

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	Jesús M ^a		
Family name	Marín Benito		
Gender (*)	Male	Birth date	04/04/1981
Social Security, Passport, ID number	28968377-S		
e-mail	jesusm.marin@irnasa.csic.es	URL Web	https://www.irnasa.csic.es/marin-benito-jesus-maria/
Open Researcher and Contributor ID (ORCID) (*)			https://orcid.org/0000-0002-8801-7389

(*) Mandatory

A.1. Current position

Position	Titular Scientist		
Initial date	01/12/2021		
Institution	Spanish National Research Council (CSIC)		
Department/Center	Environmental Degradation Processes and its Remediation/ Institute of Natural Resources and Agrobiology of Salamanca (IRNASA-CSIC)		
Country	Spain	Teleph. number	923219606
Key words	Soil, water, pesticides, adsorption, desorption, degradation, mobility, contamination, organic residues, soil management, modelling		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
16/01/2007 – 11/07/2007	I3P postgraduates Contract-CSIC/IRNASA-CSIC/Spain
12/07/2007 – 30/06/2008	Predocctoral Fellowship-JCyL/IRNASA-CSIC/Spain
01/07/2008 – 30/06/2010	Predocctoral Fellowship-JAE-Predoc CSIC/IRNASA-CSIC/Spain
01/07/2010 – 09/01/2012	Predocctoral Researcher Contract-JAE-Predoc CSIC /IRNASA-CSIC/Spain
10/01/2012 – 10/05/2014	Postdoctoral Researcher Contract/INRA/France
16/01/2016 – 15/01/2018	Postdoctoral Researcher-Juan de la Cierva-Incorporación /IRNASA-CSIC/Spain
01/06/2018 – 31/12/2018	Postdoctoral Researcher (project contract)/IRNASA-CSIC/Spain
16/09/2019 – 30/11/2021	Postdoctoral Researcher as PI of a JIN project (RTI2018-101587-J-I00)/IRNASA-CSIC/Spain
01/12/2021-Present	Titular Scientist/IRNASA-CSIC/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Chemical Sciences Master degree	University of Salamanca / Spain	2009
Chemical Sciences PhD (Extraordinary Doctorate Award)	University of Salamanca / Spain	2011

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

The interests of my research **are addressed to** deal the **rising environmental problems** in society linked to the intensive production and the management of agricultural soils with



special emphasis on the **contamination of soils and waters by pesticides**. I am focused on the design and development of conservation agriculture practices to jointly maintain/improve the productivity and preserve and/or improve the quality and sustainability of resources (soils and waters) at short, medium and long term. **My efforts are** based on the **study** of: i) the processes involved in **the dynamics of pesticides in agricultural soils under different soil management practices**, and ii) **the modelling** of the environmental pesticide fate for the **assessment and prediction** of their potential environmental contamination risk.

Throughout my career in CSIC Spain I have deeply studied the main **processes** involved in the **behavior of pesticides** in soils and the **changes** of this behavior **through** the use of **organic amendments** from laboratory to field scale. Then I have expanded the usefulness and applicability of these results by integrating them into mathematical models to **evaluate and predict** the **potential environmental risk** associated with the use of pesticides. My **modelling learning** has experienced a continuous evolution by laboratory, pseudo-field and field scale experiments through my pre- and post-doctoral **stays in prestigious International Research Centers and collaborations** with expert modelling researchers from different nationalities (Italy, UK and France more than 30 months). This background together with the scientific technical skills acquired (e.g. HPLC/DAD/MS, GC/MS, techniques with ¹⁴C-pesticides,...) gave me the knowledge and experience necessary to be: i) **Responsible** for the field experimental design and modelling studies developed in a Spanish National Project (AGL2015-69485-R, 2016-2018), ii) **Principal Investigator (PI) of a Spanish National Project** (2019-2022, **169.400 €**) focused on pesticide fate modelling under agriculture of conservation, and iii) Incorporated as a **Titular Scientist** at IRNASA-CSIC (Dec. 2021).

I have participated in **26 R&D projects (3 as PI, 1 as coordinator)** (7 National, 3 Regional, 8 International, 4 International Actions, 4 Others, Total amount: **3 M€**). I have published **40 JCR papers (25% signed with international researchers): 13 in D1 journals (32.5%), 18 Q1 (45%), 8 Q2 (20%) and 1 Q3 (2.5%) (h index=18, 899 citations (Scopus))**. I am the 1st or last author of 22 papers, and the corresponding author of 11. I have also published 8 papers in other journals, 2 book chapters, 22 in collective books, 20 in conference proceedings and 20 in divulgation media and I have presented 68 communications in International (42, being 12 oral) and National (26, being 15 oral) Conferences. I have obtained **2 research six-year periods** (last in 2021). Moreover, I have **supervised 3 PhD thesis** defended in 2019 (PhD. Víctor Barba, *Cum Laude* and Doctorate Award, <http://hdl.handle.net/10261/197568>), 2021 (PhD. M^a José Carpio, *Cum Laude* and Doctorate Award, <https://gredos.usal.es/handle/10366/148556>), and 2023 (PhD. Marwa Douibi, *Cum Laude*). I am accredited by the ANECA for the figure of Assistant Professor Doctor, I have also **supervised 14 Master/Degree/FP training students** (6 in last 5 years), **1 Master thesis** (Akhil Krishtammagari, 25/02/2022, Mark: 104/110) and **1 Final Degree project** (Pablo Reinares Martínez, 07/2023, Mark: 5.7/10), and **taught 12 Summer courses/seminars/divulgation conferences**. On the other hand, I am a **member** of the: 1. Expert Committee of the Spanish State Research Agency (AEI) and I have evaluated 7 R&D&i Projects for the AEI (2019-present); 2. Consolidated Research Unit of Castile and Leon UIC-275, 2019-2021; 3. Interdisciplinary Thematic Platform PTI-SOILBIO-CSIC (from 2018); 4. Spanish Society of Soil Science (SECS, from 2019); 5. Editorial board of *Processes* (MDPI, ISSN 2227-9717) and *Agrochemicals* (MDPI, ISSN 2813-3145); 6. Excellence Unit at IRNASA-CSIC (JCyL-2021-2024, 850,000 €). I am also **habitual reviewer** of scientific papers for international JCR journals, and **guest editor** for *Environments* (MDPI, ISSN 2076-3298), and *Agronomy* (MDPI, ISSN 2073-4395).

I am working in a thrilling interdisciplinary area of great scientist, environmental, political, social and economic interest. The **knowledge acquired** and the **multidisciplinary research network** built during my 16-year career has allowed me to **collaborate with different International Groups and Consortiums through several projects** (finished or ongoing).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Selected Publications

1. M. Douibi, A. Krishtammagari, M.J. Sánchez-Martín, M.S. Rodríguez-Cruz, **J.M. Marín-Benito** (2023). Mulching vs. organic soil amendment: Effects on adsorption-desorption of herbicides. *Science of the Total Environment* 892, art. 164749. FI: 9.8 (**D1**) (JCR 2022).
2. M.J. Carpio, M.S. Andrades Rodríguez, E. Herrero-Hernández, **J.M. Marín-Benito**, M.J. Sánchez-Martín, M.S. Rodríguez-Cruz (2023). Changes in vineyard soil parameters after repeated application of organic-inorganic amendments based on spent mushroom substrate. *Environmental Research* 221, art. 115339. FI: 8.3 (**D1**) (JCR 2022).
3. **Marín-Benito, J.M.**, Herrero-Hernández, E., Ordax, J.M., Sánchez-Martín, M.J., Rodríguez-Cruz, M.S. (2021). The role of two organic amendments to modify the environmental fate of S-metolachlor in agricultural soils. *Environmental Research* 195, art. 110871. FI: 8.431 (**Q1**) (JCR 2021).
4. **Marín-Benito, J.M.**, Carpio, M.J., Mamy, L., Sánchez-Martín, M.J., Rodríguez-Cruz, M.S. (2020). Field measurement and modelling of chlorotoluron and flufenacet persistence in unamended and amended soils. *Science of the Total Environment* 725: art. 138374. FI: 7.963 (**D1**) (JCR 2020).
5. García-Delgado, C., **Marín-Benito, J.M.**, Sánchez-Martín, M.J., Rodríguez-Cruz, M.S. (2020). Organic carbon nature determines the capacity of organic amendments to adsorb pesticides in soil. *Journal Hazardous Materials* 390: art. 122162. FI: 10.588 (**D1**) (JCR 2020).
6. **Marín-Benito, J.M.**, Mamy, L., Carpio, M.J., Sánchez-Martín, M.J., Rodríguez-Cruz, M.S. (2020). Modelling herbicides mobility in amended soils: calibration and test of PRZM and MACRO. *Science of the Total Environment*, 717: art. 137019. FI: 7.963 (**D1**) (JCR 2020).
7. Carpio, M.J., Rodríguez-Cruz, M.S., García-Delgado, C., Sánchez-Martín, M.J., **Marín-Benito, J.M.** (2020). Mobility monitoring of two herbicides in amended soils: A field study for modeling applications. *Journal of Environmental Management*, 260: art. 110161. FI: 6.789 (**Q1**) (JCR 2020).
8. **Marín-Benito, J.M.**, Carpio, M.J., Sánchez-Martín, M.J., Rodríguez-Cruz, M.S. (2019). Previous degradation study of two herbicides to simulate their fate in a sandy loam soil: Effect of the temperature and the organic amendments. *Science of the Total Environment* 653: 1301-1310. FI: 6.551 (**D1**) (JCR 2019).
9. **Marín-Benito, J.M.**, Barba, V., Ordax, J.M., Sánchez-Martín, M.J., Rodríguez-Cruz, M.S. (2018). Recycling organic residues in soils as amendments: effect on the mobility of two herbicides under different management practices. *Journal of Environmental Management* 224: 172-181, FI: 4.865 (**Q1**) (JCR 2018).
10. **Marín-Benito, J.M.**, Alletto, L., Barriuso, E., Bedos, C., Benoit, P., Pot, V., Mamy, L. (2018). Pesticide fate modeling in conservation tillage: simulating the effect of mulch and cover crop on S-metolachlor leaching. *Science of the Total Environment* 628-629: 1508-1517. FI: 5.589 (**Q1**) (JCR 2018).

C.2. Selected Congresses

1. M. Douibi, M.J. Carpio, M.J. Sánchez-Martín, M.S. Rodríguez-Cruz, **J.M. Marín-Benito**. "Conservation agriculture: Impact on the dissipation of herbicides". **Oral Presentation**. CONGRESS: IX Congresso Ibérico das Ciências do Solo (CICS 2022). June, 2022. Oeiras (Portugal).
2. M.J. Carpio, M. Douibi, M.J. Sánchez-Martín, M.S. Rodríguez-Cruz, **J.M. Marín-Benito**. "Disipación de herbicidas en campo: Agricultura conservación vs. agricultura convencional". **Oral Presentation**. CONGRESS: Congreso Ibérico "Suelo y Desarrollo Sostenible: Desafíos y Soluciones (CISDS 2020+1)". June, 2021. Oporto (Portugal).
3. **J.M. Marín-Benito**, L. Mamy, M.J. Carpio, M.J. Sánchez-Martín, M.S. Rodríguez-Cruz. "Simulación de la movilidad de dos herbicidas en un suelo agrícola sin enmendar y enmendado con residuos orgánicos usando modelos FOCUS". **Oral Presentation**. CONGRESS: "XIV Jornadas de investigación en la zona no saturada del suelo". October, 2019. Madrid (Spain).
4. M.J. Carpio, **J.M. Marín-Benito**, M.J. Sánchez-Martín, M.S. Rodríguez-Cruz. "Degradation of two herbicides on a sandy loam soil: Effect of the temperature and the organic amendments". **Oral Presentation**. CONGRESS: "TERRAenVISION Environmental Issues Today: Scientific Solutions for Societal Issues". January, 2018. Barcelona (Spain).

5. **J.M. Marín-Benito**, L. Alletto, E. Barriuso, C. Bedos, P. Benoit, V. Pot, L. Mamy. "Modeling S-metolachlor leaching in an agricultural soil covered with plant residue". **Oral Presentation**. CONGRESS: "Pesticide Behaviour in Soils, Water and Air". August, 2017. York (United Kingdom).
6. **J.M. Marín-Benito**, M.S. Rodríguez-Cruz, M.J. Sánchez-Martín. "Modeling applied to pesticides leaching under conservative soil and water agricultural practices". CONGRESS: "International Workshop on Sustainable Water Management". **Oral Presentation**. April, 2016. Valladolid (Spain).

C.3. Research projects

1. "Evaluation de l'exposition de l'environnement aux produits de biocontrôle comprenant des substances naturelles appliqués en grandes cultures et de leurs effets écotoxicologiques" (SN-BIOCONTROLE). 186.849 €. L'Office Française de la Biodiversité (OFB) (France), 2022–2025. Coordinator: Laure Mamy (INRAE). PARTICIPATION: Researcher.
2. "Aplicación de residuos orgánicos al suelo para la prevención y control de la contaminación por pesticidas en viticultura" (TED2021-129962B-C41). 134.320 €. MICINN/AEI/Next Generation EU, 2022-2024. **PIs and coordinators:** M^a Sonia Rodríguez Cruz and **Jesús M^a Marín Benito**.
3. "Impacto de prácticas agrícolas de conservación en la microbiología del suelo" (2022401079). 5.000 €. CSIC. 2022–2023. **PI: Jesús M^a Marín Benito**.
4. "External organic matters for climate mitigation and soil health" (EOM4Soil). 2 M€ (420.307€ CSIC; 68.180€ IRNASA). H2020- EJP-SOIL-Towards climate-smart sustainable management of agricultural soils, 2021–2024. Responsible CSIC: M^a Sonia Rodríguez-Cruz. PARTICIPATION: Researcher.
5. "Caractérisation de l'exposition du milieu aux produits de biocontrôle comprenant des substances naturelles appliqués en grandes cultures et de leurs impacts sur l'environnement". 95.414 €. ANR (France), 2021–2023. PI: Laure Mamy (INRAE). PARTICIPATION: Researcher.
6. "Biostimulant alternative casing for a sustainable and profitable mushroom industry" (BIOSCHAMP-101000651). 4.2 M€ (172.562,50 € IRNASA). H2020-SFS-2020-1; SFS-04-2019-2020), 2020–2024. Responsible IRNASA-CSIC: M^a Sonia Rodríguez Cruz. PARTICIPATION: Researcher.
7. "Coupling pesticide fate modelling and conservation cropping systems to reduce the agriculture footprints on ecosystems" (RTI2018-101587-J-I00). 169.400 €. MCIN/AEI/FEDER EU, 2019–2022. **PI: Jesús M^a Marín Benito**.
8. "Desarrollo de técnicas de viticultura regenerativa para mejorar la calidad de los suelos de viñedo riojano y la calidad de la uva que producen". (VITIREG 2019/00128/064). 199.766,79€ (100.332,32 €-Univ. Rioja-IRNASA-CSIC). Rural development 2014-2020 for Operational Groups-EU-LEADER-MAPA-Gobierno de La Rioja, 2019–2023. Responsible: M^a Soledad Andrades Rodríguez (Univ. Rioja), M^a Sonia Rodríguez-Cruz (Sub-contract IRNASA-CSIC). PARTICIPATION: Researcher.
9. "Dinámica de pesticidas en parcelas de campo experimentales enmendadas con residuos orgánicos: Simulación de su transporte en el suelo como herramienta para predecir la contaminación de aguas". (AGL2015-69485-R). 78.650 €. MINECO, 2016–2018. PI: M^a Jesús Sánchez Martín (IRNASA). PARTICIPATION: Researcher.
10. "Evaluation et modélisation quantitative multicritères de systèmes de culture en rupture à faible usage de pesticides en réseau multi-sites, répondant aux exigences ECOPHYTO 2018" (System-Eco-Puissance4). 360.000 €. ONEMA (France), 2012–2018. Coordinator: Nicolás Munier-Jolain (INRA). PARTICIPATION: Researcher.

C.4. Contracts, technological or transfer merits

- "Convenio de colaboración entre la Excm. Diputación Provincial de Salamanca y la Agencia Estatal CSIC, M.P. para instrumentar una subvención destinada al análisis de los efectos del empleo de metolachloro en cultivos realizados en la provincia de Salamanca". 10.000,00 €. Diputación de Salamanca. 2017-2018. PI: M^a Sonia Rodríguez Cruz (IRNASA). PARTICIPATION: Researcher.