



CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	ANTONIO		
Family name	DELGADO GARCÍA		
Gender (*)		Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail			URL Web
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-1854-9224		

A.1. Current position

Position	Full professor (catedrático de universidad)		
Initial date	13 February 2009		
Institution			
Department/Center			
Country	Spain	Teleph. number	
Key words	Soil fertility, fertilization, crop management, phosphorus, iron, zinc		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
1992-1996	Doctoral contract/University of Cordoba/Spain
1996-2002	Lecturer (Profesor asociado)/University of Sevilla/Spain
2002-2009	Associate professor (Profesor titular)/U. Sevilla/Spain
2009-	Professor (Catedrático de Universidad)/U. Sevilla/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Agricultural Engineer (graduate)	University of Cordoba/Spain	1991
Agricultural Engineer PhD	University of Cordoba/Spain	1996

Part B. CV SUMMARY (Max. 5000 characters, including spaces)

The scientific activity of Antonio Delgado focus on soil fertility management, particularly phosphorus, iron, and zinc, and the interaction of organic matter and microorganisms with plant nutrients. He has also expertise on the environmental impact of fertilization, soil amendments, irrigation, and soil salinity. In the future, the aim is to continue with research lines that contribute to more sustainable food systems based on the efficient use of resources.

Author of 112 articles in JCR journals (68 Q1 JCR), 67 articles in the last 10 years (27 % in the top 10% cited, 53 % in the top 25 % cited; 40 % in the top 10 % and 80 % in the top 25 % of journal by CiteScore; 30 % with international collaborations). Author of 4 articles in other journals, 17 book chapters, 5 invited keynotes in conferences, and >110 communications to congresses. His *h-index* is 36, with more than 3400 cites (> 300 per year, Scopus).

Ha has contributed to the knowledge of phosphorus (P) biogeochemistry in soil, as necessary basis for sustainable P fertilization, e.g. with an article identifying for the first time the reaction products of P fertilizers in calcareous soils (> 180 cites). He has contributed to the definition of accurate soil nutrient test for sustainable fertilization (for N, P, Fe, and Zn, with 9 articles, with more than 450 cites), and to the definition of P fertilization strategies based on recycled resources (11 articles since 2023 with 100 cites). He has published the first article using Vis-NIR spectroscopy for estimating the real P availability to plants revealing the potential of this technique for fast accurate assessment of crop fertilizer needs and potential use in precision agriculture (53 cites in 6 years). He has been a pioneer in the use microbial inoculants for alleviating deficiencies of critical nutrients in Mediterranean areas (P, Fe, Zn). As result of this experience, he has contributed to the performance of practical models for estimating nutrient requirement of crops, now included in the application "Fertilicalc", which will be the basis for the development of the official Spanish application for estimating fertilizer



needs by crops. His work also derived in relevant contracts with companies and 5 patents of invent. Awarded with the “Young Researchers Prize” of the Spanish Society for Horticultural Sciences in 1991.

This experience also led to participate in relevant scientific forums: president of the European Society for Agronomy (ESA) Network (2018-2020), member of his steering committee (2017-2022), participant in 2 COST actions (832 and 869, in the latter as a member of the management committee), and member of the scientific committee of international conferences (XV –2018– and XVIII –2024– congress of the ESA, the Wageningen Soil conference in 2018; Iberian Congress of Agroengineering 2025; EUROSIL2025). President of the organizing committee of the 6th International Phosphorus Workshop (IPW6, 2010) and the XVI ESA congress (2020).

His scientific expertise was recognized with relevant editorial positions: associate editor-in-chief of the European Journal of Agronomy (2014-2021), member of the editorial board of this journal (2013), Associate Editor of Journal of Environmental Quality (2009-2014), and Spanish Journal of Agricultural Research (2014), and guest editor for special issue of Soil Use and Management.

Principal investigator in 15 projects of competitive calls (4 EU-H2020 and HE, 1 EU-PRIMA, 10 National/State Plan, 1 Andalusian Government - total funds 2.85 million €), 11 research contracts with companies (0.25 million €), and in 5 scientific infrastructure projects (0.68 million €). Investigator in 12 other projects or contracts and 1 European EU (FP3). Reviewer for international and national agencies and calls.

Supervisor of 9 PhD thesis, 2 with national award (2nd and 1st Fertiberia Award in 2017 and 2018 respectively). Deputy Coordinator of the Doctoral Program in Agrarian, Forestry, and Food Engineering and Sustainable Rural Development of the Universities of Córdoba and Seville (2015-). Member of the teaching board of the PhD course in Mediterranean Agricultural, Food and Forest Systems of the University of Palermo (2018-). Collaborator of the doctoral program Advance and Sustainable Agricultural and Forestry Systems of the Universities of Florence, Pisa and Siena (2023-). Invited Professor for doctoral courses at the Universities of Turin, Palermo, and Florence. Mentor in the project FLORECE! of the University of Clemson (USA) funded by the US Department of Agriculture. External PhD examiner/reviewer in the universities of Limerick (Ireland), Reggio Calabria, Palermo, Catania, Molise, Campania (Italy), and BOKU (Austria).

As services for the University of Sevilla, he was Head of the Office of Transfer of Research Results (2005-2008), of the Doctoral School (2008-2015), and of the Agricultural Research Service (2008-)

https://investigacion.us.es/sisius/sis_showpub.php?idpers=3488

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications

Most relevant publications in the last 10 years (selection of 10 publications)

- Recena R., Torrent J., del Campillo M.C. y Delgado A. 2016. Calculation of threshold Olsen P values for fertilizer response from soil properties. *Agronomy for Sustainable Development* 36:54. DOI: 10.1007/s13593-016-0387-5 D1
- Recena, R., Fenández-Cabanás V.M., Delgado A. 2019. Soil fertility assessment by Vis-NIR spectroscopy: Predicting soil functioning rather than availability indices. *Geoderma* 337: 368-74. doi.org/10.1016/j.geoderma.2018.09.049. D1
- Barrón V., Méndez J.M., Cruz-Yusta M., Sánchez L., Giménez C., Sacristán D., González-Guzmán A., Sánchez-Rodríguez A.R., Skiba, U.M., Inda A.V., Marqués J., Recio J.M., Delgado A., del Campillo M.C., Torrent J. 2020. Photochemical emission and fixation of NO_x gases in sils. *Science of the Total Environment* 702:134982. doi.org/10.1016/j.scitotenv.2019.134982 D1
- Moreno-Lora A., Delgado A. 2020. Factors determining Zn availability and uptake by plants in soils developed under Mediterranean climate. *Geoderma* 376: 114509. doi.org/10.1016/j.geoderma.2020.114509 D1



- García-López A., Recena R., Delgado A. 2021. The adsorbent capacity of growing media does not constrain myo-inositol hexakiphosphate hydrolysis but its use as a phosphorus source by plants. *Plant and Soil* 459: 277-288. doi.org/10.1007/s11104-020-04764-1 Q1
- Recena R., García-López A., Delgado A. 2022. Effect of Zn binding to phytate and humic substances on its uptake by wheat (*Triticum durum* L.) as affected by carbonates and Fe oxides. *Pedosphere* 32(6): 823-832. doi.org/10.1016/j.pedsph.2022.06.022. Q1
- Recena R., García-López A.M., Quintero J.M., Sdyttä A., Ylivainio K., Santner J., Buenemann E., Delgado A. 2022. Assessing the phosphorus demand in European agricultural soils based on the Olsen method. *Journal of Cleaner Production* 379: 134749. doi.org/10.1016/j.jclepro.2022.134749. D1
- Hernández-Mora A. ... Delgado A. ... Santner. 2024. Fertilization efficiency of thirty marketed and experimental recycled phosphorus fertilizers. *Journal of Cleaner Production* 467: 142957. doi.org/10.1016/j.jclepro.2024.142957 D1
- Frick H. Delgado A. ... Ylivainio K. 2025. Bio-based fertilisers can replace conventional inorganic P fertilisers under European pedoclimatic conditions. *Field Crop Research* 325: 109803. doi.org/10.1016/j.fcr.2025.109803 D1
- Fabrizi C., Delgado A., Guerrini L., Napoli M. 2025. Precision nitrogen fertilization strategies for durum wheat: a sustainability evaluation of NNI and NDVI map-based approaches. *European Journal of Agronomy* 164: 127502. doi.org/10.1016/j.eja.2024.127502 D1

C.2. Congress

(10 Most relevant in the last 10 years)

- Nieves N., García-López A., Perea F., Quintero J.M., Becerra-Vela I.M. Pérez M., Delgado A. Evaluation of organic fertilisers as an alternative to phosphate mineral fertilization in a wheat-sunflower rotation. VII Eurosoil. Sevilla 2025.
- Delgado A. Crucial aspects for sustainable management of phosphorus in climate change resilient agrosystems in the Mediterranean context. Ponencia invitada. 5th European Sustainable Phosphorus Conference. Lleida 2024.
- Villalobos F., Delgado A., López-Berna, Á., Quemada M.: A Simple Decision Support System for Fertilizer Management: Fertilicalc. Comunicación oral. XVI European Society for Agronomy Congress. Seville. 2020
- Delgado A.: Critical nutrients in Mediterranean environments as affected by agricultural management in the long-term. Ponencia invitada. XLVIII Convegno Nazionale Società Italiana di Agronomia. Perugia, Italia, 2019.
- Delgado A. Una aproximación holística a los servicios ecosistémicos en agricultura: las funciones del suelo. Ponencia invitada. 58^a Reunión Científica de la Sociedad Española de Pastos (SEP). Sevilla, 2019.
- García-López A.M., Recena R., Delgado A.: Effect of different microorganisms and Fe oxides on P and Zn uptake by plants fertilized with phytate. Poster en Congreso. International phosphorous workshop 9. - Zurich, Suiza. 2019
- Recena R., García-López A.M., Delgado A.: Phosphorus forms in agricultural Mediterranean soils studied by solidstate NMR. Poster en Congreso. International phosphorous workshop 9. - Zurich, Suiza. 2019
- Moreno Lora A, Recena R, Carlos Sousa, Perea F., Delgado A.: Effect of two biocontrol agents on nitrogen uptake and yield of wheat. Comunicación oral. XV European Society for Agronomy Congress. Zurich, Suiza 2018.
- Delgado A., Recena R., García-López A.M., Torrent J., Del Campillo M.C.: Phosphorus and zinc uptake by sugar beet as affected by soil P status. Poster en Congreso. XIV European Society for Agronomy Congress. Edinburgh, UK. 2016
- Del Campillo M.C., Lopez-Erencia, P., Cañasveras J.C., Sánchez-Rodríguez, A.R., Barrón V. and Delgado A.: Intercropping with grasses decreases the incidence of iron chlorosis and increases micronutrient availability in olive orchards. Poster en Congreso. XIV Congress of the European Society for Agronomy. Edinburgh, UK. 2016

C.3. Research Projects

Most relevant obtained in the last ten years



- PID2023-149247OB-C21. Ciclo y fitodisponibilidad del fósforo en sistemas de cultivo diversificados. Ministerio de Ciencia e Innovación. Plan Estatal. Financiación: 250000 €. Duración 1/01/2025-31/12/2027
- SOILS4MED. SOIL health monitoring and information systems for sustainable soil management in the Mediterranean region. PRIMA. IP: Antonio Delgado García. Financiación 310000 € Duración: Abril 2023 Octubre 2026
- Project No 101084398. Agro-ecological strategies for resilient farming in West Africa. CIRAWA. IPs: José Manuel Quintero y Antonio Delgado. Comisión Europea Horizon Europe-CL6-2022-FARM2FORK-01. Financiación: 800000 €. Duración: Julio 2022-Junio 2026.
- PID2020-118503RB-C21. Fertilización fosfatada sostenible basada en recursos reciclados. IP: Antonio Delgado García. Ministerio de Ciencia e Innovación. Plan Estatal. Financiación: 185000 €. Duración 1/01/2021-31/12/2023
- Project No 813438. Diffuse phosphorus input to surface waters - new concepts in removal, recycling and management (P-TRAP). IP: Antonio Delgado; Comisión Europea H2020-MSCA-ITN. Financiación: 251000 €. Duración 1/03/2019-28/02/2023.
- Project No 818309 Optimizing Bio-based Fertilisers in Agriculture – Knowledgebase for New Policies (LEX4BIO). IP: Antonio Delgado; Comisión Europea H2020-RUR-2018-2020 (H2020-RUR-2018-2). Financiación: 450750 €. Duración: 1/07/2019-30/06/2023
- AGL-2017-87074-C2-1-R. Estrategias de Mejora de las Funciones del Suelo en el Ciclo y Disponibilidad del Fósforo; IP: Antonio Delgado García; Ministerio de Economía y Competitividad. Plan Estatal. Financiación: 108900 €. Duración: 1/01/2018 – 31/12/2020.
- Project No 635201. LAND Management: Assessment, Research, Knowledge base: LANDMARK; IP: Antonio Delgado García; Comisión Europea; H2020. Financiación 45554 €. Duración: 01/05/2015 – 31/12/2019

C.4. Contracts, technological or transfer merits

Most relevant in the last 10 years

- Tipo: contrato con empresas. Referencia Universidad de Sevilla: 4185/1110. Título: Prueba de inoculantes microbianos para la mejora de la nutrición de cultivos. Investigador principal: José Manuel Quintero Ariza. Entidad financiadora: TRADE CORPORATION INTERNATIONAL S.A.U. Financiación recibida: 23100 €. Duración 25/06/2021–30/06/2022.
- Tipo: Acción de transferencia. Referencia PYC20 RE 086 US. Título: Datos Multicapa e Inteligencia Artificial para la Delimitación de Zonas de Manejo Homogéneo en el Cultivo de Maíz (zonIA). Investigador Principal: Manuel Pérez Ruiz. Entidad financiadora: Junta de Andalucía. Financiación recibida: 79862,50 €. Duración: 27/12/2021–30/04/2023
- Tipo: contrato con empresas. Referencia Universidad de Sevilla: 3838/0090. Título: European Journal of Agronomy. Investigador principal: Antonio Delgado García. Entidad financiadora: Elsevier B.V. Financiación recibida: 19800 €. Duración: 01/01/2020-31/12/2022
- Tipo: contrato con empresas. Referencia Universidad de Sevilla 3183/0903. Título: Reajuste de dosis de nutrientes usando los sistemas inteligentes de medición y fertirriego de BrioAgro. Investigador principal: María Teresa Moreno Aguirre. Entidad Financiadora BrioAgro Tech S.L. Financiación recibida: 12000 €. Duración: 20/11/2017–31/07/2019.
- Tipo: contrato con empresas. Referencia Universidad de Sevilla 2878/0104. Título: Compostaje y vermicompostaje de residuos orgánicos tras el proceso de producción de *Pleurotus ostreatus*: procesos y caracterización de los productos. Investigador principal: Itziar Aguirre Jiménez. Entidad financiadora: Los Huertos de Hytasal S.A.L. Financiación recibida: 2318 €. Duración: 01/10/2016–30/09/2017.