

CURRICULUM VITAE

I.- PERSONAL DATA

Name: **José Luis GABRIEL**

Date of birth: **June 19, 1982**

INIA-Dpto. Medio Ambiente
Ctra. de la Coruña km.7,5
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Nationality: Spanish



II.- EDUCATION

PhD Universidad Politécnica de Madrid (Spain)

2011

Agricultural engineer Universidad Politécnica de Madrid (Spain)

2006

Languages: native in Spanish, fluent in English, beginner in French

III.- RESEARCH PROJECTS

- **Member of the research team in the following projects:**

1. SolACE: Solutions for improving Agroecosystem and Crop Efficiency for water and nutrient use.
Funded by: European Commission (Grant Agreement 727247) Duration: May-2017 to April-2022
Coordinator: INRA (France). Director of research UPM group: Miguel Quemada
2. Spanish initiative research in efficiency of N in Agroecosystems (SIRENA Research Network).
Funded by: CICYT (AGL2015-68881-REDT).
Duration: December-2015 to November-2017
Research coordinator: Miguel Quemada.
3. AGRISOST II
Funded by: CAM (S2013/ABI-2717) (Spain)
Duration: October 2014-September 2018
Research coordinator: Antonio Vallejo.
4. Mejora del manejo de los cultivos cubierta para aumentar la sostenibilidad de sistemas de cultivo en regadío
Funded by: National RTD Program CICYT (AGL2014-52310-R).
Duration: January 2015-December 2017
Research coordinator: Miguel Quemada.
5. Replacing bare fallow with cover crops in a maize cropping system: soil salinity and nitrate leaching analysis.
Funded by: FSR Incoming Post-doctoral Fellowship of the Université catholique de Louvain co-funded by the Marie Curie Actions of the European Commission.
Duration: October 2012-September 2013.
Research coordinator: Marnik Vanclooster and José L. Gabriel.
6. Introducing cover crops in irrigated systems: nitrogen effect, water balance and soil quality.
Funded by: National RTD Program CICYT (AGL2011-24732).
Duration: January 2012-December 2014
Research coordinator Miguel Quemada.
7. AGRISOST.
Funded by: CAM (S2009/AGR-1630) (Spain)
Duration: January 2010-December 2014
Research coordinator: Antonio Vallejo.

8. Toolbox of cost-effective strategies for on-farm reductions in N losses to water (N-toolbox).
Funded by: European Commission (Grant agreement number 227156).
Duration: March 2009-August 2012
Research coordinator: Miguel Quemada.
9. New products and fertilization techniques for improving soil productivity and its conservation. Simulation of the wheat and maize yield: model calibration and evaluation of the fertilization techniques at the short term.
Funded by: Fertiberia.
Duration: February 2010-February 2011.
Research coordinator: Jon I. Lizaso.
10. Cover crops effect on nitrate leaching, nitrogen use efficiency and soil quality.
Funded by: National RTD Program CICYT (AGL2008-00163/AGR).
Duration: January 2009-December 2011
Research coordinator Miguel Quemada.
11. Evaluation of agronomic and economic strategies to reduce nitrate leaching in maize cropping systems.
Funded by: National RTD Program CICYT (AGL2005-08020-C05-04).
Duration: January 2006-December 2008.
Research coordinator: Miguel Quemada.
12. Calibration and Validation of the Grape Model STICS for Application in the Study of the Nitrate Leaching and Control Strategies in the Vulnerable Zone of Aldeanueva de Ebro (La Rioja, Spain).
Funded by: ECCYSA, La Rioja (Spain).
Duration: April 2007-December 2007.
Research coordinator: Miguel Quemada.
13. Study of the Nitrate Leaching and Control Strategies in the Vulnerable Zone of Aldeanueva de Ebro (La Rioja, Spain) with the Application of a GIS and Simulation Models.
Funded by: ECCYSA, La Rioja (Spain).
Duration: May 2005-July 2006.
Research coordinator: Miguel Quemada.
14. Research Network: The Nitrogen Efficient Use in Agricultural.
Funded by: National RTD Program (Spain).
Duration: since 2006.
Research coordinator: Pedro M. Aparicio

IV.- PUBLICATIONS

- **Journal indexed in JCR:**

1. Quemada, M., Gabriel, J.L. 2016. Approaches for increasing nitrogen and water use efficiency simultaneously. *Global Food Security* 9, 29-35.
2. García-González, I., Quemada, M., Gabriel, J.L., Hontoria, C. 2016. Arbuscular mycorrhizal fungal activity responses to winter cover crops in a sunflower and maize cropping system. *Applied Soil Ecology* 102, 10-18.
3. Gabriel, J.L., Alonso-Ayuso, M., García-González, I., Hontoria, C., Quemada, M. 2016. Nitrogen use efficiency and fertiliser fate in a long-term experiment with winter cover crops. *European Journal of Agronomy* 79, 14-22.
4. Alonso-Ayuso, M., Gabriel, J.L., Quemada, M. 2016. Nitrogen use efficiency and residual effect of fertilizers with nitrification inhibitors. *European Journal of Agronomy* (In press).
5. Ramirez-Garcia, J., Alonso-Ayuso, M., Gabriel, J.L., Quemada, M. 2015. Quantitative characterization of five cover crop species. *Journal of Agricultural Science* 153: 1174-1185.
6. Quemada, M., Gabriel, J.L., Zarco, P. 2014. Airborne hyperspectral images and ground level optical sensors as assessment tools for maize nitrogen fertilization. *Remote Sensing* 6: 2940-2962.

7. Alonso-Ayuso, M., Gabriel, J.L., Quemada, M. 2014. The kill date as a management tool for cover cropping success. *PloS One* 9 (10), e109587.
8. Gabriel, J.L., Vanclooster, M., Quemada, M. 2014. Integrating water, nitrogen and salinity management to increase sustainability of irrigated systems: cover cropping versus fallow. *J. Irrigation and Drainage Engineering* 140 (9), A4014002.
9. Sanz-Cobena, A., García-Marco, S., Quemada, M., Gabriel, J.L., Almendros, P., Vallejo, A., 2014. Do cover crops enhance N₂O, CO₂ or CH₄ emissions? *Science of the Total Environment* 466-467, 164-174.
10. Gabriel, J.L., Garrido, A., Quemada, M. 2013. Cover crops effect on farm benefits and nitrate leaching: linking economic and environmental analysis. *Agricultural Systems* 121, 23-32.
11. Gabriel, J.L., Muñoz-Carpena, R., Quemada, M., 2012. The role of cover crops in irrigated systems: water balance, nitrate leaching and soil mineral nitrogen accumulation. *Agric. Ecosyst. Environ.* 155, 50–61.
12. Gabriel, J.L., Almendros, P., Hontoria, C., Quemada, M., 2012. The role of cover crops in irrigated systems: Soil salinity and salt leaching. *Agric. Ecosyst. Environ.* 158, 200–207.
13. Gabriel, J.L., M. Quemada. 2011. Replacing bare fallow with cover crops in a maize cropping system: Yield, N uptake and fertiliser fate. *European Journal of Agronomy* 34(3): 133-143.
14. Ruiz-Ramos, M., Gabriel, J.L., Vázquez, N., Quemada, M. 2011. Simulation of nitrate leaching in a vulnerable zone: effect of irrigation water and organic manure application. *Spanish Journal of Agricultural Research* 9(3): 924-937.
15. Gabriel, J.L., J.I. Lizaso, M. Quemada. 2010. Laboratory versus field calibration of multisensor capacitance probes. *Soil Science Society of America Journal* 74(2): 593-601.

- **Book chapters:**

1. García-González, I., Alonso-Ayuso, M., Gabriel, J.L., Quemada, M., Hontoria, C. 2016. Effect of cover crops in enzymatic activities and other biological parameters related to soil quality. VII Congreso Ibérico das Ciências do Solo & VI Congresso Nacional de Rega e Drenagem. 95-98. ISBN 978-989-99665-0-5.
2. García-González, I., Gabriel, J.L., Alonso-Ayuso, M., Quemada, M., Hontoria, C. 2016. Mycorrhizal, soil and plant responses to winter cover crops under an irrigated maize system in central Spain. VII Congreso Ibérico das Ciências do Solo & VI Congresso Nacional de Rega e Drenagem. 91-94. ISBN 978-989-99665-0-5.
3. Alonso-Ayuso, M., Gabriel, J.L., Tizon, F., del Monte, J.P., Quemada, M. 2016. The cover crop kill date: key for the weed control. 7th International Weed Science Congress. 438-438. ISBN 978-80-213-2648-4.
4. Alonso-Ayuso, M., Gabriel, J.L., del Monte, J.P., Quemada, M. 2016. The weed seedbank after 8 years of winter cover cropping. 7th International Weed Science Congress. 119-119. ISBN 978-80-213-2648-4.
5. Gabriel, J.L., Quemada, M. 2015. Integrando agua, nitrógeno y salinidad en sistemas de regadío: cultivos cubierta frente a barbecho. *Estudios de la Zona No Saturada del Suelo*. Vol: 12. 85-92. ISBN: 978-84-16133-91-8.
6. Alonso-Ayuso, M., Gabriel, J.L., Quemada, M. 2015. La fecha de matado como clave del éxito de los cultivos cubierta. *Estudios de la Zona No Saturada del Suelo*. Vol: 12. 207-214. ISBN: 978-84-16133-91-8.
7. Soldevilla, M., Gabriel, J.L., Lizaso, J.I., P., Quemada, M. 2014. Initializing the DSSAT-Century model: inverse calibration of carbon pools from apparent soil N mineralization. *Proceedings of the 18th Nitrogen Workshop The nitrogen challenge: building a blueprint for N use efficiency and food security*. 204-205. ISBN: 978-972-8669-56-0.
8. Gabriel, J.L., Zarco, P., Quemada, M. 2014. Ground and airborne level optical sensors: is it possible to estimate maize crop N status? *Proceedings of the 18th Nitrogen Workshop The nitrogen*

challenge: building a blueprint for N use efficiency and food security. 94-95. ISBN: 978-972-8669-56-0.

9. Gabriel, J.L., Quemada, M., Vansteenkiste, J., Diels, J., Vanclooster, M. (2013). Calibration of WAVE in irrigated maize: fallow vs. cover crops. Four decades of progress in monitoring and modeling of processes in the soil-plant-atmosphere system: applications and challenges. 785-793. ISSN: 1878-0296
10. Gabriel, J.L., Almendros, P., Quemada, M. (2012). Do cover crops affect leaching and soil accumulation of salt and mineral N? Proceedings of the 17th Nitrogen Workshop Innovations for sustainable use of nitrogen resources. 62-63. ISBN: 978-1-84170-588-0
11. García-Marco, S., Sanz-Cobeña, A., Gabriel, J.L., Almendros, P., Quemada, M., Vallejo, A. (2012). N₂O emission from a maize cropping system influenced by replacing fallow with cover crops and its subsequent incorporation into the soil. Proceedings of the 17th Nitrogen Workshop Innovations for sustainable use of nitrogen resources. 162-163. ISBN: 978-1-84170-588-0
12. Gabriel, J.L., Quemada, M. (2011). Sustitución de barbechos por cultivos captura: efecto en el balance hídrico y en la lixiviación de nitratos. Estudio de la Zona No Saturada del Suelo. Vol: 10. 562-569. ISBN: 978-84-694-6642-1
13. Gómez-Paccard, C., Velásquez, R., Gabriel, J.L., Quemada, M., Hontoria, C. (2010). Cover crops effects on soil properties related to soil quality and structural stability. Proceeding of the European Congress on Conservation Agriculture. Towards agro-environmental climate and energetic sustainability. 421-426. ISBN: 978-84-491-1038-2
14. Gabriel, J.L., Quemada, M. (2010). Effect of introducing cover crops in a maize cropping system: plant partitioning and N-fertilizer use efficiency. Proceedings of Agro2010 the XIth ESA congress. 709-710. ISBN: 978-2-909613-01-7
15. Ruiz-Ramos, M., Vázquez, N., Gabriel, J.L., Quemada, M. (2009). Identificación de buenas prácticas agrarias para mitigar la contaminación por nitratos en una Zona Vulnerable de La Rioja (España). Estudio de la Zona No Saturada del Suelo. Vol: 9. 562-569. ISBN: 978-84-96736-83-2
16. Ruiz-Ramos, M., Vázquez, N., Gabriel, J.L., Quemada, M. (2009). Identification of good practices to mitigate pollution in a “Nitrate Vulnerable Zone” of Spain. Proceedings of the 16th Nitrogen Workshop Connecting different scales of nitrogen use in agriculture. 561-562. ISBN: 978-88-902754-2-5
17. Ruiz-Ramos, M., Gamboa, E., Gabriel, J.L., Quemada, M. (2009). Calibration and validation of STICS-Vigne for the variety Tempranillo in the region of Rioja (Spain). Proceedings of the 16th Nitrogen Workshop Connecting different scales of nitrogen use in agriculture. 493-494. ISBN: 978-88-902754-2-5

• **Other publications:**

1. Gabriel, J.L., Quemada, M., Vansteenkiste, J., Diels, J., Vanclooster, M. (2013). Calibration of WAVE in irrigated maize: fallow vs. cover crops. *Procedia Environmental Sciences* 19, 785-793.
2. Gabriel, J.L., Quemada, M. (2008). Effect of cover crops on water balance, nitrate leaching and crop productivity. *Italian Journal of Agronomy* 3 (3), 53-54.
3. Ruiz-Ramos, M., Vázquez, N., Gabriel, J.L., Quemada, M. (2008). Impact of cropping system management on groundwater pollution in a “Nitrate Vulnerable Zone” of Spain. *Italian Journal of Agronomy* 3 (3), 121-122.

V.- SOFTWARE DEVELOPMENT

1. Quemada, M., Gomez, F., Gabriel, J.L. (2009). Herramientas didácticas para el manejo del agua y de la materia orgánica en sistemas de cultivo. Reference: 12/025279.6/09. Expedient number: 12/RPTI-002251/2009.

VI.- SERVICE

Short-term scholars

1. University of Florida (Gainesville, USA) with Dr. Kenneth Boote y Dr. Rafael Muñoz-Carpena learning techniques about modelization (DSSAT[®] y WAVE[®]) and sensitivity analysis and models uncertainties. (April 2010-July 2010).
2. CIDA de La Rioja (Centro de Investigación y Desarrollo Agrario) with Dr. Alfonso Pardo. (July 2005-September 2005).

Additional education

1. Working with dynamic models for agriculture. Montpellier (France). September 2010.
2. Vadose Zone Water & solute transport modelling. University of Florida, Gainesville (U.S.A.). June 2010.
3. DSSAT Crop Models and Study of Climate Change Impacts on Agricultural Systems towards Efficient Water and Nitrogen Management. Madrid (Spain). May 2009.
4. Simulation of Agricultural Systems with CropSyst: Productive and Environmental Strategies. Lerida (Spain). July 2006
5. Course of Specialization in Tree Pruning. Universidad Politécnica de Madrid (Spain). 2004/05.
6. Course of ArcGIS I and II. ESRI Spain. 2005.

Scholarships

1. Ministerio de Educación, Cultura y Deporte (Spain). In the Department of Producción Vegetal: Fitotecnia, Escuela Técnica Superior de Ingenieros Agrónomos, Universidad Politécnica de Madrid. November 2004-July 2005.
2. Universidad Politécnica de Madrid (Spain). Colaboration with the AgSystems research group, Escuela Técnica Superior de Ingenieros Agrónomos de Madrid. January-July 2006.
3. AgSystems research group. Project: Agronomic and Economic Evaluation of the Strategies for the Nitrate Leaching Reduction in Corn Crop. September-October 2006.
4. Ministerio de Ciencia e Innovación (Spain). PhD scholarship to work with the AgSystems research group, Escuela Técnica Superior de Ingenieros Agrónomos de Madrid. July 2007-June 2011.

Post-Doctoral expertise

1. From 15/09/2011 to 30/09/2012 employed as PhD at the Universidad Politécnica de Madrid for researching purposes.
2. FSR Incoming Post-doctoral Fellowship of the Université catholique de Louvain (Belgium) co-funded by the Marie Curie Actions of the European Commission. 01/10/2012-30/09/2013.
3. From 01/12/2013 to 30/09/2015 employed as PhD at the Universidad Politécnica de Madrid for researching purposes.
4. Ministerio de Ciencia e Innovación *Juan de la Cierva Incorporación* (Spain) Post-doctoral fellowship. 1/11/2015-28/02/2017.

VI. OTHER ACTIVITIES

Administrative appointments and other scientific involvements

- Member of the European Task Force on Reactive Nitrogen (October-2016).
- Reviewer for 16 JCR journals.