

## 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	Francisco Javier		
Family name	Romera Ruiz		
Gender (*)		Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
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, indicate total months)

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
Agronomy Engineer	Universidad de Córdoba	1986
Doctor in Agronomic Engineering	Universidad de Córdoba	1990

(Include all the necessary rows)

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

I have published more than 50 papers in international journals, most of them in the first quartile, like Plant Physiol, J Exp Bot and Front Plant Sci, some of them with more than 100 and 200 citations. My works have been cited more than 2700 times, more than 250 times per year in 2021 and 2022, my Research Interest Score is higher than 1300 and my h-index of 27 (<https://www.researchgate.net/profile/Javier-Romera>). I have already 5 six-year research periods and in the next days I am going to apply for the sixth one. In 1993, I was at the University of Cornell (USA) working with the prestigious plant nutrition scientists Ross Welch and Leon Kochian. I have presented more than 50 Communications to International Congresses and more than 30 to National Congresses. In 2021 I was invited to give 1 Talk at the "XIV Reunión de la Sociedad Española de Biología de Plantas". 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). Our hypotheses are cited in many reputable reviews and books. The relevance of my research is also demonstrated by the special issues I have contributed (and contribute now) to edit. In the last 10 years, I have coedited, based on my own ideas, 2 Special Issues in Front Plant Sci [Ethylene's Role in Plant Mineral Nutrition (2016) and Nutrient Interactions in Plants (2021)]. Now, I am coediting a Special Issue in Front Plant Sci (Role of Shoot Derived Signals on Root Responses to Environmental Changes) and



other one in Int J Mol Sci (Regulation of Physiological and Morphological Responses to Plant Nutrient Deficiencies). In the last 10 years I have published several relevant reviews in prestigious journals like Plant Physiol (see García et al 2015), Front Plant Sci (see Lucena et al 2015, Romera et al 2019) and Int J Mol Sci; 2 reviews in books of Springer and 1 in Nova Science Publishers. 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 which has been, later on, involved in other nutrient deficiency responses. We have also found that ethylene is closely interrelated with nitric oxide, also implicated in the regulation of these responses, and with shoot-derived signals. In the last years, we are also working on the role of beneficial rhizosphere microorganisms in the Fe nutrition of plants. In this area, we published in 2019 a review in Front Plant Sci, already cited more than 140 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 (results published in Microorganisms and Planta). 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). Last year, I participated in a European Research Project proposal (“Genetic and community diversity for plant productivity and stress resilience”) led by Dr Jan Hejatkó (CEITEC, Czech Republic) that was not granted. In the last years, I have also directed several Contracts with private companies, the last ones related to beneficial rhizosphere microorganisms. Since 2005, I have collaborated with several international researchers in research works based on my ideas, like Dr Waters (USA; see Lucena et al 2006, Waters et al 2007), Drs Stacey (USA, see García et al 2013), Dr Bauer (Germany), Dr Smith (USA); and national ones, like Dr García-Mina (Navarra), Dr Corpas (Granada) and Dr Martínez-Medina (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 3 new Ph.D Thesis. I have also directed (or co-directed) several Final Career Projects and Master's Thesis. Last 2 years I has been Director of the Cátedra Timac Agro-UCO, which has organized 2 webinars ('Biofertilizers' and 'Plant nutrition in a more ecological agriculture') and several scientific conferences, and has offered grants to students for their Master's Thesis. I regularly participate in the “Night of the Researchers” and gives dissemination of our results through the “UCCI-UCO” (<https://www.uco.es/investigacion/uccies/noticias>) and through our webpages [www.uco.es/fethylene](http://www.uco.es/fethylene) and [www.uco.es/fethylene/rhizosferrum](http://www.uco.es/fethylene/rhizosferrum) (dedicated to microorganisms associated with the iron nutrition of plants). In the last 3 years I have published several popular articles, in SEM@FORO, in The Conversation (<https://theconversation.com/seis-claves-sobre-la-alimentacion-vegetal>), in the web of the Timac Agro company (<https://es.timacagro.com/hierro-fosforo/>) and in Muy Interesante (Nº 499). Right now, a quince clone selected by our Group is under patent prosecution.

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

### C.1. Publications (see instructions)

- 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. 142 citations
- 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. 73 citations
- 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. 68 citations
- 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. 70 citations
- García MJ, Suárez V, Romera FJ, Alcántara E, Pérez-Vicente R (2011) A new model involving ethylene, nitric oxide and Fe to explain the regulation of Fe acquisition genes in Strategy I plants. **Plant Physiology and Biochemistry** 49: 537-544. 156 citations

- García MJ, Lucena C, **Romera FJ**, Alcántara E, Pérez-Vicente R (2010) Ethylene and nitric oxide involvement in the up-regulation of key genes related to iron acquisition and homeostasis in *Arabidopsis*. **Journal of Experimental Botany** 61: 3885-3899. 238 citations
- Waters BM, Lucena C, **Romera FJ**, Jester GG, Wynn AN, Rojas CL, Alcántara E, Pérez-Vicente R (2007) Ethylene involvement in the regulation of the H<sup>+</sup>-ATPase *CsHA1* gene and of the new isolated ferric reductase *CsFRO1* and iron transporter *CsIRT1* genes in cucumber plants. **Plant Physiology and Biochemistry** 45: 293-301. 159 citations
- Lucena C, Waters BM, **Romera FJ**, García MJ, Morales M, Alcántara E, Pérez-Vicente R (2006) Ethylene could influence ferric reductase, iron transporter and H<sup>+</sup>-ATPase gene expression by affecting FER (or FER-like) gene activity. **Journal of Experimental Botany** 57: 4145-4154. 173 citations
- Romera FJ**, Alcántara E, De la Guardia MD (1999) Ethylene production by Fe-deficient roots and its involvement in the regulation of Fe-deficiency stress responses by Strategy I plants. **Annals of Botany** 83: 51-55. 146 citations
- Romera FJ**, Alcántara E (1994) Iron-deficiency stress responses in cucumber (*Cucumis sativus* L.) roots: a possible role for ethylene? **Plant Physiology** 105: 1133-1138. 143 citations

**C.2. Congress**, indicating the modality of their participation (invited conference, oral presentation, poster)

**20th International Symposium Iron Nutrition and Interactions in Plants 2022, Reims (Francia)**

- EIN2 is a key player in the regulation of Fe deficiency responses in Strategy I plants (**Póster**) Romera FJ, García MJ, Angulo M, Lucena C, Pérez-Vicente R
- A shoot derived long distance iron signal (LODIS) may act upstream of the IMA peptides in the regulation of Fe deficiency responses in *Arabidopsis thaliana* roots (**Póster**) García MJ, Angulo M, Pérez-Vicente R, Lucena C, Romera FJ
- Iron deficiency responses are enhanced by the non-pathogenic strain of *Fusarium oxysporum* FO12 in cucumber (*Cucumis sativus* L.) and rice (*Oryza sativa* L.) plants (**Póster**) Sevillano J, Aparicio MA, Núñez J, Lucena C, García MJ, Pérez-Vicente R, Romera FJ

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

- Plants need Fe but also other heavy metals (**Invited conference**) 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

**4<sup>th</sup> 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

**The 6<sup>th</sup> 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

**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 E, 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 E, García MJ, 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

**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 (**Oral**) García MJ, Romera FJ, Bauer P, Lucena C, Bacaicoa E, García-Mina JM, Zamarreño AM, Alcántara E, Pérez-Vicente R

**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

**C.3. Research projects**, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

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):

**AGL2004-07630** (Iron nutrition in the dicot plants; 2004/2007; 91.310 €)

**AGL2007-64372** (Iron nutrition of dicot plants; 2007/2010; 139.150 €)

**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, 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; 24000 €).

Last year, I 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). In previous years, I also participated in 3 European Research Project proposals, either as participant or as IP, that were not granted

**C.4. Contracts, technological or transfer merits**, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

Study of the potentiality as biofertilizers of olive and cereal plants of several beneficial rhizosphere microorganisms, **EMPRESA BIOTECARIOS**, 2022 (7331 €)

Identification and characterization of rhizosphere microorganisms isolated from farms of the company, **EMPRESA SERVIAGRO 2000 S.L**, 2020 (8541€)

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 (9075€)

Effect of the treatment with Cu gluconate on the phytotoxicity of soybean plants. **SERVALESA S.L.**, 2015/2017 (8541€)

Effect of EDDHA on the availability of P and divalent metals (Fe, Zn y Mn) in a calcareous soil. **LABORATORIO JAER S.A.**, 2016 (7000€)

Physiological and molecular aspects of the interaction Fe/P in dicot plants. **TIMAC AGRO ESPAÑA**, 2014 (12396€)