

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	Francisca		
Family name	Suárez Estrella		
Gender (*)	Female	Birth date (dd/mm/yyyy)	12/07/1974
Social Security, Passport, ID number	45583011R		
e-mail	fsuarez@ual.es	URL Web	https://www.ual.es/persona/525353565148494982
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-2549947X		

(*) *Mandatory*

A.1. Current position

Position	Associate Professor		
Initial date	1/08/2018		
Institution	University of Almería		
Department/Center	Biology and Geology	<u>CIAMBITAL</u>	
Country	Almería	Teleph. number	950015027
Key words			

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
1998-2002	Predoctoral training contract/UAL/Spain
2002-2012	Assistant Professor (part-time)/UAL/Spain
2004-2008	Microbiology area manager (part-time)/LAB SL (private company)/Spain
2008-2014	Microbiology area manager (part-time)/Savia Biotech SA (private company)/Spain
2015-2017	Microbiology consultant (part-time)/Savia Plant SL (private company)/Spain
2013-2014	Contract research staff (part-time)/UAL/Spain
2015-2017	Assistant Professor (part-time)/UAL/Spain
2017-2018	Assistant Professor Doctor (full-time)/UAL/Spain
2018 (indefinite character)	Associate Professor/UAL/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduate in Biological Sciences	University of Granada	1997
PhD in Biological Sciences	University of Almería	2001

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

Since 2002, I have taught **Microbiology and other related subjects** in the Degrees of "Chemical Sciences", "Nursery", "Environmental Sciences", "Chemical Engineering", "Industrial Technical Engineering", specifically in agri-food, as well as in "Agronomic Engineering". I teach in the official Master's degrees in "Industrial and Agri-Food Biotechnology" and "Bioeconomy", both of them organized by the University of Almería. Additionally, since 2009, I am part of the teaching team of the Master in "Management, treatment and recovery of waste", organized by the Miguel Hernández University (Orihuela, Alicante). Since 2016, my main teaching activity is focussed on the **Biotechnology Degree of**



the University of Almería, which I currently coordinate. My research activity has been framed in the lines developed by the research group BIO-175 of the University of Almería, which I am a member. The lines of research that globally describe my trajectory are **(1) the microbiology of the composting process, (2) biological control and (3) suppressive capacity of the compost**. Some of the most relevant merits related to my activity include **co-authoring more than 60 articles published in international journals** with an impact index, **a dozen of chapters of scientific interest, 2 books**, the presentation of a hundred **communications to national and international congresses**, the co-direction of dozens of research works, among them the direction of **3 Doctoral Thesis, defended between 2010 and 2021**, and 2 others currently in process. Until 2021, I have participated in about **sixteen projects and research contracts of a national and international nature**, including **1 FEDER projects, 5 Knowledge Generation Projects (CICYT), 5 European projects (RECOVER, FORBIOPLAST, AGRIMAX, SABANA and LIFE-REGROW)**, a project funded by the **Public Company of Agrarian and Fishing Development (EPDAP, Andalusia)**, one project financed by the **Andalusian Technology Corporation (CTA)**, one project recently financed by the **Andalusian Government (AGROPURITHEC)**, and 2 projects in **collaboration with several companies in the agri-food sector (RETOS)**. I have been also **PI responsible for research contracts with companies in the biotechnology sector (BIORIZON BIOTECH)** as well as with others focused on optimization of the industrial scale composting process (Reciclados Almerienses S.A.; AZCATEC Tecnología e Ingeniería). Recently, I have been **PI of a project financed with FEDER funds (UAL2020-BIO-B1964) since 2021**, which aims to optimize the composting process through the pre-adaptation of raw materials using microbial inoculants. In addition, I have been one of the **two PIs of a Project funded by the University of Almeria (PPUENTE2022/005)** aimed at the preliminary physico-chemical-biological characterization of compost extracts, as well as of a **collaborative project of the National Program of Ecological and Digital Transition (TED2021-129481B-C32)**, related to the use of biotechnological tools for circular economy and sustainable development. In terms of diffusion, I have participated in several **webinars** addressed to the agro-biotechnological productive sector as well as in activities addressed to the general public, such as **The European Researchers' Night, the Week of Science and Pint of Science**. I am an **active member of the Spanish Society of Microbiology Spanish from 1999 and Spanish Composting Network (REC) form 2005**. I would like to highlight my **collaboration in the organizing committees** of the 1st Conference of the REC and of the XXII Congress of the Spanish Society of Microbiology held in Almería in 2005 and 2009, respectively. Finally, I stands out my role as **head of the microbiology area in two biotechnology-based companies (LAB S.L., Savia Biotech S.A. and Savia Plant S.L.)** during the period 2004-2017. During this period I combined my research and teaching tasks at the University of Almeria with other activities in the private sector, which allowed me to apply my knowledge and skills in agrobiotechnology from another more industrial perspective.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

1. Jiménez, R., **Suárez-Estrella, F.***, Jurado, M.M., López-González, J.A., Estrella-González, M.J., Toribio, A.J., Martínez-Gallardo, M.R., Lerma-Moliz, R., López, M.J. **2023**. Sustainable approach to the control of airborne phytopathogenic fungi by application of compost extracts. *Waste Management*, 171, 143-154. ***Corresponding Author: Suárez-Estrella, F. Position IP: 2/9**.
2. Martínez-Gallardo, M.R., Estrella-González, M.J., **Suárez-Estrella, F.***, López-González, J.A., Jurado, M.M., Toribio, A.J., López, M.J. **2023**. Effect of Upstream Bioactivation of Plant Residues to Accelerate the Composting Process and Improve Product Quality. *Agronomy*, 13, 1638. ***Corresponding Author: Suárez-Estrella, F. Position IP: 3/7**.
3. Jurado Macarena M., **Suárez-Estrella F.**, Toribio, A.J., Martínez-Gallardo, M.R., Estrella-González, M.J., López-González, J.A., López, M.J. **2023**. Biopriming of cucumber seeds using actinobacterial formulas as a novel protection strategy against *Botrytis cinerea*. *Frontiers in Sustainable Food Systems*, Vol (7). **Position IP: 2/7**.
4. **Suárez-Estrella, F.***, Jurado, M.M., López-González, J.A., Toribio, A., Martínez-Gallardo, M.R., Estrella-González, M.J., López, M.J. **2023**. Seed priming by application of *Microbacterium* spp. strains for control of *Botrytis cinerea* and growth promotion of lettuce

- plants. *Scientia Horticulturae*, 313, 111901. 4-4238. ***Corresponding Author: Suárez-Estrella, F. Position IP: 1/7.**
5. Lerma-Moliz, R., López-González, J.A., **Suárez-Estrella, F.**, Martínez-Gallardo, M.R., Jurado, M.M., Estrella-González, M.J., Toribio, A.J., Jiménez, R., López, M.J. **2023.** Mitigation of phytotoxic effect of compost by application of optimized aqueous extraction protocols. *Science of The Total Environment*, 873, 162288. **Position IP: 3/9.**
 6. Toribio, A.J.; **Suárez-Estrella, F.**; Jurado, M.M.; López-González, J.A.; Martínez-Gallardo, M.R.; López, M.J. 2022. Design and validation of cyanobacteria-rhizobacteria consortia for tomato seedlings growth promotion. *Scientific Reports*, 12(1), 1-15. **Position IP: 2/6.**
 7. López, M.J., Jurado, M.M., López-González, J.A., Estrella-González, M.J., Martínez-Gallardo, M.R., Toribio, A., **Suárez-Estrella*, F.** (2021). Characterization of thermophilic lignocellulolytic microorganisms in composting. *Frontiers in Microbiology*. 12, 697480. ***Corresponding Author: Suárez-Estrella, F. Position IP: 7/7.**
 8. Toribio, A. J., Jurado, M. M., **Suárez-Estrella, F.***, López, M. J., López-González, J. A., Moreno, J. (2021). Seed biopriming with cyanobacterial extracts as an eco-friendly strategy to control damping off caused by *Pythium ultimum* in seedbeds. *Microbiological Research*, 248. ***Corresponding Author: Suárez-Estrella, F. Position IP: 3/6.**
 9. Estrella-González, M.J., **Suárez-Estrella*, F.**, Jurado, M.M., (...), Moreno, J. (2020). Uncovering new indicators to predict stability, maturity and biodiversity of compost on an industrial scale. *Bioresource Technology*. 313,123557. ***Corresponding Author: Suárez-Estrella, F. Position IP: 2/7.**
 10. Estrella-González, M.J. Jurado, M.M., **Suárez-Estrella*, F.**, (...), Moreno, J. (2019). Enzymatic profiles associated with the evolution of the lignocellulosic fraction during industrial-scale composting of anthropogenic waste: Comparative analysis. *Journal of Environmental Management* 248, 109312. ***Corresponding Author: Suárez-Estrella, F. Position IP: 3/6**

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

- Lerma-Moliz, R., **Suárez-Estrella F.**, López-González, J.A., Jurado, M.M., Toribio, A.J., Martínez-Gallardo, M.R., Estrella-González, M.J., Jiménez, R., Pérez, M., López, M.J. **2022.** Carácter biofertilizante de extractos acuosos de compost obtenidos a partir de residuos agroalimentarios. **VII Jornadas de la Red Española de Compostaje**, Salamanca. Octubre 2022. Póster.
- Jiménez, R., **Suárez-Estrella, F.**, Jurado, M.M., López-González, J.A., Toribio, A.J., Martínez-Gallardo, M.R., Estrella-González, M.J., Lerma-Moliz, R., Sánchez-Cánovas, M.M., López, M.J. **2022.** Aplicación de extractos acuosos de compost como estrategia sostenible para el control de hongos fitopatógenos foliares en agricultura intensiva. **VII Jornadas de la Red Española de Compostaje**, Salamanca. Octubre 2022. Oral Presentation.
- Angulo, M., Martínez-Gallardo, M.R., Jurado, M.M., Jiménez, R., Lerma-Moliz, R., **Suárez-Estrella, F.** **2022.** Extractos acuosos de compost aplicados mediante la técnica de biopriming como herramienta agrobiotecnológica de interés. **XI Simposio de Investigación en Ciencias Experimentales, Universidad de Almería**. Noviembre 2022. Póster.
- Pérez, M., Martínez-Gallardo, M.R., **Suárez-Estrella F.** **2022.** Caracterización de extractos acuosos de compost de alpeorrujo y su uso potencial en biofertilización y bioestimulación. **XI Simposio de Investigación en Ciencias Experimentales, Universidad de Almería**. Noviembre 2022.
- Lerma-Moliz, R., **Suárez-Estrella F.**, López-González, J.A., Jurado, M.M., Toribio, A.J., Martínez-Gallardo, M.R., Estrella-González, M.J., López, M.J. **2023.** Biofertilising and oxidative stress protective effect of aqueous compost extracts on cucumber (*Cucumis sativus*) and lettuce (*Lactuca sativa*) crops. **XVIII International RAMIRAN Conference**. Cambridge. Septiembre 2023. Póster.
- Jiménez, R., **Suárez-Estrella F.**, Lerma-Moliz, R., López-González, J.A., Jurado, M.M., Estrella-González, M.J., Toribio, A.J., Martínez-Gallardo, M.R., Salinas, J., Carpena, V., López, M.J. **2023.** Application of compost extracts as a sustainable practice for the control of airborne fungal pathogens. **XVII International RAMIRAN Conference**. Cambridge. Septiembre 2023. Oral Presentation.



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

AGROPURITECH (PP.PEI.IDF2023030.001). Desarrollo de técnicas de tratamiento y valorización agrícola del purín de porcino intensivo en el este de Andalucía. Acción de Proyectos Estratégicos y Demanda Institucional. IFAPA. IP: M^a Luz Segura Pérez. 1.199.009,60€. Date: 2023-2027. **Participation: Principal Researcher**

TED2021-129481B-C32. Uso del microbioma procedente de balsas abandonadas de alpechin como herramienta biotecnológica para la economía circular y el desarrollo sostenible (OLIFE_RELIFE). Proyectos de transición ecológica y digital 2021. Ministerio de Ciencia e Innovación. IP: Raul Moral Herrero. Amount: 97.900 €. Date: 2023-2024. **Participation: Principal Researcher (IP-UAL)**

PPUENTE2022/005. Estudio de la capacidad supresiva de extractos de compost mediante estudios de biodiversidad funcional y de indicadores FQB. Proyectos Puente del Plan Propio de Investigación y Transferencia 2022. Universidad de Almería. Date: 2022-2023. Amount: 10.000 €. **Participation: Principal Researcher**

FEDER-UAL2020-BIO-B1964. Bioactivación de residuos lignocelulósicos en el entorno agrícola almeriense como tratamiento previo al proceso de compostaje (COMP-ACTIVIO). Junta de Andalucía (Spain). Programa Operativo FEDER Andalucía 2014-2020, Convocatoria 2020. Universidad de Almería. Date: 2021-2023. Amount: 30.000 €. **Participation: Principal Researcher**

BBI-2019-SO2-R3. Development of innovative biotic symbiosis for plastic biodegradation and synthesis to solve their end-of-life challenges in the agriculture and food industries (RECOVER). European Commission. H2020 Program. Coordinator: María J. López López (Universidad de Almería). Date: 2020-2024. Amount: 5.800.000 €. **Participation: Researcher.**

LIFE16 ENV/ES/000331. Reclamation of olive oil waste abandoned lagoons using bio-recovering strategies in a circular economy scenario (LIFE+REGROW). EU funds. Announcement Life 2016. Coordinator: Ayuntamiento de Mora, Toledo (Spain). IP (UAL): María José López López. Date: 2017-2021. Amount: 1.480.627 €. **Participation: Researcher.**

GA 1232273. Agri and food waste valorisation co-ops based on flexible multi-feedstocks biorefinery processing technologies for new high added value applications (AGRIMAX). European Commission. H2020 Program. IP (UAL): María José López López. Date: 2016-2020. Amount: 14.957.395 €. **Participation: Researcher.**

C.4. Contracts, technological or transfer merits

Contrato AZCATEC, TECNOLOGÍA E INGENIERÍA S.L. Mejoras tecnológicas para el aprovechamiento del fósforo de los fertilizantes agrícolas con base en la economía circular: un paso adelante en el Desarrollo Sostenible de Andalucía. **2023**. 56.371 €. **Participation: Principal Researcher**

Contrato FERTINAGRO SUR. Mejoras tecnológicas para el aprovechamiento del fósforo de los fertilizantes agrícolas con base en la economía circular: un paso adelante en el Desarrollo Sostenible de Andalucía. **2023**. 136.367 €. **Participation: Researcher**

Contract 401619. Optimisation of the composting process in an industrial-scale production plant. **2020-21**. UAL-Reciclado Almerienses SL. 13.200 €. **Participation: Principal Researcher**

Contract INNOGLOBAL. Isolation of novel extremophilic plant growth-promoting and antagonistic bacteria for use as biofertilisers and biological control agents. **2018-2019**. UAL-Biorizon Biotech S.L. 24.000 €. **Participation: Principal Researcher**

Procedure for obtaining "Hidrocompost", organic liquid fertilizer rich in humic substances from compost of vegetable origin. **Patent ES2286917B1**. Inventors: Moreno, J., **Suárez-Estrella, F.**, López, M.J., Vargas-García, M.C., Moreno, J. Fecha: 2008. Entity: Universidad de Almería.