

## CURRICULUM VITAE ABREVIADO (CVA)

### Part A. PERSONAL INFORMATION

First name	Ignacio		
Family name	Buesa Pueyo		
Gender (*)	Male	Birth date	18/07/1984
Social Security, Passport, ID number	461062799839	AAJ927845	29207157D
e-mail	ibuesa@csic.es	<a href="http://URL Web/Ignacio-Buesa">URL Web/Ignacio-Buesa</a>	
Open Researcher and Contributor ID (ORCID) (*)	<a href="http://0000-0003-2962-2148">0000-0003-2962-2148</a>		

#### A.1. Current position

Position	Post-doctoral researcher (PLAN GENT-CDEIGENT 2023)		
Initial date	Working at CIDE since 01/11/2023 and for 4 to 6 years.		
Institution	Desertification Research Center (CIDE, CSIC-UV-GVA)		
Department/Center	Water and crops/Ecology and global change		
Country	Spain	Teleph. number	+34 650578152
Key words	Agronomy, Irrigation, Plant physiology, Viticulture.		

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

Period	Position/Institution/Country/Interruption cause
01.05.2021-20.08.2023	Post-doctoral researcher and teacher (Juan de la Cierva-Formación)/ paternity leave (5 months)
30.06.2020-30.04.2021	Post-doctoral contract "Margalida Comas"/Universitat de les Illes Balears/Spain
01.10.2019-29.06.2020	Research Technician/Consejo Superior de Investigaciones Científicas (CSIC)/Spain/Paternity leave (4 months)
01.10.2018-30.09.2019	Postdoctoral contract/ Institut National de la Recherche Agronomique/France
01.04.2017-30.09.2018	Research Technician/Centro Edafología y Biología Aplicada del Segura (CSIC)/Spain
03.12.2012-02.12.2016	Pre-doctoral fellow (FPI-INIA)/Instituto Valenciano de Investigaciones Agrarias/Spain

#### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Programa de Doctorado en Ingeniería Hidráulica y Medio Ambiente	Universitat Politècnica de València	2018
Máster Universitario en Ingeniería Hidráulica y Medio Ambiente	Universitat Politècnica de València	2014
Ingeniero Agrónomo	Universitat Politècnica de València	2009

### Part B. CV SUMMARY

My contribution to the generation of knowledge has been focused on **the study of the effects that agronomic practices in combination with plant material (cultivars and rootstocks) have on water-use efficiency, water relations and ecophysiology of woody crops, especially in vineyards**. During my PhD, I assessed several viticultural practices to cope with water and heat stress. Some of these practices proved to be very useful, such as the late pruning technique, regulated deficit irrigation strategies, canopy architecture modifications, the use of shading-nets and soil management practices, and are being implemented at commercial scale. On the other hand, experiments addressing source-sink relationships or forcing bud growth were not as promising, but provided new insights into grapevine physiological responses and grape ripening processes. All these experiments have been carried out in the framework of **competitive projects** in which I have been involved as a member of the working team, as researcher and **principal researcher of two** of them. Furthermore, many of these projects have been developed in collaboration with foreign institutions. The latter allowed me to generate new ideas and hypotheses that led to projects during my post-doctoral stage.



Currently, within the framework of my **CDEIGENT 2023 contract**, I have to seek funding to conduct my research line. In the meantime, I continue to actively participate in the ongoing projects in which I am involved. I am also recently involved in an international project (DIVERGRAPE) with Dr. D.S. Intrigliolo (CIDE). This research is carried out in cooperation with the nursery sector and the “Institut National de la Recherche Agronomique” (INRA), in the Group I was a postdoc with. The preliminary results of the experiments with rootstocks showed that the use of new rootstocks can improve vine performance under limiting growing conditions, by modifying the efficiency in the use of water and nutritional resources and its tolerance to water and saline stress. These findings help to improve the environmental sustainability and profitability of Mediterranean viticulture. They are also expected to provide the basis for plant breeding programmes.

Furthermore, I am leading the writing of papers based on the trials I collaborated on during my last postdoctoral contracts, including the 8-month research-stay at the Max-Planck Institute of Molecular Plant Physiology (José Castillejo-Grant). I have co-directed two Bachelor's thesis and a Master's thesis and I am co-directing one more. I am currently co-directing a PhD thesis that addresses the physiological and hydraulic characterization of grapevine cultivar-rootstock combinations. Moreover, I have reviewed scientific papers in 14 first-quartile journals and I was Topic Editor in the journal *Agronomy*.

In brief, during my research career I have worked in five scientific institutions and undertaken research-stays in other four, and closely linked to the private sector and public transfer services. My research line is focused on the study of the modification of environmental factors (field management practices) on the phenotypic response of crops (cultivars, clones and rootstocks). Always **seeking to unravel the physiological processes underlying these agronomic responses, and thus generating a mechanistic understanding of plant biological systems**. The overall purpose of my line of research is to advance in the **design of sustainable and climate-change-resilient agricultural systems in Mediterranean-like climate regions**. To this end, I have been acquiring the technical-scientific capabilities, scientific responsibilities, international collaborations and leadership skills described in my *curriculum vitae*. As a result, I have participated in the presentation of 63 works in national or international congresses and on 45 publications in national and international scientific books and journals. I am first author on 50% of the 24 first-quartile papers, and on 55% of the remaining 23 (Index h = 11 (WOS), 11 (Scopus) and 14 (Google Scholar); citing articles = 384 (WOS), 403 (Scopus) and 612 (Google Scholar).

## Part C. RELEVANT MERITS

### C.1. Publications

1. **Buesa, I.** (CA), Torres, N., Tortosa, I., Marín, D., Villa-Llop, A., Douthe, C., Santesteban, L.G., Medrano, H. and Escalona, J.M. Conventional and newly bred rootstock effects on the ecophysiological response of *Vitis vinifera* L. cv. Tempranillo. *Agricultural Water Management* 2023, 289, 108560. [DOI: 10.1016/j.agwat.2023.108560](https://doi.org/10.1016/j.agwat.2023.108560).
2. **Buesa, I.** (CA), Escalona, J.M., Romero-Azorín, P. and Intrigliolo D.S. (2022). Chapter 6: Vineyard water balance and use. Improving sustainable viticulture and winemaking practices. Editors: Costa, M., Catarino, S., Escalona, J.M. and Comuzzo, P. Elsevier Science & Technology. ISBN 9780323851503. [DOI: 10.1016/B978-0-323-85150-3.00012-8](https://doi.org/10.1016/B978-0-323-85150-3.00012-8)
3. **Buesa I.** (CA), Pérez-Pérez J.G., Visconti F., Strah R., Intrigliolo D.S., Gruden K., Pompe-Novak M., de Paz J.M. (2022). Physiological and Transcriptional Responses to Saline Irrigation of Young ‘Tempranillo’ Vines Grafted Onto Different Rootstocks. *Frontiers in plant science* 13. [DOI: 10.3389/fpls.2022.866053](https://doi.org/10.3389/fpls.2022.866053).
4. **Buesa, I.** (CA), Escalona, J.M., Tortosa, I., Marín, D., Loidi, M., Santesteban, L.G., Douthe, C. and Medrano, H. (2021). Intracultivar genetic diversity in grapevine: Water use efficiency variability within cv. Grenache. *Physiologia Plantarum* 173(4): [DOI: 10.1111/ppl.13573](https://doi.org/10.1111/ppl.13573).
5. **Buesa, I.** (CA), Mirás-Avalos, J.M., De Paz, J.M., Visconti, F., Sanz, F., Yeves, A., Guerra, D. and Intrigliolo, D.S. (2021). Soil management in semi-arid vineyards: Combined effects of organic mulching and no-tillage under different water regimes. *European Journal of Agronomy* 123: 126198. [DOI: 10.1016/j.eja.2020.126198](https://doi.org/10.1016/j.eja.2020.126198).
6. **Buesa, I.** (CA), Yeves, A., Sanz, F., Chirivella, C. and Intrigliolo, D.S. (2021). Effect of delaying winter pruning of Bobal and Tempranillo grapevines on vine performance, grape and wine composition. *Australian Journal of Grape and Wine Research* 27(1): 94-105. [DOI: 10.1111/ajgw.12467](https://doi.org/10.1111/ajgw.12467).
7. **Buesa, I.** (CA), Ballester, C., Mirás-Avalos, J.M. and Intrigliolo, D.S. (2020). Effects of leaning grapevine canopy to the West on water use efficiency and yield under Mediterranean conditions. *Agricultural and Forest Meteorology* 295: 108166. [DOI: 10.1016/j.agrformet.2020.108166](https://doi.org/10.1016/j.agrformet.2020.108166).



8. **Buesa, I.** (CA), Mirás-Avalos, J.M. and Intrigliolo, D.S. (2020). Row orientation effects on potted-vines performance and water-use efficiency. *Agricultural and Forest Meteorology* 294: 108148. DOI: [10.1016/j.agrformet.2020.108148](https://doi.org/10.1016/j.agrformet.2020.108148).
9. **Buesa, I.** (CA), Caccavello, G., Basile, B., Merli, M.C., Poni, S., Chirivella, C. and Intrigliolo, D.S. (2019). Delaying berry ripening of Bobal and Tempranillo grapevines by late leaf removal in a semi-arid and temperate-warm climate under different water regimes. *Australian Journal of Grape and Wine Research* 25(1): 70-82. DOI: [10.1111/ajgw.12368](https://doi.org/10.1111/ajgw.12368).
10. **Buesa, I.** (CA), Pérez, D., Castel, J., Intrigliolo, D.S. and Castel, J.R. (2017). Effect of deficit irrigation on vine performance and grape composition of *Vitis vinifera* L. cv. Muscat of Alexandria. *Australian Journal of Grape and Wine Research* 23(2): 251-259. DOI: [10.1111/ajgw.12280](https://doi.org/10.1111/ajgw.12280).

## C.2. Congress

1. Escalona, J.M., **Buesa, I.\***, Santesteban, G., Torres, N., Tortosa, I., Bota, I. and Medrano, H. Looking for genetic resources for a more sustainable viticulture in a climate change context. Xth International Symposium on Irrigation of Horticultural Crops (ISHS). 29/01/2023 – 02/02/2023. Stellenbosch, South African Republic. (\*Oral presenter).
2. **Buesa, I.\***, Escalona, J.M., Sabater, A., Intrigliolo, D.S. and Mirás-Avalos, J.M. Validation of a vineyard water balance model for two varieties in Mallorca (Spain). Xth International Symposium on Irrigation of Horticultural Crops (ISHS). 29/01/2023 – 02/02/2023. Stellenbosch, South African Republic. (Poster + \*flash talk).
3. Pérez-Álvarez, E.P., Intrigliolo, D.S., Martínez-Moreno, A., Escalona, J.M. and **Buesa, I.\*** Ecophysiological performance of *Vitis* rootstocks under water stress. 14th International Terroir congress (TerClim). 03/07/2022 - 08/07/2022. Bordeaux, Aquitaine, France. (\*Oral presenter).
4. **Buesa, I.\***, Baraldi, G., Roselló, M., Medrano, H. and Escalona, J. M. *Vitis* rootstocks responses to water availability: water relations and vine performance. XV Portuguese-spanish symposium on plant water relations. 26/01/2022 - 28/01/2022. Lisbon, Portugal. (\*Oral presenter).
5. **Buesa, I.\***, Escalona, J.M.; Tortosa I.; Marín, D.; Santesteban, L.G.; Douthe, C. and Medrano, H. Rootstock effects on physiological response of Tempranillo cultivar. XI International Symposium on Grapevine Physiology and Biotechnology. 31/10/2021 - 05/11/2021. Stellenbosch, South African Republic. (\*Oral presenter).
6. **Buesa, I.\***, Martínez-Gimeno, M.A., Badal, E., Bonet, L., Pérez-Pérez, J.G., Intrigliolo, D.S. and de Paz, J.M. Physiological responses of Tempranillo onto different rootstocks under salinity and water stress conditions. XVI Spanish-Portuguese Congress of Plant Physiology. 26/06/2019 - 28/06/2019. Pamplona, Foral Community of Navarre, Spain. (Poster + \*flash talk).
7. Intrigliolo, D.S.\*, Chirivella, C., Martínez Moreno, A., Sanz, F., Yeves, A. and **Buesa, I.** Effects of shading and bud forcing on vine water relations, yield and grape composition of Macabeo grapevines for Cava production. International Congress on Grapevine and Wine Sciences. 07/11/2018 - 09/11/2018. Logroño, La Rioja, Spain. (\*Oral presenter).
8. **Buesa, I.\***, Chirivella, C., Yeves, A., Sanz, F., Martínez-Moreno, A., and Intrigliolo, D.S. Techniques for delaying berry ripening adapting red grape and wine composition to global warming. 05/10/2017 - 10/10/2017. GiESCO 20th International Meeting Mendoza, Argentina. (Poster).
9. **Buesa, I.\***, Caccavello, G., Merli, M.C., Poni, S. and Intrigliolo, D.S. East-west vineyard trellis system orientation improves water use efficiency and productivity of potted grapevines. X International Symposium on Grapevine Physiology and Biotechnology (ISHS). 13/06/2016 - 18/06/2016. Verona, Italy. (\*Oral presenter).
10. **Buesa, I.\***, Caccavello, G., Merli, M.C., Puerto, H., Ruiz-Canales, H., Molina, J.M. and Intrigliolo, D.S. Vineyard trellis system orientation and inclination effects on water use efficiency and productivity of potted and field-grown grapevines. VIII International Symposium on Irrigation of Horticultural Crops (ISHS). 08/06/2015 - 11/06/2015. Lerida, Catalonia, Spain. (\*Oral presenter).

## C.3. Research projects

1. PCI2022-135095-2. DIVERGRAPE: Understanding and quantifying the contribution of genetic components to the diversity of grapevine environmental response. SusCrop-ERA-NET. D.S. Intrigliolo (CIDE, CSIC-UV-GVA). 242.000€. (Working team).
2. PID2021-123305OB-C31. UPGRAPE: Understanding grapevine phenotype responses to drought through an ecophysiological and agroecological approach. Ministerio de Ciencia e Innovación y Unión Europea. D.S. Intrigliolo (CIDE, CSIC-UV-GVA). 245.000€. (Working team).
3. PDC2021-121210-C21. WANUGRAPE4.0: Decision support tool for selecting the rootstock material and the irrigation and nitrogen regimes in grapevine for wine production. Ministerio de



- Ciencia, Innovación: Prueba de concepto. D.S. Intrigliolo. Centro de Investigaciones sobre Desertificación, (CIDE). 01/12/2021 - 30/11/2023. 88.550 €. (Researcher – WP1. Modelling vineyard water balance. Task 1.4. Validation in demo sites; WP2. Meta-analysis of previous results. Task 2.2 Meta-analysis for irrigation effects).
4. AGL2017-83738-C3-1R. WANUGRAPE: Optimizing grapevine water and nitrogen use efficiency and grape and wine quality combining the genetic material with sustainable fertigation scheduling. Ministerio de Economía y Competitividad. H. Medrano, Universitat de les Illes Balears (UIB). 2018 – 2021. 101.640€ (Researcher).
  5. 2I18SAE00061. VID4VINO: Programa integral para la mejora de la calidad de la uva y el vino ante los nuevos escenarios derivados del cambio climático. Región de Murcia: Proyectos Estratégicos RIS3Mur 2018. D.S. Intrigliolo, Centro de Edafología y Biología Aplicada del Segura (CEBAS). 2018 – 2021. 164.647,5 €. (Working team).
  6. 618127. EnViRoS: Opportunities for an Environmental-friendly viticulture: Optimization and introduction of new Rootstock and Scion genotypes. European Union and Spanish Ministry of Economy and Competitiveness: Arimnet 2. J.M. de Paz. Instituto Valenciano de Investigaciones Agrarias (IVIA). 01/10/2019 - 30/04/2020. 715.276 €. (Working team).
  7. BestCava 2.0: Análisis socio-económico y agronómico de nuevas técnicas vitícolas para mejorar la composición de la uva y la calidad del cava. Fundación Ciudad de Requena. **I. Buesa**. Unidad Asociada CSIC-IVIA “Riego en la Agricultura Mediterránea”. 01/06/2018 – 31/05/2019. 15.000 € (Principal investigator).
  8. AGL2017-83738-C3-3-R. Optimización de la eficiencia en el uso del nitrógeno en la vid bajo déficit hídrico y estrés salino. Ministerio de Economía y Competitividad. Subprograma Retos Sociedad. D.S. Intrigliolo, Centro de Edafología y Biología Aplicada del Segura (CEBAS). 2017 – 2018. 205.700 € (Working team).
  9. BestCava: Técnicas agronómicas para desplazar la maduración de la uva Macabeo (*Vitis vinifera* L.) y mejorar la calidad de vinos base para cava de guarda. Fundación Ciudad de Requena. **I. Buesa**. Unidad Asociada CSIC-IVIA “Riego en la Agricultura Mediterránea”. 01/06/2017 – 31/05/2018. 15.000 € (Principal investigator).
  10. LIFE14 CCM/GR/000635. LIFE CLIMATREE: A novel approach for accounting & monitoring carbon sequestration of tree crops and their potential as carbon sink areas. European Climate Infrastructure and Environment Executive Agency: Life Programme. D.S. Intrigliolo. Centro de Edafología y Biología Aplicada del Segura (CEBAS). 2015-2017. 121.188 €. (Working team).

#### **C.4. Contracts, technological or transfer merits**

1. Recovery, selection and agro-ecological valorisation of the autochthonous grape variety ‘Bobal’ (ValoraBobal): Hito2. DO Utiel-Requena. 2021-2025. D. Intrigliolo (CIDE-CSIC-UV). 200.000€ (Researcher).
2. Water use efficiency under climate change scenarios. Fundación Cajamar Comunidad Valenciana. 2018-2020. D. Intrigliolo (CEBAS-CSIC). 81.000€ (Researcher).
3. Recovery, selection and agro-ecological valorisation of the autochthonous grape variety ‘Bobal’ (ValoraBobal): Hito 1. DO Utiel-Requena. 2018-2020. D. Intrigliolo (CEBAS-CSIC). 80.000€ (Researcher).
4. Technical assistance on irrigation and salinity management in the frame of the project Bestbrandy (ITC-20161157). Bodegas Las Copas S.L. 2016-2018. D. Intrigliolo (CEBAS-CSIC). 26.000€ (Working team).
5. Technical assistance for the implementation of organic ginger growing in south-eastern Spain. Citrosan S.L. (CDTI Project). 2016-2018. D. Intrigliolo (CEBAS-CSIC). 42.879€ (Working team).
6. Experimentation on field practices aimed at optimising grape composition and profitability of wine grape cultivation in south-eastern Spain. Caja Mar Caja Rural. 2015-2017. D. Intrigliolo (CEBAS-CSIC) + Fundación Lucio Gil de Fagoaga. 75.000€ (Working team).
7. Study and solutions for problems of chloride phytotoxicity in the cultivation of persimmon. Cooperativa de Carlet. 2013-2014. D. Intrigliolo (IVIA). 70.222€ (Working team).
8. Hydroponic irrigation system to woody crops. Projar S.A. 2012-2014. D. Intrigliolo (IVIA). 33.000€ (Working team).
9. Implementation and development of a system for determining the irrigation requirements of extensive horticultural crops using capacitive probes. Agrícola Villena Coop V. 2011 – 2013. L. Bonet (STR-IVIA). 9.000€ (Working team).
10. Irrigation advisor at “Servicio de Tecnología del Riego”. Pedro Ferrer (IVIA). 01/06/2009-31/05/2011. (Working team).