

**FECHA:** 11 de enero de 2024

**NOMBRE Y APELLIDOS:** Esther M GONZALEZ GARCIA

**CUERPO:** CU

**UNIVERSIDAD O CENTRO:** Universidad Pública de Navarra

**RAMA DE CONOCIMIENTO:** Ciencias

**ÁREA DE CONOCIMIENTO:** Fisiología vegetal

**SEXENIOS (RD 1086/89):** 4

**ACTIVIDAD INVESTIGADORA, DE TRANSFERENCIA E INTERCAMBIO DE CONOCIMIENTO:**

My research activity in the last 10 years has been focused on drought stress responses in legume crops. I have 60 publications, 35 of which have been published in the last 10-y period, in the Q1 of JCR in the area of Plant Sciences and related areas. Some of them are in high-impact journals in the field such as Plant Physiology, Journal of Experimental Botany and Plant, Cell and Environment (Total Articles in Publication List: 62, Sum of the Times Cited: 2502, H-index: 29). I regularly attend congresses related to the topics of Plant Physiology and Plant Responses to Abiotic Stress and actively promote the participation of the doctorate students under my supervision in them. During my academic career, I have participated as a researcher in projects granted by regional, national and European funding institutions. In the context of these projects, I have supervised three Ph. D. Theses in the last ten years (Dr. Seminario (2017), Project assistant in Limagrain Iberica., Dr. Castañeda (2021), Freelance on Nutrition and Healthcare Company and Dr. Echeverria, Secondary School Educator) and one international cooperation doctoral thesis is currently running under my supervision (Y. Santana).

**Publications/books**

- 2022 Furlan AL, Gonzalez EM, Choudhury SR, Signorelli S. **Editorial: Drought stress in legumes** Frontiers in Plant Science 13: 1026157. <https://doi.org/10.3389/fpls.2022.1026157>
- 2021 Echeverria A, Larrainzar E, Li W, Watanabe Y, Sato M, Tran CD, Moler JA, Hirai MY, Sawada Y, Tran L-SP, Gonzalez EM. **Medicago sativa and Medicago truncatula show contrasting root metabolic responses to drought** Frontiers in Plant Science 12: 652143. <https://doi.org/10.3389/fpls.2021.652143>
- 2021 Echeverria A, Gonzalez EM. **Root system of Medicago sativa and Medicago truncatula: drought effects on carbon metabolism** Plant and Soil 463, 249-263. <https://doi.org/10.1007/s11104-021-04912-1>
- 2021 Castañeda V, González EM **Strategies to apply water-deficit stress: Similarities and disparities at the whole plant metabolism level in Medicago truncatula** International Journal of Molecular Sciences 22, 2813. <https://doi.org/10.3390/ijms22062813>
- 2021 Castañeda V, Gonzalez EM, Wienkoop S. **Phloem sap proteins are part of a core stress responsive proteome involved in drought stress adjustment.** Frontiers in Plant Science 12, 625224. <https://doi.org/10.3389/fpls.2021.625224>

- 2021 Echeverria A, Ariz I, Moreno J, Peralta J, Gonzalez EM. **Learning Plant Biodiversity in Nature: The Use of the Citizen–Science Platform iNaturalist as a Collaborative Tool in Secondary Education.** Sustainability 13, 735. <https://doi.org/10.3390/su13020735>
- 2020 González E.M., Wienkoop S., Staudinger C., Lyon D., Gil-Quintana E. *Medicago truncatula*: local response of the root nodule proteome to drought stress En: The Model Legume *Medicago truncatula* Ed. Frans J. de Bruijn. **John Wiley & Sons**, Inc. c. p. 1096-1101. ISBN-13: 978-1119409168.
- 2019 Castañeda, V, de la Peña, M, Azcárate, L, Aranjuelo, A y Gonzalez EM. **Functional analysis of the taproot and fibrous roots of *Medicago truncatula*: Sucrose and proline catabolism primary response to water deficit** Agricultural Water Management 216, 473-486.
- 2018 Castañeda V., Gil-Quintana E., Echeverria A., González E.M. Legume nitrogen utilization under drought stress. En: Engineering Nitrogen utilization in crop plants. Eds. Shrawat A, Zayed A, Lightfoot DA. **Springer International Publishing**. Switzerland p-173-184. ISBN: 978-3-319-92957-6.
- 2017 Seminario A; Song, L; Zulet, A, Nguyen HT, González EM and Larrainzar E. **Drought Stress Causes a Reduction in the Biosynthesis of Ascorbic Acid in Soybean Plants.** Frontiers in Plant Science 8.
2016. Staudinger C, Mehmeti-Tershani V, Gil-Quintana E, Gonzalez EM, Hofhansl F, Bachmann G, Wienkoop S. **Evidence for a rhizobia-induced drought stress response strategy in *Medicago truncatula*.** Journal of Proteomics 136:202-213
2015. Gil-Quintana E, Lyon D, Staudinger C, Wienkoop S and Gonzalez EM ***Medicago truncatula* and *Glycine max*: Different Drought Tolerance and Similar Local Response of the Root Nodule Proteome.** J. Proteome Research 14: 5240-5251
2014. Larrainzar E., Molenaar J.A., Wienkoop S., Gil-Quintana E., Alibert B., Limami A.M., Arrese-Igor C. and González E.M. **Drought stress provokes the down-regulation of methionine and ethylene biosynthesis pathways in *Medicago truncatula* roots and nodules** Plant, Cell and Environment 37, 2051–2063
2013. Riely B.K., Larrainzar E., Haney C.H., Mun J.-H., Gil-Quintana E., González E.M., Yu H.-J., Tricoli D., Ehrhardt D.W., Long S-R, Cook D.R. **Development of tools for the biochemical characterization of the symbiotic receptor-like kinase DMI2.** Molecular Plant Microbe Interactions 26: 216-226.

### Research projects and grants

- 2022-2024 Re-evaluación de la aplicación de fertilizantes nitrogenados orgánicos e inorgánicos sobre la fijación simbiótica de nitrógeno en leguminosas: agricultura sostenible y economía circular (NitroSym). **Proyectos de Transición Ecológica y Transición Digital** (2021) IP UPNA, Estibaliz Larrainzar
- 2021-2024 Estudio del uso de productos bioestimulantes de origen metabólico o microbiano para mejorar la eficiencia en el uso del nitrógeno en especies vegetales de interés agronómico. **Proyectos de I+D Colaborativos del Departamento de Universidades, innovación y transformación digital del Gobierno de Navarra.** (2022) IP UPNA, Idoia Ariz
- 2020-2021 Alfalfa de secano en Bardenas Reales: aislamiento de bacterias simbióticas en condiciones semiáridas **Comunidad de Bardenas Reales.** 11.700 €. IP UPNA, EM González.
- 2020-2021 Análisis de la interacción de BlueN en soja en condiciones controladas de cultivo hidropónico con sustrato inerte **SYMBORG Corporate S.L.** 9067 €. IP-UPNA, EM González.
- 2019-2022 Horta 0,0/2019 Diseño y manejo de moduladores del metabolismo nitrogenado vegetal para la reducción del contenido de nitrato en hortalizas **Departamento de Desarrollo Económico Gobierno de Navarra.** 112.727,01 IP-UPNA, I Ariz.
- 2017 FCN 7442/2016 Papel de la raíz en la tolerancia a sequía en leguminosas forrajeras. **Fundación Caja Navarra/UPNA.** 12000 euros. IP UPNA, EM González.

- 2012-2015 AGL 2011-23738/AGR. Identificación de señales locales y sistémicas en plantas de *Medicago truncatula* expuestas a sequía: regulación a nivel de pelos absorbentes y haces vasculares. **Ministerio Economía e Innovación. Plan Nacional 2011.** Universidad Pública de Navarra. 48400 euros. IP UPNA, EM González.
- 2011-2014 FP7People 2009 IOF PIOF-2009-253141. Characterization of Nod factor receptor LYK3 protein-interaction networks during early symbiotic signaling in *Medicago truncatula*. **European Comission. Support for training and career development of researchers (Marie Curie) International Outgoing Fellowships (IOF).** EM. González. IP-UPNA/ Douglas Cook (U. Davis). 234.337 euros.

#### ACTIVIDAD DOCENTE:

My main teaching activity is carried out at the **Higher Technical School of Agricultural Engineering and Biociences (ETSIAB)**, where I serve as the person in charge of the Bachelor's degree in **Sciences** and the Master's degree in **Environmental Agrobiology**. My undergraduate teaching focuses on the first-year Biology course in various programs at ETSIAB, not only in the Sciences degree but also in the Biotechnology and Data Science degrees. Regarding master's degree teaching, I am involved in the course "Agronomic-Physiological Factors of Abiotic Stress in Plants." This is a theme that I primarily develop as a professor in the Environmental Agrobiology doctoral program, where I have supervised 7 doctoral theses and currently have one more in progress.

In recent years, I have been engaged in the management of the **Faculty of Humanities and Social Sciences**, where I am responsible for the Biology and Geology specialty in the **Secondary Education Teacher Training Master's program**. Within this master's program, my teaching is focused on the specialty course "Complements of Biology," and I also supervise final research projects for the master's degree. Over the past years, I have actively participated in various educational innovation projects and activities aimed at enhancing teaching and its quality within the framework of the European Higher Education Area.

#### ACTIVIDADES DE LIDERAZGO (PARA CU):

##### Institutional responsibilities

- Public University of Navarra **first advisor of Biology** for student admission exams (2010- )
- Member of the **panel for student admission of the Public University of Navarra** (2010- )
- **Assistant Director** of the Department of Environmental Sciences (2007-2012).
- **Elected representative for the area of Natural Science and Biomedicine of the Research Commission** of the Public University of Navarra (2014- ).
- **Deputy Head of the Undergraduate Degree in Science.** Agricultural Engineering School (2018-)
- **Deputy Head of the Master Degree in Environmental Agrobiology.** Agricultural Engineering School. UPNA and Basque Country University. (2019-)
- **Biology Coordinator of the Master Degree in Secondary Education Teaching.** Faculty of Human, Social and Educational Sciences (2017-2019)
- **Deputy Head of the Consortium Synthetic Biology- National Centre for Food Technology and Safety.** Agricultural Engineering School. (2020-)