli, R.S. Lavado, F.V. Molina. 2017. Lead effects on *Brassica napu*s photosynthetic organs. Ecotoxicology and Environmental Safety.140: 123–130
7. Spagnoletti, F., Carmona, M., Tobar Gómez, N.E., Chiocchio, V, Lavado, R.S. 2017. Arbuscular mycorrhiza reduces the negative effects of *M. phaseolina* on soybean plants in arsenic-contaminated soils. Journal: Applied Soil Ecology 121: 41-47.
8. Spagnoletti, F.N., K. Balestrasse, R.S. Lavado and R. Giacometti. 2016. Arbuscular mycorrhiza detoxifying response against arsenic and pathogenic fungus in soybean. Ecotoxicology and Environmental Safety. 133: 47-56
9. Bustingorri, C. and R.S. Lavado. 2015. Soybean as affected by high concentrations of arsenic and fluoride in irrigation water in controlled conditions. Agricultural Water Management. 144: 134-139
10. Ferreyroa, G.V., A. C. Montenegro, M.B. Tudino, R.S. Lavado and F.V. Molina. 2015, Time evolution of Pb (II) speciation in Pampa soil fractions. Chemical Speciation and Bioavailability. 26 (4): 210-218

11. Spagnoletti, F., Lavado, R.S. 2015.The arbuscular mycorrhiza *Rhizophagus intraradices* reduces the negative effects of arsenic on soybean plants. Agronomy 5: 188-199.
12. Montenegro, A. C, G.V. Ferreyroa, M.E. Parolo, M.B. Tudino, R.S. Lavado and F.V. Molina. 2015. Copper speciation in soil: time evolution and effect of clay amendment. Water, Air, & Soil Pollution 226: 293-303
13. Spagnoletti, F.; Tobar, N.; Chiocchio, V.; Lavado, R.S. 2015. Mycorrhizal inoculation and high arsenic concentrations in the soil increase the survival of soybean plants subjected to strong water stress. Communication in Soil Science and Plant Analysis. 46: 2837-2846
14. Bustingorri, C. K. Balestrasse and R.S. Lavado. 2015. Effects of high arsenic and fluoride soil concentrations on soybean plants. Phyton, 84: 407-415.
15. Orroño, D.I., V. Schindler, R.S. Lavado. 2012. Heavy metal availability in *Pelargonium hortorum* rhizosphere: interactions, uptake and plant accumulation. Journal of Plant Nutrition 35: 1374-1386.
16. Zubillaga, M.S., E. Bressan, and R. S. Lavado. 2012. Effects of phytoremediation and application of organic amendment on the mobility of heavy metals in a polluted soil profile. International Journal of Phytoremediation 14 (3), 212-220.
17. Orroño D.I. and R. S. Lavado.2011. Heavy metal accumulation in geranium (*Pelargonium hortorum*) and effects on growth and quality of plants. Agrochimica LV (2): 116-128
18. Orroño D.I. y R. S. Lavado. 2009. Heavy metal accumulation in *Pelargonium hortorum*: effects on growth and development. Phyton 78: 4-11
19. Orroño, D.; H. Benítez and R.S. Lavado. 2009. Effects of heavy metals in soils on biomass production and plant element accumulation of *Pelargonium* and *Chrysanthemum* species. Agrochímica 53: 168-176.
20. Orroño, D.I. and R. S. Lavado. 2009. Distribution of extractable Heavy Metals in different Soil Fractions. Chemical Speciation and Bioavailability. 21: 193-198.
21. Torri, S. I. and Lavado, R.S. 2008. Dynamics of Cd, Cu and Pb added to soil through different kinds of sewage sludge. Journal of Waste Management 28: 831-842.
22. Zubillaga M. S. and R. S. Lavado. 2008. Accumulation and movement of four potentially toxic elements in soils throughout five years, during and after biosolid application. American J.of Environmental Sciences 4(6): 576-582.
23. Zubillaga, M.S., E. Bressan and R.S. Lavado. 2008. Heavy metal mobility in polluted soils: effect of different treatments. American Journal of Environmental Sciences 4(6): 620-624.
24. Lavado R.S., M. Rodríguez, R. Alvarez, M.A. Taboada and M.S. Zubillaga. 2007. Transfer of potentially toxic elements from biosolid-treated soils to maize and wheat crops. Agriculture, Ecosystems & Environment 118: 312-318.
25. Lavado, R.S. 2006. Concentration of Potentially Toxic Elements in field crops grown near or far from cities of the Pampas (Argentina) Journal of Environmental Management. 80: 116-119.
26. Lavado, R.S., M. B. Rodríguez and M. A. Taboada. 2005. Treatment with biosolids affects soil availability and plant uptake of potentially toxic elements. Agriculture, Ecosystems & Environment 109: 360-364

27. Lavado, R.S., M.S. Zubillaga, R. Alvarez and M.A. Taboada.2004. Baseline levels of potentially toxic elements in pampas soils. Soil & Sediment Contamination : an International Journal, 13 (5): 329-339.
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31. Lavado, R.S., M.B. Rodríguez, J.D. Scheiner, M.A. Taboada, G. Rubio, R. Alvarez, M. Alconada and M.S. Zubillaga. 1998. Heavy metals in soils of Argentina: Comparison between urban and agricultural soils. Communications in Soil Science and Plant Analysis 29: 1913-1917.
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Ciclo de la materia orgánica del suelo. Usos de biosólidos y otros residuos orgánicos. Compostaje.

1. Rimski-Korsakov, H., C.A. Alvarez and R.S. Lavado. 2015. Cover crops in the agricultural systems of the Argentine Pampas. Journal of Soil and Water Conservation, 70 (6): 112A-118A
2. Pagani, A., Molinari, J., Lavado, R.S.; Di Benedetto, A. 2015. Behavior of *Impatiens wallerana Hook. F* in alternative pot substrates: mechanisms involved and research perspectives. Journal of Plant Nutrition, 38: 2185-2203.
3. Giubergia, J.P., E. Martellotto. R.S. Lavado. 2013. Complementary irrigation and direct drilling have little effect on soil organic carbon content in semiarid Argentina, Soil and Tillage Research 134: 147-152.
4. Thibaud J., T. Mc. Loughlin, A. Pagani, R.S. Lavado and A, Di Benedetto. 2012. Alternative substrates and fertilization routine relationships for bedding pot plants: *Impatiens wallerana*. European Journal of Horticultural Science 77: 182-191
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7. Marchese, N., Di Benedetto, A., Lavado, R.S. 2006.The possibilities of river waste and Argentinean peat as a plug growing media for Verbena x hybrida. International Journal of Agricultural Research 1(2) 142-150.
8. Lavado, R.S. 2006. Effects of sewage sludge application on soils and sunflower yield: quality and toxic element accumulation. Journal of Plant Nutrition 29: 975-984.
9. Zubillaga M.S.and R S Lavado. 2006. Phytotoxicity of biosolid compost of different maturity degree compared with biosolids and animal manures. Compost Sci. and Utilization. 14 (4): 267-270.
10. Rodríguez, M.B. and R.S. Lavado. 2004. Uptake and distribution of trace elements by soybean from a physically degraded soil treated with biosolids. Agrochimica. 48: (1-2): 1-10.
11. Zubillaga M.S. and R. S. Lavado. 2003. Stability Indexes of Sewage Sludge Compost Obtained with Different Proportion of a Bulking Agent. Comm. Soil Sci. And Plant Analysis 34: 581-591.
12. Torri, S., R. Alvarez, R. Lavado. 2003. Mineralization of carbon from Sewage Sludge in three soils of the Argentine Pampas. Comm. Soil Sci. and Plant Analysis. 34: 2035-2043.
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14. Álvarez, R., M. Alconada, R.S. Lavado. 1999. Sewage sludge effects on carbon dioxide-carbon production from a desurfaced soil. Communications in Soil Science and Plant Analysis 30: 1861-1866.
15. Álvarez, R. and R.S. Lavado. 1998. Climate, organic matter and clay content relationships in the Pampa and Chaco soils. Geoderma 83: 127-141.
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1. Pescie, M.A., M. Fradkin, R.S. Lavado and V.M. Chiocchio. Endophytic fungi in blueberry varieties, in three production areas of Argentina. Physiological and Molecular Plant Pathology 115 101662 doi.org/10.1016/j.pmpp.2021.101662
2. Pescie, M.A., M.P. Borda, D.P. Ortiz, M.R. Landriscini, R.S. Lavado. 2018. Absorption, distribution and accumulation of nitrogen applied at different phenological stages in southern highbush blueberry (*Vaccinium corymbosum* interspecific hybrid). Scientia Horticulturae 230: 11-17
3. Rimski-Korsakov, H, M.S. Zubillaga, M.R. Landriscini and R.S. Lavado. 2016. Maize and cover crop sequence in the Pampas: effect of fertilization and water stress on the fate of nitrogen. J. of Soil and Water Conservation, 71:12-20
4. San Martino, L., San Martino, S., Lavado, R.S. 2014. Soil Nitrate Profiles and the Risk of Nitrate Leaching in Sweet Cherry Orchards Subjected to Different Management Schemes. International Journal of Fruit Science. 14 (4): 424-436

5. Rimski-Korsakov H, Rubio G, Lavado RS. 2012. Fate of the nitrogen from fertilizers in field-grown maize. Nutrient Cycling in Agroecosystems 93: 253-263.
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7. Rubio, G, Gutiérrez Boem F.H. and Lavado, R.S. 2010. Responses of C3 and C4 grasses to application of nitrogen and phosphorus fertilizer at two dates in the spring. Grass and Forage Science 65: 102-109
8. Rimski-Korsakov, H., G. Rubio and R.S. Lavado. 2009. Effect of the water stress in the maize crop production and nitrogen fate. Journal of Plant Nutrition 32: 565- 578.
9. Delgado J.A., M. Shaffer, C. Hu, R. Lavado, J. Cueto-Wong, P. Joosse, D. Sotomayor, W. Colon, R. Follett, S. DelGrosso, S, X. Li and H. Rimski-Korsakov. 2008. An index approach to assess nitrogen losses to the environment. Ecological Engineering 32: 108-120.
10. Civeira, G. and R.S. Lavado. 2008. Nitrate losses, nutrients and heavy metal accumulation from substrates assembled for urban soils reconstruction. Journal of Environmental Management 88: 1619-1623
11. Rodriguez, M.B., A. Godeas and R.S. Lavado. 2008. Soil acidity changes in bulk soil and maize rhizosphere in response to nitrogen fertilization. Communication in Soil Science and Plant Analysis 39: 2597-2607
12. Chavez, W., A. Di Benedetto, G. Civeira and R.S. Lavado. 2008. Alternative soilless media for growing *Petunia x hybrida* and *Impatiens wallerana*: physical behavior, effect of fertilization and nitrate losses. Bioresource Technology 99: 8082-8087
13. Alvarez, C, H. Rimski-Korsakov, P. Prystupa and R. S. Lavado. 2007. Nitrogen dynamics and losses in direct drilled maize systems. Communication in Soil Science and Plant Analysis 38: 1-15.
14. Delgado, JA; Shaffer, M; Hu, CGS; Lavado, RS; Wong, JC; Joosse, P; Li, XX; Rimski-Korsakov, H; Follett, R; Colon, W; Sotomayor, D. 2006. A decade of change in nutrient management: A new nitrogen index. Journal of Soil and Water Conservation, 61 (2): 62-75.
15. Zubillaga, M.S., H. Rimski-Korsakov, G. Travería and R.S. Lavado. 2005. Ammonia volatilization from different organic amendments during storage and after land application. Agrochimica 49 (5-6) 169-174.
16. Gutiérrez-Boem, F.H., J.D. Scheiner, H. Rimski-Korsakov and R.S. Lavado. 2004. Late season nitrogen fertilization of soybeans: effects on leaf senescence, yield and environment. Nutrient Cycling in Agroecosystems 68:109-115.
17. Rimski-Korsakov, H., G. Rubio and R. S. Lavado. 2004. Potential losses of nitrate by leaching in soils of the Pampas Argentina. Agricultural Water management 65: 83-94.
18. Rodríguez, M.B.; L. Maggi; M. Etchepareborda, M.A. Taboada y R.S. Lavado. 2003. Nitrogen availability for maize from a Rolling Pampa soil after addition of biosolids. Journal of Plant Nutrition 26: 431-441.
19. Scheiner, J.D., F.H. Gutierrez Boem & R.S. Lavado. 2002. Sunflower nitrogen requirement and 15N fertilizer recovery in Western Pampas, Argentina. European Journal of Agronomy 17 (1): 73-79.

20. Zubillaga, M.S., M.M. Zubillaga, S. Urricariet, R.S. Lavado. 2002. Effect of nitrogen sources on ammonia volatilization, grain yield and soil nitrogen losses in no-till wheat in an Argentine soil. Agrochimica, 46 (3-4): 100-107
21. Chaneton, E.J., J.H. Lemcoff and R.S. Lavado. 1996. Nitrogen and phosphorus cycling in grazed and ungrazed plots of a temperate subhumid grassland in Argentina. Journal of Applied Ecology 33: 291-302.
22. Rubio, G. and R.S. Lavado. 1994. Non-exchangeable ammonium behavior of a grassland soil of the Flooding Pampa under water logging Communications in Soil Science and Plant Analysis 25(13-14): 2455-2465.
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Uso de fertilizantes. Nutrientes en la sostenibilidad de la agricultura y la ganadería.

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2. Pescie, M.A., M. Montecchia, R.S. Lavado and V.M. Chiocchio. 2023. Inoculation with *Oidiodendron maius* BP Improves Nitrogen Absorption from Fertilizer and Growth of *Vaccinium corymbosum* during the Early Nursery Stage. Plants 12(4):792. DOI: 10.3390/plants12040792
3. Barresi, O. Lavado, R.S., Chiocchio, V.M. 2022. Can dark septate endophytic fungi (DSE) solubilize selectively inorganic soil phosphorus thereby promoting sorghum growth? RAM. doi.org/10.1016/j.ram.2022.02.003
1. Spagnoletti, F. N, Cornero, M., Chiocchio, V., Lavado, R. S. and Roberts. I. N. 2019. Arbuscular mycorrhiza protects soybean plants against *Macrophomina phaseolina* even under nitrogen fertilization. European Journal of Plant Pathology. doi.org/10.1007/s10658-020-01934-w
2. Spagnoletti, F.N., M. Leiva, V. M. Chiocchio and R.S. Lavado, 2018. Phosphorous fertilization reduces the severity of charcoal rot (*Macrophomina phaseolina*) and the arbuscular mycorrhizal protection in soybean. Journal of Plant Nutrition and Soil Science.
3. Barresi, O., Chiocchio, V.M., Lavado, R.S. 2018. Changes in soil phosphorus fractions caused by cropping without nutrient reposition. A case study. Phyton 87 (2): 14-17
4. Spagnoletti, F.N., Tobar, N.E., Fernández Di Pardo, A., Chiocchio, V.M., Lavado, R.S. 2017. Dark septate endophytes present different potential to solubilize calcium, iron and aluminum phosphates. Applied Soil Ecology.111: 26-32
5. Miretti, M.C.; Imhoff, S.; Pires da Silva, A.; Lavado, R.S. 2010. Soil structure degradation in patches of alfalfa fields in Santa Fe – Argentina. Scientia Agricola, 67: 604-610.
6. Lavado, R.S., M. A. Taboada. 2009. The Argentinean Pampas: A key region with a negative nutrient balance and soil degradation needs better nutrient management and conservation programs to sustain its future viability as a world agroresource. J. of Soil and Water Conservation 64(5):150A-153A.
7. Urricariet, S.; R.S. Lavado andy L. Martín. 2004. Corn Response to Fertilization and SR, DRIS and PASS Interpretation of Leaf and Grain Analysis. Communication in Soil Science and Plant Analysis 35 (3-4) 413-425.

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9. Rubio, G. and Lavado, R.S. 1999. Acquisition and allocation of resources in two water logging-tolerant grasses. New Phytologist. 143: 539-546.
10. Maddonni, G.A., S. Urricariet, C.M. Ghersa and R.S. Lavado. 1999. Assessing soil quality with soil properties and maize crop in the Rolling Pampa. Agronomy Journal 91: 280-287.
11. Lavado, R.S, C.A. Porcelli and R. Álvarez. 1999. Concentration and distribution of extractable elements in a soil as affected by tillage and fertilization. The Science of the Total Environment 232: 185-191.
12. Scheiner, J.D. and R.S. Lavado. 1999. Soil water content, absorption of nutrient elements, and responses to fertilization of sunflower: a case study. Journal of Plant Nutrition 22(2): 369-377.
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Libros: 11
Capítulos: 37

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PARTICIPATION IN INTERNATIONAL PROJECTS
Proyecto Raising the bio-based industrial feedstock capacity of Marginal Lands. Collaborative Project nro. 101082089. UE. 2023.

Proyecto con la Universidad de Iquique, Chile.
Miembro del the international network for the development of the NLEAP model, with headquarter in the University of Colorado and USDA.
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- Premio a la investigación Científica y Tecnológica de la U.B.A., durante los años que tuvo lugar (1992- 1995).
- Integrante del grupo seleccionado por unanimidad como ganador del Premio Vilfrid Baron 1993-95, Academia Nacional de Agronomía y Veterinaria.
- Designado Socio Honorario de la Asociación Argentina de la Ciencia del Suelo (2014).
- Nominado para el XVII premio a la Excelencia Agropecuaria (2019)
- Ganador del Premio "Andrés Aguilar Santelises", Sociedad Latinoamericana de la Ciencia del Suelo (2019).
- Programa de Incentivo a los Docentes Investigadores, de la Secretaría de Políticas Universitarias del Ministerio de Cultura y Educación.
- Categorizado en clase A, 1994-1995, en clase I, de 1998 a 2010.

ACTIVIDADES ACADEMICAS

Cursos de grado y posgrado: Numerosos cursos y clases de graduados entre 1973 to 2012 y cursos y clases de posgrados desde 1986 al presente.

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