



BRIEF *Curriculum vitae*

1. PERSONAL DATA

Name: Molinero-Ruiz
First name: Leire
Passport no: AB208044
Nationality: Spanish

2. PRESENT PROFESSIONAL POSITION

Institution: Spanish National Research Council (CSIC)
Faculty, School or Institute: Institute for Sustainable Agriculture (IAS)
Department: Crop Protection
Address: Alameda del Obispo s/n, 14004 Cordoba
Country: Spain

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Field of study (UNESCO codes): 3108.03/3108.05/3108.08/3108.99
Professional status: Tenured Scientist
Administrative status: Permanent Staff

3. EDUCATION

PhD Agronomy – Plant Pathology
University of Cordoba (Spain). 1995 – 1999.

Agricultural Engineer
University of Cordoba (Spain). 1988 – 1995.

4. RESEARCH EXPERIENCE

Staff Researcher.
Universidad de Castilla-La Mancha – E.U.I.T. Agrícola Ciudad Real.
Ciudad Real (Spain). Jan 2002 – Dec 2002

Postdoctoral Researcher.
Spanish National Research Council – Institute for Sustainable Agriculture (IAS), Crop Protection
Department.
Cordoba (Spain). Jan 2003 – Apr 2006



Visiting Scientist.

Ghent University – Faculty of Bioscience Engineering, Crop Protection Department, Phytopathology Lab.
Ghent (Belgium). Jul 2007 – Nov 2007

Postdoctoral Researcher.

Institute of Agricultural Research and Training (IFAPA) – Crop Protection Department.
Seville (Spain). Nov 2007 – Sept 2009

Tenured Scientist.

Spanish National Research Council – Institute for Sustainable Agriculture (IAS), Crop Protection
Department.
Cordoba (Spain). Sept 2009 – present.

5. SUMMARY OF RESEARCH AREA

KEYWORDS: Plant pathology, Field crops, Soilborne pathogens.

Research topics include etiology, characterization of populations and control of soilborne pathogens of field crops. I study the most important diseases of sunflower, with emphasis on strategies for the control of broomrape (*Orobanche cumana*) and downy mildew (*Plasmopara halstedii*), including genetic resistance and chemical and cultural methods. Other research, is carried out in conjunction with sunflower breeders, agronomists and entomologists and deals with insect pests, disease resistance and its expression and effect on yield under field conditions. Additional research lines are focused on etiological and epidemiological factors of late wilt of maize (*Cephalosporium maydis*) and the efficacy of bioactive compounds on the control of soil-borne pathogens.

6. BRIEF SCIENTIFIC PROFILE

Dr. Molinero-Ruiz has effectively managed more than 20 competitive Spanish Research Projects and International Research Contracts with private companies (DuPont- Pioneer, Syngenta, Monsanto and Agricol Ltd. among others), all of them directly related with sunflower and/or diseases of crops caused by soilborne pathogens as main topics. She was also a participant in 2 EU Projects (STD-3 Programme Life Sciences and Technologies for Developing Countries, ERB 3504PL910430, and Cost Action 849).

Currently, Dr. Molinero-Ruiz coordinates the project MSCA-ITN 2019 (ID 859862), submitted to the European Commission (H2020) and currently under evaluation. The project consortium is composed of 10 research groups and 3 SMEs from 8 different countries. Dr. Molinero-Ruiz is also Principal Investigator of Spain of a proposal submitted to FAO/IAEA (RER2018016). The proposal, led by Prof. Nasya Tomlekova (Bulgaria), has 14 participant countries and is currently under evaluation.

Dr. Molinero-Ruiz has supervised 6 MSc students and 3 PhD students (two are currently ongoing).

Head, Crop Protection Department at IAS-CSIC. 2012 to 2016.

Vice director at IAS-CSIC. 2016 to date.



7. PUBLICATIONS INDEXED IN JOURNAL CITATION REPORTS/SCIENCE EDITION (ABOUT SUNFLOWER):

Molinero-Ruiz, M.L., Melero-Vara, J.M. and J. Dominguez. 2002. Inheritance of resistance to race 330 of *Plasmopara halstedii* in three sunflower (*Helianthus annuus* L.) lines. *Plant Breeding* 121 (1): 61-65.

Molinero-Ruiz, M.L. and J.M. Melero-Vara. 2002. First report of stem rot and wilt of sunflower caused by *Sclerotinia minor* in Spain. *Plant Disease* 86 (6): 697.

Molinero-Ruiz, M.L., J. Dominguez and J.M. Melero-Vara. 2002. Races of isolates of *Plasmopara halstedii* from Spain and studies on their virulence. *Plant Disease* 86 (7): 736-740.

Molinero-Ruiz, M.L., Melero-Vara, J.M. and J. Dominguez. 2003. Inheritance of resistance to two races of sunflower downy mildew (*Plasmopara halstedii*) in two *Helianthus annuus* L. lines. *Euphytica* 131: 47-51.

Molinero-Ruiz, M.L., Melero-Vara., J.M., Gulya, T. and J. Dominguez. 2003. First report of resistance to metalaxyl in downy mildew (*Plasmopara halstedii*) of sunflower in Spain. *Plant Disease* 87 (6): 749.

Molinero-Ruiz, M.L., Melero-Vara, J.M., García-Ruiz, R. and J. Dominguez. 2006. Pathogenic diversity within field populations of *Orobanche cumana* and different reactions on sunflower genotypes. *Weed Research* 46: 462-469.

Molinero-Ruiz, M.L., Pérez-Vich, B., Pineda-Martos, R. and J.M. Melero-Vara. 2008. Indigenous highly virulent accessions of the sunflower root parasitic weed *Orobanche cumana*. *Weed Research* 48: 169-178.

Molinero-Ruiz, M.L., Cordon-Torres, M.M., Melero-Vara, J.M. and J. Dominguez. 2008. Resistance to metalaxyl and to metalaxyl-M in populations of *Plasmopara halstedii* causing sunflower downy mildew. *Canadian Journal of Plant Pathology* 30 (1): 97-105.

Molinero-Ruiz, M.L., García-Ruiz, R., Melero-Vara, J.M. and J. Dominguez. 2009. *Orobanche cumana* race F: performance of resistant sunflower hybrids and aggressiveness of populations of the parasitic weed. *Weed Research* 49: 469-478.

Molinero-Ruiz, L., García-Carneros, A.B., Collado-Romero, M., Raranciuc, S., Domínguez, J. and J.M. Melero-Vara. 2014. Pathogenic and molecular diversity in highly virulent populations of the parasitic weed *Orobanche cumana* (sunflower broomrape) from Europe. *Weed Research* 54 (1): 87-96.

García-Ruiz, R., García-Carneros, A.B. and **L. Molinero-Ruiz**. 2014. A new race of *Verticillium dahliae* causing leaf mottle of sunflower in Europe. *Plant Disease* 98 (10): 1435.

Molinero-Ruiz, L., P. Delavault, B. Pérez-Vich, M. Pacureanu-Joita, M. Bulos, E. Altieri and J. Dominguez. 2015. History of the race structure of *Orobanche cumana* and the breeding of sunflower for resistance to the parasitic weed: A review. *Spanish Journal of Agricultural Research* 13 (4): e10R01, 19 p.



Ortiz-Bustos, C.M., Pérez-Bueno, M.L., Barón, M. and **L. Molinero-Ruiz**. 2016. Fluorescence imaging in the red and far-red region during growth of sunflower plantlets. Diagnosis of the early infection by the parasite *Orobanche cumana*. *Frontiers in Plant Science*, June 2016, vol. 7, 884.

García-Carneros, A.B. and **L. Molinero-Ruiz**. 2017. First report of the highly virulent race 705 of *Plasmopara halstedii* (downy mildew of sunflower) in Portugal and in Spain. *Plant Disease* 101 (8): 1555.

Ortiz-Bustos, C.M., Pérez-Bueno, M.L., Barón, M. and **L. Molinero-Ruiz**. 2017. Use of blue-green fluorescence and thermal imaging in the early detection of sunflower infection by the root parasitic weed *Orobanche cumana* Wallr. *Frontiers in Plant Science*, May 2017, vol. 8, 833.

Martín-Sanz, A., Rueda, S., García-Carneros, A.B. and **L. Molinero-Ruiz**. 2018. *Cadophora malorum*: a new pathogen of sunflower causing wilting, yellowing and leaf necrosis in Russia. *Plant Disease* 102 (4): 823.

Martín-Sanz, A., Rueda, S., García-Carneros, A.B., González-Fernández, S., Miranda-Fuentes, P., Castuera-Santacruz, S. and **L. Molinero-Ruiz**. 2018. Genetics, host range, and molecular and pathogenic characterization of *Verticillium dahliae* from sunflower reveal two differentiated groups in Europe. *Frontiers in Plant Science*, March 2018, vol. 9, 288.

Molinero-Ruiz, L. 2019. Recent advances on the characterization and control of sunflower soilborne pathogens under climate change conditions. *OCL - Oilseeds and fats, Crops and Lipids* 26 (1): 2.

8. OTHER INTERNATIONAL PUBLICATIONS (ABOUT SUNFLOWER)

Molinero-Ruiz, M.L., Melero-Vara, J.M. and T.J. Gulya. 1998. Pathogenic characterization of *Plasmopara halstedii* isolates from Spain. Pp. 26-29 In: "I.S.A. Symposium III, Sunflower Downy Mildew". International Sunflower Association.

Molinero-Ruiz, M.L., Domínguez-Giménez, J. and J.M. Melero-Vara. 2000. Evaluation of Spanish isolates of *Plasmopara halstedii* for tolerance to metalaxyl. *Helia* 23 (33): 33-38.

Molinero-Ruiz, M.L., J. Dominguez, T.J. Gulya and J.M. Melero-Vara. 2005. Reaction of field populations of sunflower downy mildew (*Plasmopara halstedii*) to metalaxyl and mefenoxam. *Helia* 28 (42): 65-74.

M.L. Molinero-Ruiz. 2010. Tratamientos fitosanitarios en el cultivo de girasol en España: limitaciones. Pp. 219-229 En: "11º Symposium de Sanidad Vegetal: uso sostenible de fitosanitarios" Junta de Andalucía, Consejería de Agricultura y Pesca, Seville (Spain). ISBN: 978-84-8474-278-4.

Akhtouch, B., **Molinero-Ruiz, L.**, Dominguez, J., Melero-Vara, J.M. and J.M. Fernández-Martínez. 2013. Using sowing date modification and genetic resistance to manage sunflower broomrape (*Orobanche cumana* Wallr.). *Helia* 36 (59): 17-34.

Pérez-Bueno, M.L., Barón, M., García-Carneros, A.B. and **L. Molinero-Ruiz**. 2014. Diagnosis of the infection of sunflower by *Orobanche cumana* using multicolour fluorescence imaging. *Helia* 37 (61): 173-179.



García-Carneros, A.B., García-Ruiz, R. and **L. Molinero-Ruiz**. 2014. Genetic and molecular approach to *Verticillium dahliae* infecting sunflower. *Helia* 37 (61): 205-214.

9. OTHER RELEVANT ACTIVITIES (SELECTION ABOUT SUNFLOWER)

International:

- International Expert. Fond National pour la Reserche Scientifique (FNRS), Brussels (Belgium): Évaluateur de Propositions pour Aspirants au Doctorat, 2010.
Reviewer of Charge de reserches / Three-year postdoctoral fellowships. 2014.
- International Expert for reviewing Scientific Research Proposals and Technological Projects submitted for grant funding National Centre of Science and Technology Evaluation, Ministry of Education and Science, Astana (Republic of Kazakhstan). Period 2011-2014, 2017.
- Member of the Organizing Committee of the III Internacional Symposium of Orobanche spp. of Sunflower (Córdoba, Spain, June 2014).
- Reviewer of Research Proposals. Israel Science Foundation (ISF), Jerusalem (Israel). 2018.
- International Expert. National Research Foundation, Pretoria (South Africa):
Reviewer of Scientific Research Projects submitted to the Thuthuka Programme. 2015.
Reviewer of the South African Research Chairs Initiative. 2018.

National:

- Vice-president of the Managing Board of the Spanish Sunflower Association (Asociación Española del Girasol). 2014 to date.
- Anonymous evaluator of the “Agencia Nacional de Evaluación y Prospectiva (ANEP)”, for the selection of national research projects in the areas of Agriculture and Transfer of Technology, Spain. 2012 to date.
- Member of the National Commission for Evaluation of Varieties of Oleagionous Seeds. Ministry of Agriculture, Food and Environment, Spain. 2011 to date.
- President of the Organizing Committee of the I National Technological Congress on Sunflower (Córdoba, Spain, June 6, 2019).