CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	Jose María		
Family name	Climent Maldonado		
Gender (*)	Male	Birth date (dd/mm/yyyy)	13/02/1962
Social Security, Passport, ID number	05250944 K		
e-mail	climent@inia.csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-0815-2645	

(*) Mandatory

A.1. Current position

Position	Staff scientist		
Initial date	15/12/2008		
Institution	INIA-CSIC		
Department/Center	ICIFOR		
Country	Spain	Teleph. number	+34 91 3476862
Key words	Adaptation, Life Histories, Conservation, Pines		

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

Period	Position/Institution/Country/Interruption cause
2004-2008	Ramón y Cajál research fellow
1998-2003	Lecturer, ETSIM, UPM
1991-1998	Hired researcher, ETSIM, UPM

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Forest Engineer	Univ. Politécnica de Madrid (UPM)	1990
PhD in Forestry	Univ. Politécnica de Madrid (UPM)	1996

(Include all the necessary rows)

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

Since 2004 I have led a line at ICIFOR on the evolution of life histories in Mediterranean pines, both in their macro-evolutionary aspects and, above all, micro-evolutionary ones based on the ecotypic differentiation between populations. The incorporation of reproductive characters has multiplied the scope of results within the Population Genetics and Evolution group at ICIFOR, from a pioneering paper (Climent et al 2008 Am J Bot), followed by many others deepening in the complexity of reproductive strategies, its intraspecific variation and plasticity in Mediterranean pines (Callejas-Díaz et al 2022. Am J Bot; Madrigal et al 2021. Sci Tot Environ; Martín-Sanz et al 2017. PLOSONE; Martin-Sanz et al 2016 Am J Bot; Santos-del-Blanco et al 2015 Evol App; Santos-del-Blanco et al 2014. J Ecol; Santos-Del-Blanco et al 2013 J Evol Biol; Santos-del-Blanco 2012. Ann Bot) and others.
Thanks to consecutive successful national and EU projects both as main researcher or as a participant scientist, this line has recently been enlarged by incorporating other key adaptive traits, such that cone serotiny, bark thickness, stem straightness, and in collaboration with researchers of MBG-CSIC and Univ. Lleida, also tree defenses, and carbon and water usage. This multi-trait approach to the adaptive phenotype, combined with last-generation molecular

genetic tools is within the cutting-edge trends in forest genetic science, as can be shown by my recent collaborative scientific papers (Sierra-de-Grado et al 2022. J Exp Bot; Suárez-Vidal et al 2021. Am J Bot; Santini et al 2019. Ann Bot; Prada et al 2016 Am J Bot; Flores et al 2018 Forests) and others.
In addition, the applicability of these findings to the management of genetic resources, both in breeding and genetic conservation programs has always one of my main interests, in close collaboration with Dr. Ricardo Alía at ICIFOR, and a wide group of European researchers, as can be also supported by several recent publications (Olsson et al 2023. For Ecol Manag; Alía et al 2022 PlosOne; Ramírez-Valiente et al 2021. J Ecol; Climent J 2021 In: Ne'eman G, ed. Pines and Their Mixed Forest Ecosystems in the Mediterranean Basin. Springer; Notivol et al 2020 Forests).
In the more applied field, I have directed two contracts devoted to technology transfer funded by INIA, in partnership with TRAGSA, aimed at developing guidelines for the use of basic materials and reproductive materials, and including three transfer meetings for forest managers. Similarly, the Research Infrastructures EU projects TreeBreedex and Tres4Future allowed me to implement similar activities at European level. In addition, I was responsible for an INTERCOONECTA activity of AECID devoted to build a thematic network on the use of forest genetic resources for Climate Change mitigation between Spain and South America.
I have supervised six PhD theses (three in the last ten years), thanks to FPU and FPI grants associated to national projects, plus 6 Master theses and 4 degree projects. All doctors are currently hired or permanent researchers. I am currently Associated Editor of the scientific journals Forest Systems, Forests, Frontiers in Forests and Global Change, and Tree Genetics and Genomes and frequent reviewer for more than 25 journals.
I have been dedicated to teaching in postgraduate programs, first at UPM and since 2006 at University of Valladolid, as part of my engaging in the Research Institute for Sustainable Forest Management (iuFOR).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

SCI Papers

Callejas-Díaz M, Chambel MR, San-Martín-Lorén J, Gea-Izquierdo G, Santos-Del-Blanco L, Postma E, Climent J. (2022). The role of maternal age, growth, and environment in shaping offspring performance in an aerial conifer seed bank. *Am J Bot* 109: 366–376. https://doi.org/10.1002/ajb2.1811

Sierra-De-Grado R., Pando V, Voltas J, Zas R, Majada J, Climent J. (2022). Straightening the crooked: Intraspecific divergence of stem posture control and associated trade-offs in a model conifer. *J Exp Bot* 73 (4), pp. 1222-1235. https://doi.org/10.1093/jxb/erab535

Ramírez-Valiente JA, Santos del Blanco L, Alía R, Robledo-Arnuncio JJ, Climent J. (2021). Adaptation of Mediterranean forest species to climate: Lessons from common garden experiments. *J Ecol*: 1365-2745.13730. https://doi.org/10.1111/1365-2745.13730

Santini F, Climent JM, Voltas J. (2019). Phenotypic integration and life history strategies among populations of Pinus halepensis: an insight through structural equation modelling. *Ann Bot* 124: 1161–1171. https://doi.org/10.1093/aob/mcz088

Martín-Sanz RC, San-Martín R, Poorter H, Vázquez A, Climent J. (2019). How does water availability affect the allocation to bark in a Mediterranean conifer? *Front Plant Sci* 10. https://doi.org/10.3389/fpls.2019.00607

Martin-Sanz RC, Santos-del-Blanco L, Notivol E, Chambel MR, San-Martin R, Climent J. (2016). Disentangling plasticity of serotiny, a key adaptive trait in a Mediterranean conifer. *Am J Bot* 103: 1582–1591. https://doi.org/10.3732/ajb.1600199

Santos-del-Blanco L, Alía R, González-Martínez SC, Sampedro L, Lario F, Climent J. (2015). Correlated genetic effects on reproduction define a domestication syndrome in a forest tree. *Evol App* 8: 403–410. https://doi.org/10.1111/eva.12252

Santos-del-Blanco L, Bonser SP, Valladares F, Chambel MR, Climent J (2013) Plasticity in reproduction and growth among 52 range-wide populations of a Mediterranean conifer: adaptive responses to environmental stress. *J Evol Biol* 26: 1912–1924. https://doi.org/10.1111/jeb.12187

Climent J, Prada MA, Calama R, Chambel MR, Sánchez de Ron D, Alia R (2008) To grow or to seed: ecotypic variation in reproductive allocation and cone production by young female Aleppo pine (*Pinus halepensis, Pinaceae*). *Am J Bot* 95(7): 833–42. https://doi.org/10.3732/ajb.2007354

Book chapter

Climent J, Alizoti P, Rodriguez-Quilón I, Kurt Y, Ducci F, Fady B, Alía R. 2021. Conservation and breeding of Mediterranean pines. In: G. Ne'eman [ed.]. Pines and Their Mixed Forest Ecosystems in the Mediterranean Basin. Springer, 33–70. https://doi.org/10.1007/978-3-030-63625-8_3

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

Martín-Sanz R., Cavers S, Santos-del-Blanco L, Grivet D, Climent J. 2015. Assessing adaptive genetic variation in Aleppo pine: comparing molecular vs. phenotypic data. ESEB 2015: 15th *Congress of the European Society for Evolutionary Biology*. Lausanne, Switzerland. Poster.

Climent J, Voltas J, Zas R, Martín-Sanz RC, Ferrio JP, Notivol E, Sampedro L. 2015. Environment-dependent patterns of phenotypic integration in Aleppo pine. ESEB 2015: 15th *Congress of the European Society for Evolutionary Biology*. Lausanne, Switzerland. Poster.

Sampedro L, Voltas J, Martín-Sanz R, Zas R, Ferrio JP, Climent J. 2014. Trade-offs among life history traits underlying population differentiation in Aleppo pine. 5th International Conference on Mediterranean Pines (MEDPINE 5). Solsona, Spain. Oral.

Climent JM, Martín-Sanz R, Santos-del-Blanco L, Chambel MR, Notivol E. 2014. Genetic, environmental and ontogenetic effects on cone serotiny Aleppo pine (Pinus halepensis Mill.). Medpine 5-International Conference on Mediterranean Pines (MEDPINE 5). Solsona, Spain. Oral.

Climent J, Zas R, Voltas J, Chambel M, Sampedro L, Ferrio P. 2013. Understanding local adaptation through trade-offs among life history and ecophysiological traits in Aleppo pine (Pinus halepensis Mill.). Adapting to global change in the Mediterranean hotspot. Sevilla, Spain. Poster.

Climent J, Santos del Blanco L, Sampedro L, Zas R, Alía R. 2013. Life history trade-offs and human-driven microevolution in Maritime pine, a managed forest tree. Congress of the European Society for Evolutionary Biology. Lisbon, Portugal, 1071. Poster.

Climent JM, Santos-del-Blanco L, Notivol E, Sampedro L, Alía R, Chambel MR. 2011. Intra-specific variation and plasticity of life history traits in two Mediterranean pines. 12th Annual EEF Congress. Ávila, Spain. Invited conference.

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

Horizon Europe-101081774 Harnessing forest genetic resources for increasing options in the face of environmental and societal challenges (OptForests), UE. 2022-2027. Main researcher for INIA participation. Grant: 235.100 €

RTI2018-094691-B-C32. Resilience of Mediterranean pines in a changing environment: genetic change and phenotypic plasticity (RESILPINE). MICIN. Main Researcher. 2019-2022. Grant 153.065 €

AGL2015-68274-C03-01-R. Adaptive bases for the future management of the genetic resources of Mediterranean pines (FUTURPIN). MINECO. Main Researcher of the coordinated Project. 2016-2018. Grant: 145.200 €

AGL2012-40151-C03-02. Reproductive strategies: adaptive relevance in relation to alternative life history characters in Iberian pines (FENOPIN). MINECO. Main researcher. 2013-2015. Grant: 117.000 €

CAPACITIES-284181 Designing Trees for the Future (Trees4Future). UE, FP7, 2011- 2016. Main researcher of INIA. Grant: 173.834 €.

FP7-211868 Novel Forest Tree Breeding Strategies (NOVELTREE) UE, 2008-2012. WP3 Leader. Grant: 285.500 €

RTA 2011-00016-00-00. Genetic variability and phenotypic plasticity in carbon sequestration capacity and resilience in Mediterranean pines (MITIGENFOR). MINECO. Main Researcher. 2011-2013. Grant: 27.145 €

FP6-026076-RICA TREEBREEDEX: a working model network of tree improvement for competitive multifunctional and sustainable European forestry. UE. 2006-2010 Main researcher of INIA. Grant: 82.439 €

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

Responsible of AECID activity: Mitigación de los efectos del cambio climático mediante programas de reforestación. INTERCOONECTA, September 2016

Participation in EG17-041: Encomienda de gestión del servicio para actividades relacionadas con la conservación y promoción de recursos genéticos forestales contempladas en el programa nacional de desarrollo rural. MAPAMA. 2017-2021. Lead resercher R- Alía. Grant: 582.178,74 €.

Leading AT07-002 Árboles para el futuro. Obtención y caracterización de materiales forestales

de reproducción. INIA. 2007-2009. Grant 354.674 €, and AT05-002 Evaluación precoz de materiales forestales de base y material forestal de reproducción. INIA. 2005-2006. Grant 209.150 €; Both contracts focused in both applied experimentation, transfer sessions and stakeholder meetings, including CCAAs, Ministry of Environment and nursery ad forest companies.