MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

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

Part A. PERSONAL INFORMATION

CV date	September 7th, 2022

First name	Francisco Javier		
Family name	Romera Ruiz		
Gender (*)	Male	Birth date (dd/mm/yyyy)	
e-mail	ag1roruf@uco.es	URL web: www.uco.es/fethyleno	
Open Researcher and Contributor ID (ORCID) (*)		K-7637-2014, 0000-0001-5086-5473	

(*) Mandatory

A.1. Current position

Position	Full Professor			
Initial date	May 2016			
Institution	Universidad de Córdoba			
Department/Center	Agronomía	Escuela Superior de Ingeniería Agronómica y de Montes		
Country	Spain		Teleph. number	957218572
Key words	Chlorosis, Ethylene, Iron, Microorganisms, Nitric oxide, Plant Nutrition, Phosphorus, Rhizosphere			

A.2. Previous positions (research activity interruptions, art. 14.2.b)

Period	Position/Institution/Country/Interruption cause
1992-2000	Assistant Professor/UCO/Spain
2000-2016	Associate Professor/UCO/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Doctor in Agronomic Engineering	Universidad de Córdoba	1990

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

I have published more than 40 papers in international journals, most of them in the first quartile, like Plant Physiol, J Exp Bot, Front Plant Sci, Planta, Int J Mol Sci, etc. Several of my papers have more than 100 citations and some of them more than 200 citations. Moreover, our hypotheses are cited in many relevant reviews and books. The relevance of our research is also demonstrated by the special issues we have contributed (and contribute now) to edit. In 2016, I edited, in cooperation with Dr Pérez-Vicente (member of the Research Team) and Dr Smith (University of Louisiana, USA), a special issue of Front Plant Sci (Ethylene's Role in Plant Mineral Nutrition; see Romera et al 2016). In the same journal, I have just edited another special issue (Nutrient Interactions in Plants; see Romera et al 2021a), in cooperation with Dr Pérez-Vicente, Dr Lang (Institute of Soil Science, Nanjing, China) and Dr Rodríguez-Celma (Estación Aula Dei, Zaragoza). Right now, I am editing a special issue (Regulation of Physiological and Morphological Responses to Plant Nutrient Deficiencies), in cooperation with Dr Lucena and Dr García (members of the Work Team), in Int J Mol Sci. Besides this, in the last 10 years I have published several relevant reviews in prestigious journals (see García et al 2015, 2021b; Lucena et al 2015, 2018; Romera et al 2019). In addition, I have published 3 reviews in different books: 2 of them in Springer (see Romera et al 2017, 2021b) and 1 in Nova Science Publishers (see Romera et al 2015).

I have presented more than 40 Communications to International Congresses and more than 25 to National Congresses. In 2016, I was invited to give 1 Talk at the University of Jaboticabal (Brasil) and in 2017 I was invited to give 2 Talks at the Institute of Soil Science (Nanjing, China). This year I have been invited to give a Talk at the "XIV Reunión de la Sociedad Española de Biología de Plantas".

My main research topic is the regulation of Fe deficiency responses in dicot plants. Our Group was the first one to propose a role for ethylene in such a regulation. After our proposal, ethylene has also been involved in the regulation of other nutrient deficiency responses. More recently, our Group has found that ethylene is closely interrelated with nitric oxide, also implicated in the regulation of these responses, and with signals coming from the aerial part. In the last years, our Group is working on the role of microorganisms eliciting induced systemic resistance in the iron nutrition of plants. Recently, our Group has published a review (see Romera et al 2019), which has already been cited 70 times. Moreover, our Group has found for the first time that a non pathogenic race of *Fusarium oxysporum*, and some yeast species, can induce Fe deficiency responses in dicot plants, which suggest their possible use as Fe biofertilizers.

Since 2004, I have directed several national Research Projects and I have participated, either as participant or as IP, in 3 proposals of European Research Projects (not granted) and in an Integrated Action (granted). This year, I have participated in a European Research Project proposal ("Genetic and community diversity for plant productivity and stress resilience") led by Dr Jan Hejatko (CEITEC, Czech Republic). I have also directed several Contracts with private companies, the last ones related to microorganisms.

In the last years, I have collaborated with several international and national researchers, like Drs Stacey (University of Missouri, USA; see García et al 2013); Dr Bauer (University of Düsseldorf, Germany; see García et al 2018); Dr Smith (Louisiana State University, USA; see Lucena et al 2019); Dr García-Mina (Universidad de Navarra) and Dr Corpas (Estación Zaidín, Granada), see García et al 2018-Lucena et al 2019; Dr Martínez-Medina (IRNASA-CSIC, Salamanca, see Romera et al 2019).

In the last 10 years, I have co-directed 1 **Ph.D. Thesis,** with highly cited papers. Now I am codirecting 2 **new Ph.D Thesis**. I have also directed (or co-directed) several Final Career Projects and Master's Thesis.

In 2021, I was nominated Director of the "Cátedra Timac Agro-UCO", which has organized 3 webinars ('Biofertilizers', 'Plant nutrition in a more ecological agriculture' and 'The value of water'), and has offered several grants to students for their Master's Theses.

I regularly participate in the "Night of the Researchers" and gives dissemination to our results through the "UCCi-UCO" [https://www.uco.es/investigacion/ucci/es/noticias-gen/item/ 2532 (or 3424)] and through our webpages www.uco.es/fethyleno and www.uco.es/fethyleno/rhizosferrum (dedicated to microorganisms associated with the iron nutrition of plants). Recently, I have published a popular article in SEM@FORO (Ramos-Moreno et al 2019) and other one in The Conversation (https://theconversation.com/seis-claves-sobre-la-alimentacion-vegetal).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

Romera FJ, Lan P, Rodríguez-Celma J, Pérez-Vicente R (2021a) Editorial: Nutrient Interactions in Plants. **Frontiers in Plant Science** 12:782505

Romera FJ, Lucena C, García MJ, Alcántara E, Angulo M, Aparicio MA, Pérez-Vicente R (2021b) Plant hormones and nutrient deficiency responses. *In* **Hormones and Plant Response**, pp 29-65. Springer. ISBN 978-3-030-77476-9

Angulo M, García MJ, Alcántara E, Pérez-Vicente R, **Romera FJ** (2021) Comparative study of several Fe deficiency responses in the *Arabidopsis thaliana* ethylene insensitive mutants *ein2-1* and *ein2-5*. **Plants** 10:262

García MJ, Angulo M, García C, Lucena C, Alcántara E, Pérez-Vicente R, **Romera FJ** (2021a) Influence of ethylene signaling in the crosstalk between Fe, S, and P deficiency responses in *Arabidopsis thaliana*. **Frontiers in Plant Science** 12: 643585

García MJ, Lucena C, **Romera FJ** (2021b) Ethylene and nitric oxide involvement in the regulation of Fe and P deficiency responses in dicotyledonous plants. **International Journal of Molecular Sciences** 22:4904

Lucena C, Porras R, García MJ, Alcántara E, Pérez-Vicente R, Zamarreño AM, Bacaicoa E, García-Mina JM, Smith AP, **Romera FJ** (2019) Ethylene and phloem signals are implicated in the regulation of responses to Fe and P deficiencies in roots of Strategy I plants. **Frontiers in Plant Science** 10:1237

Ramos-Moreno L, Aparicio-Jiménez MA, Caro G, Ruiz-Castilla FJ, Calero F, Aguilar JJ, Lucena C, Romera FJ, Michán C, Ramos J (2019) Homeostasis iónica en levaduras y hongos filamentosos. Aplicaciones biotecnológicas y agrícolas. **SEM@FORO** 67:45-46

Romera FJ, García MJ, Lucena C, Martínez-Medina A, Aparicio MA, Ramos J, Alcántara E, Angulo M, Pérez-Vicente R (2019) Induced systemic resistance (ISR) and Fe deficiency responses in dicot plants. **Frontiers in Plant Science** 10:287

García MJ, Corpas FJ, Lucena C, Alcántara E, Pérez-Vicente R, Zamarreño ÁM, Bacaicoa E, García-Mina JM, Bauer P, **Romera FJ** (2018) A shoot Fe signaling pathway requiring the OPT3 transporter controls GSNO Reductase and ethylene in *Arabidopsis thaliana* roots. **Frontiers in Plant Science** 9:1325

Lucena C, Porras R, **Romera FJ**, Alcántara E, García MJ, Pérez-Vicente R (2018) Similarities and differences in the acquisition of Fe and P by dicot plants. **Agronomy** 8:148

Romera FJ, Lucena C, García MJ, Alcántara E, Pérez-Vicente R (2017) The role of ethylene and other signals in the regulation of Fe deficiency responses by dicot plants. *In* **Stress Signaling in Plants: Genomics and Proteomics Perspectives Vol 2**, pp 277-300. Springer. ISBN: 978-3-319-42182-7

Romera FJ, Smith AP, Pérez-Vicente R (2016) Editorial: Ethylene's Role in Plant Mineral Nutrition. **Frontiers in Plant Science** 7:911

García MJ, **Romera FJ**, Lucena C, Alcántara E, Pérez-Vicente R (2015) Ethylene and the regulation of physiological and morphological responses to nutrient deficiencies. **Plant Physiology** 169:51-60

Lucena C, **Romera FJ**, García MJ, Alcántara E, Pérez-Vicente R (2015) Ethylene participates in the regulation of Fe deficiency responses in Strategy I plants and in rice. **Frontiers in Plant Science** 6:1056

Romera FJ, Lucena C, García MJ, Alcántara E, Pérez-Vicente R (2015) Regulation of Fe deficiency responses in wt pea and some of its mutants (brz and dgl). *In* **Pisum sativum: Cultivation, Functional Properties and Health Benefits**, pp 1-20. Nova Science Publishers. ISBN: 987-1-63463-230-0

García MJ, **Romera FJ**, Stacey M, Stacey G, Villar E, Alcántara E, Pérez-Vicente R (2013) Shoot to root communication is necessary to control the expression of iron-acquisition genes in Strategy I plants. **Planta** 237:65-75

Alcántara E, Montilla I, Ramírez P, García-Molina P, **Romera FJ** (2012) Evaluation of quince clones for tolerance to iron chlorosis on calcareous soil under field conditions. **Scientia Horticulturae** 138:50-54

C.2. Congress

Plant Biology Congress 2012, Freiburg, Germany

Phloem iron plays a role in the expression of iron-acquisition genes in *Arabidopsis* roots (**Póster**) García MJ, Romera FJ, Villar E, Alcántara, Pérez-Vicente R

Iron, potassium and phosphate deficiencies up-regulate the expression of genes related to ethylene synthesis and iron-acquisition in *Arabidopsis* roots (**Oral**) García MJ, Puerto S, Romera FJ, Pérez-Vicente R, Alcántara E

XVII Symposium Iron Nutrition and Interactions in Plants 2014, Gatersleben, Germany

Ethylene involvement in the regulation of physiological responses to Fe and P deficiency: similarities and differences (**Póster**) Lucena C, Porras R, Romera FJ, Alcántara E, García MJ, Pérez-Vicente R, Bacaicoa E, García-Mina JM

Interaction of shoot derived signals with ethylene in the regulation of Fe acquisition genes by Strategy I plants (**Ora**l) García MJ, Romera FJ, Bauer P, Lucena C, Bacaicoa E, García-Mina JM, Zamarreño AM, Alcántara E, Pérez-Vicente R

12th International Conference on Reactive Oxygen and Nitrogen Species in Plants: from model systems to field 2015 Verona, Italy

Inverse relationship between NO and GSNO in the responses of dicots to Fe deficiency (**Oral**) García MJ, Corpas FJ, Romera FJ, Lucena C, Alcántara E, Pérez-Vicente R

18th International Symposium Iron nutrition and Interactions in Plants 2016, Madrid

Cross-talks between iron, phosphorous and sulfur deficiency responses (**Póster**) García MJ, Romera FJ, Lucena C, Alcántara, Pérez-Vicente R

Ethylene and phloem signals are implicated in the regulation of responses to Fe and P deficiency in roots of Strategy I plants (**Oral**) Lucena C, Romera MJ, Alcántara, García MJ, Pérez-Vicente R

The 6th Plant Nitric Oxide (NO) International Meeting 2016, Granada

Role of GSNOR in the responses of dicots to Fe deficiency (**Oral**) García MJ, Corpas FJ, Romera FJ, Lucena C, Alcántara E, Balmont M, Pérez-Vicente R

4th Biostimulants World Congress 2019, Barcelona

Pseudomonas simiae and a nonpathogenic strain of *Fusarium oxysporum* improve the induction of iron deficiency responses in cucumber and tomato plants (Oral) Romera FJ

XXIV Reunión de la Sociedad Española de Biología de Plantas 2021, Vigo

Plants need Fe but also other heavy metals (**Conferencia Invitada**) Romera FJ

A new *in vitro* model for testing the effects of the FO12 strain of *Fusarium oxysporum* on iron deficiency responses in *Arabidopsis thaliana* (**Póster**) Aparicio MA, Ramos J, García MJ, Pérez-Vicente R, Angulo M, Lucena C, Alcántara E, Romera FJ

Several yeast species induce iron deficiency responses in dicot plants (**Póster**) Romera FJ, Lucena C, Alcalá MT, Ramos J

C.3. Research projects

I have been involved in more than 11 Research Projects. Since 2004, I am the Head of our Research Group and I have been the Research Leader of 5 Research Projects (all of them funded by the Spanish Government), 3 of them in the last 10 years:

AGL2010-17121 (Iron nutrition of the dicot plants; 2011/2013; 84.700 €)

AGL2013-40822-R (Interaction of ethylene with other signals involved in the regulation of responses to Fe, P and S deficiency in dicot plants; 2014/2016; 121.000 €)

RTI2018-097935-B-I00 (Utility of a non pathogenic race of *Fusarium oxysporum* to improve the iron nutrition of dicots: basic aspects and application to olive and peach plants; 2019/2021; 145.200 €)

I have also been the Research Leader, along with Dr Ramos (member of the Research Team), of a Research Project funded by the Universidad de Córdoba, entitled “Improvement of iron nutrition in dicot plants through the soil application of microbes eliciting induced systemic resistance” (2017/2019).

This year, I have participated in a European Research Project proposal (**Genetic and community diversity for plant productivity and stress resilience**) led by Dr Jan Hejatko (CEITEC, Czech Republic).

C.4. Contracts, technological or transfer merits

In the last 10 years I have been the responsible of several contracts with private companies:

Study of the potentiality as biofertilizers of olive and cereal plants of several rhizhosphere microorganisms, **EMPRESA BIOTECARIOS**, 2022

Identification and characterization of rhizosphere microorganisms isolated from farms of the company, **EMPRESA SERVIAGRO 2000 S.L**, 2020

Influence of a non pathogenic race of *Fusarium oxysporum* to improve the iron nutrition of olive and peach plants grown in calcareous soils, **LABORATORIO JAER S.A.**, 2019/2020

Effect of the treatment with Cu gluconate on the phytotoxicity of soybean plants. **SERVALESA S.L.**, 2015/2017

Effect of EDDHA on the availability of P and divalent metals (Fe, Zn y Mn) in a calcareous soil. **LABORATORIO JAER S.A.**, 2016

Physiological and molecular aspects of the interaction Fe/P in dicot plants. **TIMAC AGRO ESPAÑA**, 2014