

## C.v. Javier Abadía

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(full c.v. at [http://www.stressphysiology.com/pdf/cv\\_J\\_Abadia.doc](http://www.stressphysiology.com/pdf/cv_J_Abadia.doc))

02-04-1954 Born in Zaragoza, Spain

### **Education**

<i>Institution and Location, Degree</i>	<i>Year Conferred</i>	<i>Field of study</i>
University of Zaragoza, Spain	Lic. 1976	Chemistry
University of Zaragoza, Spain	Dr. 1981	Sciences/Chemistry

### **Scientific career**

2003-present	Research Professor CSIC, EEAD. Plant stress physiology
1989-2003	Researcher CSIC, EEAD. Plant stress physiology
1988-1989	Research Associate CSIC, EEAD. Plant stress physiology
1987	Visiting Scientist, OECD Fellow, University of Essex, Colchester, UK. Chlorophyll fluorescence techniques
1986-1988	Postdoctoral Fellow MEC, EEAD. Iron nutrition in plants
1984-1985	Postdoctoral Fellow CSIC and Assistant Specialist, University of California, Berkeley, California, USA. Iron nutrition in plants
1981-1983	Postdoctoral Fellow CSIC, EEAD. Iron nutrition in plants
1979-1981	Predoctoral Fellow CSIC, EEAD. Manganese nutrition in plants

### **Main research topics-competences**

Experience in: plant nutrition studies, with special emphasis in iron and other metals, in crops -including fruit trees- and model plant species; photosynthesis studies, including chlorophyll fluorescence, determination of plant pigments (chlorophylls and carotenoids), separation and analysis of pigment-protein complexes; application of mass spectrometry techniques to agricultural science studies; plant metabolomics (GC-MS) and proteomics (gel based and non-gel based techniques).

### **Responsibilities in Research Organization**

2018-	Member of the External Advisory Board MeditBio (Centre for Mediterranean Bioresources and Food), Faro, Algarve, Portugal
2004-2008	Member of the CSIC Agricultural Sciences Commission
2002-2004	Deputy Director of the CSIC Institute "Estación Experimental de Aula Dei"
1995-1998	Member of the Joint Commission CSIC-DGA
1995-1998	Coordinator of the project AIR3-CT94-1973, with 6 laboratories, funded by the Commission of the European Communities
1994-1998	Director of the CSIC Institute "Estación Experimental de Aula Dei"
1994-1995	Member of the Agronomic Sciences Committee of the Advisory Research Council of the Diputación General de Aragón (DGA, Local Government)

### **Membership in Scientific Societies**

American Society of Plant Physiologists/Biologists	since 1984
Sociedad Española de Fisiología Vegetal	" 1985
European Society of Plant Physiologists	" 1985
Japanese Society of Plant Physiologists	" 2000
Sociedad Española de Proteómica	" 2006
American Society for Horticultural Science	" 2017

### **Responsibilities in Scientific Societies**

1991-2012	Member of the Steering Committee of the International Symposium on Iron Nutrition and Interactions in Plants
1998-2004	Member of the Steering Committee of the Iberic Symposia Series on Plant Mineral Nutrition, of the Spanish Society of Plant Physiologists

### **PUBLICATIONS**

Articles in SCI peer-reviewed Journals

Researcher ID: <http://www.researcherid.com/rid/B-8804-2008>

<b>H index</b> (WOS ResearcherID, April 2019)	<b>49</b>
Articles in Dissemination and Technical Journals	<b>39</b>
Books and Special Journal issues edited	<b>6</b>
Invited Book Chapters	<b>6</b>
PhD Thesis supervised	<b>16</b>
Communications to Symposia	<b>236</b>

## Articles in SCI peer-reviewed Journals 2014-2019

### 2019

- 163** Gheshlaghi Z, Khorassani R, **Abadía J**, Kafi M, Fotovat A (2019) Glutathione foliar fertilisation prevents lime-induced iron chlorosis in soil grown *Medicago scutellata*. **Journal of Plant Nutrition and Soil Science** <sup>Q1</sup>, in press (doi: 10.1002/jpln.201800692)
- 162** Castillo-González J, Ojeda-Barrios D, Hernández-Rodríguez A, **Abadía J**, Sanchez E, Parra-Quezada R, Valles-Aragon MC, Sida-Arreola JP (2019) Zinc nutritional status of pecan trees influences physiological and nutritional indicators, the metabolism of oxidative stress, and yield and fruit quality. **Notulae Botanicae Horti Agrobotanici Cluj-Napoca** <sup>Q4</sup> 47, in press (doi: 10.15835/nbha47210389)
- 161** Müller B, Kovács K, Diep Pham H, Kavak Y, Pechoušek J, Machala L, Zbořil R, Szenthe K, **Abadía J**, Fodor F, Klencsár Z, Solti A (2018) Iron uptake machinery of chloroplasts utilise ferric-citrate but not iron-nicotianamine complexes in *Brassica napus*. **Planta** <sup>Q1</sup> 249, 751-763 (doi: 10.1007/s00425-018-3037-0)

### 2018

- 160** Hosseini MS, Samsampoor D, Ebrahimi M, **Abadía J**, Khanahmadi M (2018) Effect of drought stress on growth parameters, osmolyte contents, antioxidant enzymes and glycyrrhizin synthesis in licorice (*Glycyrrhiza glabra* L.) grown in the field. **Phytochemistry** <sup>Q1</sup> 156, 124-134 (doi: 10.1016/j.phytochem.2018.08.018)
- 159** Díaz-Benito P, Banakar R, Rodríguez-Menéndez SM, Capell T, Pereiro R, Christou P, **Abadía J**, Fernández B, **Álvarez-Fernández A** (2018) Distribution of iron and zinc between the embryo and endosperm of rice (*Oryza sativa* L.) seeds in contrasting nicotianamine/2'-deoxymugineic acid scenarios. **Frontiers in Plant Science** <sup>Q1</sup> 9, 1190 (doi: 10.3389/fpls.2018.01190)
- 158** Ceballos-Laita L, Gutierrez-Carbonell E, Imai H, **Abadía A**, Uemura M, **Abadía J**, **López-Millán A-F** (2018) Effects of manganese toxicity on the protein profile of tomato (*Solanum lycopersicum*) roots as revealed by two complementary proteomic approaches, two-dimensional electrophoresis and shotgun analysis. **Journal of Proteomics** <sup>Q1</sup> 185, 51-63 (doi: 10.1016/j.jprot.2018.06.016)
- 157** Lefèvre F, Fourmeau J, Baijot A, Cornet T, **Abadía J**, **Álvarez-Fernández A**, Boutry M (2018) A *Nicotiana tabacum* ABC transporter secretes O-methylated coumarins in response to iron deficiency. **Journal of Experimental Botany** <sup>D1</sup> 18, 4419-4431 (doi: 10.1093/jxb/ery221)
- 156** Hosseini MS, Zahedi SM, **Abadía J**, Karimi M (2018) Effects of postharvest treatments with chitosan and putrescine to maintain quality and extend shelf-life of two banana cultivars. **Food Science & Nutrition** <sup>Q3</sup> 6, 1328-1337 (doi: 10.1002/fsn3.662)
- 155** Davarpanah S, Tehranifar A, **Abadía J**, Val J, Davarynejad G, Aran M, Khorassani R (2018) Foliar calcium fertilization reduces fruit cracking in pomegranate (*Punica granatum* cv. Ardestani). **Scientia Horticulturae** <sup>Q1</sup> 230, 86-91 (doi: 10.1016/j.scienta.2017.11.023)
- 154** Ceballos-Laita L, Gutierrez-Carbonell E, Takahashi D, **Abadía A**, Uemura M, **Abadía J**, **López-Millán A-F** (2018) Effects of Fe and Mn deficiencies on the protein profiles of tomato (*Solanum lycopersicum*) xylem sap as revealed by shotgun analyses. **Journal of Proteomics** <sup>Q1</sup> 170, 117-129 (doi: 10.1016/j.jprot.2017.08.018), **Data in Brief** 17, 512-516 (doi: 10.1016/j.dib.2018.01.034)

### 2017

- 153** Ben Abdallah H, Mai H-G, **Álvarez-Fernández A**, **Abadía J**, Bauer P (2017) Natural variation reveals contrasting abilities to cope with alkaline and saline soil among different *Medicago truncatula* genotypes. **Plant and Soil** 418, 45-60 (doi: 10.1007/s11104-017-3379-6) <sup>Q1</sup>
- 152** Banakar R, **Álvarez-Fernández A**, Díaz-Benito P, **Abadía J**, Capell T, Christou P (2017) Phytosiderophores determine thresholds for iron and zinc accumulation in biofortified rice

endosperm while inhibiting the accumulation of cadmium. **Journal of Experimental Botany** 68, 4983-4995 (doi: 10.1093/jxb/erx304) <sup>Q1</sup>

**151** Banakar R, **Álvarez-Fernández A**, **Abadía J**, Capell T, Christou P (2017) A heterologous Fe (III) phytosiderophore transporter expressed in rice increases Fe uptake, translocation and seed loading but excludes heavy metals by selective Fe transport. **Plant Biotechnology Journal** 15, 423-432 (doi: 10.1111/pbi.12637) <sup>Q1</sup>

**150** **Davarpanah S**, Tehranifar A, Davarynejad G, Aran M, **Abadía J**, Khorasani R (2017) Effects of foliar nitrogen fertilizers on the physical and chemical properties of pomegranate (*Punica granatum* cv. Ardestani) fruits. **Hortscience** 52, 288-294 (doi: 10.21273/HORTSCI11248-16) <sup>Q2</sup>

#### 2016

**149** **Sisó-Terraza P**, **Luis-Villarroya A**, Fourcroy P, Briat J-F, **Abadía A**, Gaymard F, **Abadía J**, **Álvarez-Fernández A** (2016) Accumulation and secretion of coumarinolignans and other coumarins by *Arabidopsis thaliana* roots in response to iron deficiency at high pH. **Frontiers in Plant Science** 7, 1711 <sup>Q1</sup>

**148** Solti A, Kovács K, Muller B, Vázquez S, Tóth B, **Abadía J**, Fodor F (2016) Does a voltage-sensitive outer envelope transport mechanism contribute to the chloroplast iron uptake? **Planta** 6, 1303-1313 (doi: 10.1007/s00425-016-2586-3) <sup>Q1</sup>

**147** **Gutierrez-Carbonell E**, Takahashi D, Lüthje S, González-Reyes JA, Contreras-Moreira B, Uemura M, **Abadía J**, **López-Millán AF** (2016) A shotgun proteomic approach reveals that Fe deficiency causes marked changes in the protein profiles of plasma membrane and detergent resistant microdomain preparations from *Beta vulgaris* roots. **Journal of Proteome Research** 15, 2510-2524 (doi: 10.1021/acs.jproteome.6b00026) <sup>Q1</sup>

**146** **Davarpanah S**, Davarynejad G, **Abadía J**, Khorasani R (2016) Effects of foliar applications of zinc and boron nano-fertilisers on pomegranate (*Punica granatum* cv. Ardestani) fruit yield and quality. **Scientia Horticulturae**, 210, 57-64 (doi: 10.1016/j.scienta.2016.07.003) <sup>Q1</sup>

**145** **Ríos JJ**, **Carrasco-Gil S**, **Abadía A**, **Abadía J** (2016) Using Perls staining to trace the iron uptake pathway in leaves of a Prunus rootstock treated with iron foliar fertilizers. **Frontiers in Plant Science** 7, 893 (doi: 10.3389/fpls.2016.00893) <sup>Q1</sup>

**144** **Rodríguez-Celma J**, **Ceballos-Laita L**, Grusak M, **Abadía J**, **López-Millán AF** (2016) Plant fluid proteomics: delving into the xylem sap, phloem sap and apoplastic fluid proteomes. **Biochimica Biophysica Acta Proteins and Proteomics** 1864, 991-1002 (doi: 10.1016/j.bbapap.2016.03.014) <sup>Q2</sup>

**143** **Rodríguez-Celma J**, **Lattanzio G**, **Villarroya D**, **Gutierrez-Carbonell E**, **Ceballos-Laita L**, Rencoret J, Gutiérrez A, del Río JC, Grusak MA, **Abadía A**, **Abadía J**, **López-Millán AF** (2016) Effects of Fe deficiency on the protein profiles and lignin composition of stem tissues from *Medicago truncatula*. **Journal of Proteomics** 140, 1-12 (doi: 10.1016/j.jprot.2016.03.017) <sup>Q1</sup>

**142** **Carrasco-Gil S**, **Ríos JJ**, **Álvarez-Fernández A**, **Abadía A**, García-Mina JM, **Abadía J** (2016) Effects of individual and combined metal foliar fertilization on iron- and manganese-deficient *Solanum lycopersicum* plants. **Plant and Soil** 402, 27-45 (doi: 10.1007/s11104-015-2759-z) <sup>Q1</sup>  
*Erratum* **Plant and Soil** 402, 409-410

**141** **Sisó-Terraza P**, **Ríos JJ**, **Abadía J**, **Abadía A**, **Álvarez-Fernández A** (2016) Flavins secreted by roots of iron deficient *Beta vulgaris* enable mining of ferric oxide via reductive mechanisms. **New Phytologist** 209, 733-745 (doi: 10.1111/nph.13633) <sup>Q1</sup>

#### 2015

**140** **Gutierrez-Carbonell E**, **Lattanzio G**, Albacete A, **Ríos JJ**, Kehr J, **Abadía A**, Grusak MA, **Abadía J**, **López-Millán AF** (2015) Effects of Fe deficiency on the protein profile of *Brassica napus* phloem sap. **Proteomics** 15, 3835-3853 (doi: 10.1002/pmic.201400464) <sup>Q1</sup>

**139** **Ceballos-Laita L**, **Gutierrez-Carbonell E**, **Lattanzio G**, **Vázquez S**, Contreras-Moreira B, **Abadía A**, **Abadía J**, **López-Millán AF** (2015) Protein profile of *Beta vulgaris* leaf apoplastic fluid and changes induced by Fe deficiency and Fe resupply. **Frontiers in Plant Science** 6, 145 (doi: 10.3389/fpls.2015.00145) <sup>Q1</sup>

**138** **Larbi A**, **Vázquez S**, **El-Jendoubi H**, Msallem M, **Abadía J**, **Abadía A**, **Morales F** (2015) Canopy light heterogeneity drives leaf anatomical, eco-physiological and photosynthetic changes in olive trees grown in a high-density plantation. **Photosynthesis Research** 123, 141-155 (doi: 10.1007/s11120-014-0052-2) <sup>Q1</sup>

#### 2014

**137** **Gutierrez-Carbonell E**, Takahashi D, **Lattanzio G**, **Rodríguez-Celma J**, Soll J, Philippar K, Kehr J, Uemura M, **Abadía J**, **López-Millán A** (2014) The distinct functional roles of the inner

and outer chloroplast envelope of pea (*Pisum sativum*) as revealed by proteomic approaches. **Journal of Proteome Research** 13, 2941–2953 (doi: 10.1021/pr500106s) <sup>Q1</sup>

- 136** Ojeda-Barríos DL, Perea-Portillo E, Hernández-Rodríguez OA, Martínez-Téllez J, **Abadía J**, Lombardini L (2014) Foliar fertilization with zinc in pecan trees. **HortScience** 49, 562-566 <sup>Q2</sup>
- 135** **Álvarez-Fernández A**, **Díaz-Benito P**, **Abadía A**, **López-Millán AF**, **Abadía J** (2014) Metal species involved in long distance metal transport in plants. **Frontiers in Plant Science** 5, 105 (doi: 10.3389/fpls.2014.00105) <sup>Q1</sup>
- 134** **El-Jendoubi H**, **Vázquez S**, Calatayud A, Vavpetic P, Vogel-Mikuš K, Pelicon P, **Abadía J**, **Abadía A**, **Morales F** (2014) The effects of foliar fertilization with iron sulfate in chlorotic leaves are limited to the treated area. A study with peach trees (*Prunus persica* L. Batsch) grown in the field and sugar beet (*Beta vulgaris* L.) grown in hydroponics. **Frontiers in Plant Science** 5, 2 (doi: 10.3389/fpls.2014.00002) <sup>Q1</sup>
- 133** Sobrino-Plata J, **Carrasco-Gil S**, **Abadía J**, Escobar C, **Álvarez-Fernández A**, Hernández LE (2014) The role of glutathione in mercury tolerance resembles its function under cadmium stress in *Arabidopsis*. **Metallomics** 6, 356-66 (doi: 10.1039/c3mt00329) <sup>Q2</sup>
- 132** Basa B, **Lattanzio G**, Solti Á, Tóth B, **Abadía J**, Fodor F, Sárvári É (2014) Changes induced by cadmium stress and iron deficiency in the composition and organization of thylakoid complexes in sugar beet (*Beta vulgaris* L.). **Environmental Experimental Botany** 101, 1-11 (doi: 10.1016/j.envexpbot.2013.12.026) <sup>Q1</sup>
- 131** Fourcroy P, **Sisó-Terraza P**, Sudre D, Savirón M, Reyt G, Gaymard F, **Abadía A**, **Abadía J**, **Álvarez-Fernández A**, Briat JF (2014) Involvement of the ABCG37 transporter in secretion of scopoletin and derivatives by *Arabidopsis* roots in response to iron deficiency. **New Phytologist** 201, 155-167 (doi: 10.1111/nph.12471) <sup>Q1</sup>

#### **Member of Editorial Committees in Scientific Journals**

-Frontiers in Plant Science (Plant Nutrition)	2011-2015
-Functional Plant Biology	2009-2014
-BioMetals	2005-2008

#### **Review of Grant Proposals**

Agencia Nacional de Evaluación y Prospectiva ANEP (1988), Israel Basic Research Foundation (1992-), International Science Foundation ISF (1993), BARD US-Israel (1995-), USDA (1997-), Italian Ministry for University and Research MURST (2000-)

#### **Review of Research Papers**

Plant Physiology (1991-), Journal of Plant Nutrition (1995-), Physiologia Plantarum (1997-), European Journal of Agronomy (1997-), Protoplasma (1998-), Plant Physiology Biochemistry (1999-), Plant and Soil (1999-), J Photochemistry Photobiology (1999-), Annals of Botany (2002-), Tree Physiology (2002-), Inorganic Chemistry (2003-), Plant Science (2003-), Plant Molecular Biology (2005-), Journal of Separation Science (2005-), Scientia Horticulturae (2006-), Journal of Plant Physiology (2006-), Journal of Experimental Botany (2006-), Plant & Cell Environment (2006-), New Phytologist (2008-), Journal of Hazardous Materials (2008-), Pedosphere (2009-), Environmental Experimental Botany (2009-), Journal of Agricultural and Food Chemistry (2010-), Journal of Plant Growth Regulation (2010-), Critical Reviews In Biochemistry & Molecular Biology (2010-), BMC Plant Biology (2010-), Journal of Plant Nutrition and Soil Science (2010-), Journal of Proteomics (2010-), Journal of Proteome Research (2010-), Plant and Cell Physiology (2011-), Journal of Biological Chemistry (2011-), BMC Plant Genomics (2011-), Talanta (2011-), Journal of the Science of the Food and Agriculture (2011-), Frontiers in Plant Science (2011-), Plant Cell (2017-), Science (2018-)

#### **Participation in Master and Doctorate courses**

Universidad de Zaragoza: Química Analítica Agrícola (1990), Técnicas analíticas en Bioquímica y Fisiología Vegetal (1992), Técnicas fisiológicas y bioquímicas en Agronomía (1994, 1996).  
Universidad Autónoma de Madrid: Master Química Agrícola (2006, 2007, 2008, 2009, 2010, 2011).  
Universidad Autónoma de Chihuahua, México: Maestría Agricultura (2008).

#### **Participation in PhD Thesis Committees at Universities**

Spain: Autónoma de Madrid, Zaragoza, Granada, Córdoba, Murcia, Autónoma de Barcelona, Navarra, Pública de Navarra, Alcalá de Henares

Abroad: Bologna (Italy), Lund (Sweden), Algarve (Faro, Portugal), Copenhagen (Denmark), Bogotá (Colombia).