

ITALO CUNEO ARRATIA

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I. PUBLICACIONES (2015 – presente)

Publicaciones en revistas indexadas (ISI)

1. Rojas J, Viacava C, Ubeda C, Peña-Neira Á, **Cuneo IF**, Kuhn N, Cáceres-Mella A. Chemical Characterization of Sauvignon Blanc Wines from Three Cold-Climate-Growing Areas of Chile. **Foods**. 2024; 13(13):1991. <https://doi.org/10.3390/foods13131991>
2. Larach A, Vega-Celedón P, Castillo-Navales D, Tapia L, **Cuneo I**, Cádiz F, Seeger M, Besoain X. *Diplodia seriata* Biocontrol Is Altered via Temperature and the Control of Bacteria. **Microorganisms**. 2024; 12(2):350. <https://doi.org/10.3390/microorganisms12020350>
3. Dorochesi F, Barrientos-Sanhueza C, Díaz-Barrera Á, **Cuneo IF**. Enhancing Soil Resilience: Bacterial Alginate Hydrogel vs. Algal Alginate in Mitigating Agricultural Challenges. **Gels**. 2023; 9(12):988. <https://doi.org/10.3390/gels9120988>
4. Heller-Fuenzalida F, **Cuneo IF**, Kuhn N, Peña-Neira Á, Cáceres-Mella A. Rootstock Effect Influences the Phenolic and Sensory Characteristics of Syrah Grapes and Wines in a Mediterranean Climate. **Agronomy**. 2023; 13(10):2530. <https://doi.org/10.3390/agronomy13102530>
5. Barrientos-Sanhueza, C., Hormazabal-Pavat, V. & **Cuneo, I.F.** Extreme drought enhances *Opuntia ficus-indica* fine root cells elasticity preventing permanent damage. *Theor. Exp. Plant Physiol.* **35**, 233–246 (2023). <https://doi.org/10.1007/s40626-023-00278-0>
6. Tamayo M, Sepúlveda L, Guequen EP, Saavedra P, Pedreschi R, Cáceres-Mella A, Alvaro JE, **Cuneo IF**. Hydric Behavior: Insights into Primary Metabolites in Leaves and Roots of Cabernet Sauvignon and Grenache Grapevine Varieties under Drought Stress. **Horticulturae**. 2023; 9(5):566. <https://doi.org/10.3390/horticulturae9050566>

7. Tamayo, M.; Sepúlveda, L.; Guequen, E.P.; Saavedra, P.; Pedreschi, R.; Cáceres-Mella, A.; Alvaro, J.E.; **Cuneo, I.F.** Hydric Behavior: Insights into Primary Metabolites in Leaves and Roots of Cabernet Sauvignon and Grenache Grapevine Varieties under Drought Stress. *Horticulturae* 2023, 9, 566. <https://doi.org/10.3390/horticulturae9050566>
8. Aris G, **Cuneo IF**, Pastenes C, Cáceres-Mella A. Anthocyanin Composition in Cabernet Sauvignon Grape Skins: Effect of Regulated Deficit Irrigation in a Warm Climate. *Horticulturae*. 2022; 8(9):796. <https://doi.org/10.3390/horticulturae8090796>
9. Peirano-Bolelli P, Heller-Fuenzalida F, **Cuneo IF**, Peña-Neira Á, Cáceres-Mella A. Changes in the Composition of Flavonols and Organic Acids during Ripening for Three cv. Sauvignon Blanc Clones Grown in a Cool-Climate Valley. *Agronomy*. 2022; 12(6):1357. <https://doi.org/10.3390/agronomy12061357>
10. Barrientos-Sanhueza, C., Hormazabal-Pavat, V., Cargnino-Cisternas, D., & **Cuneo, I. F.** (2022). Biomechanics and hydraulics of *Opuntia ficus-indica* roots exposed to extreme drought. *bioRxiv (Cold Spring Harbor Laboratory)*. <https://doi.org/10.1101/2022.05.01.490238>
11. Beyer CP, Barrientos-Sanhueza C, Ponce E, Pedreschi R, **Cuneo IF**, Alvaro JE. Differential Hydraulic Properties and Primary Metabolism in Fine Root of Avocado Trees Rootstocks. *Plants*. 2022; 11(8):1059. <https://doi.org/10.3390/plants11081059>
12. Barrientos-Sanhueza C, Cargnino-Cisternas D, Díaz-Barrera A, **Cuneo I** (2022). Bacterial Alginate-Based Hydrogel Reduces Hydro-Mechanical Soil-Related Problems in Agriculture Facing Climate Change. *Polymers* 14(5); doi: 10.3390/polym14050922
13. Beyer C, Barrientos-Sanhueza C, Ponce E, Pedreschi R, **Cuneo I**, Alvaro JE (2022). Differential Hydraulic Properties and Primary Metabolism in Fine Root of Avocado Trees Rootstocks. *Plants* 11(8); doi: 10.3390/plants11081059
14. Salgado E, Livellara N, Chaigneau E, Varas F, **Cuneo I** (2022). Hourly relationship between reference evapotranspiration and shoot shrinkage in walnut trees and pomegranate under deficit irrigation. *Plants* 11(1); doi: 10.3390/plants11010031
15. Beyer C, **Cuneo I**, Alvaro J, Pedreschi R (2021) Confronting the differential physiology of 'Hass' avocado grafted onto two different rootstocks in a controlled environment. *Acta Horticulturae*, 1327; doi: 10.17660/ActaHortic.2021.1327.16

16. Whitney C, Fernandez E, Schiffers K, **Cuneo I**, Luedeling E (2021). Forecasting yield in temperate fruit trees from winter chill accumulation. **Acta Horticulturae** 1327; doi: 10.17660/ActaHortic.2021.1327.53
17. Barrientos-Sanhueza C, Mondaca P, Tamayo M, Álvaro JE, Díaz-Barrera A, **Cuneo I** (2021) Enhancing the mechanical and hydraulic properties of coarse quartz sand using a water-soluble hydrogel based on bacterial alginate for novel application in agricultural contexts. **Soil Science Society of America Journal**; doi: 10.1002/saj2.20315
18. Lindh V, Uarrota V, Zulueta C, Alvaro JE, Valdenegro M, **Cuneo I**, Mery D, Pedreschi R (2021) Image Analysis Reveals That Lenticel Damage Does Not Result in Black Spot Development but Enhances Dehydration in *Persea americana* Mill. cv. Hass during Prolonged **Storage**. **Agronomy** 11; doi: 10.3390/agronomy11091699
19. Reingwirtz I, Uretsky J, **Cuneo I**, Knipfer T, Reyes C, Walker MA, McElrone AJ (2021) Inherent and Stress-Induced Responses of Fine Root Morphology and Anatomy in Commercial Grapevine Rootstocks with Contrasting Drought **Resistance**. **Plants** 10; doi: 10.3390/plants10061121
20. Beyer CP, **Cuneo I**, Alvaro JE, Pedreschi R (2021). Evaluation of aerial and root plant growth behavior, water and nutrient use efficiency and carbohydrate dynamics for Hass avocado grown in a soilless and protected growing system. **Scientia Horticulturae** 277; doi: 10.1016/j.scienta.2020.109830
21. Rojas G, Fernández E, Whitney C, Luedeling E, **Cuneo I** (2021) Adapting sweet cherry orchards to extreme weather events - Decision Analysis in support of farmers' investments in Central Chile. **Agricultural Systems** 187; doi: 10.1016/j.agsy.2020.103031.
22. **Cuneo, I**, Barrios-Masias F, Knipfer T, Uretsky J, Reyes C, Lenain P, Brodersen CR, Walker MA, McElrone AJ (2021) Differences in grapevine rootstock sensitivity and recovery from drought are linked to fine root cortical lacunae and root tip function. **New Phytol** 229; doi: 10.1111/nph.16542
23. Alvarado L, Saa S, **Cuneo I**, Pedreschi R, Morales J, Larach A, Barros W, Guajardo J, Besoain X. A Comparison of Immediate and Short-Term Defensive Responses to *Phytophthora* Species Infection in Both Susceptible and Resistant Walnut Rootstocks. **Plant Disease** 104; doi: 10.1094/PDIS-03-19-0455-RE
24. Fernandez E, Whitney C, Cuneo, Luedeling E (2020) Prospects of decreasing winter chill for deciduous fruit production in Chile throughout the 21st century. **Climatic Change** 159; doi: 10.1007/s10584-019-02608-1

25. Fernandez E, **Cuneo I**, Luedeling E, Alvarado L, Farias D, Saa S (2019) Starch and hexoses concentrations as physiological markers in dormancy progression of sweet cherry twigs. *Trees* (in press).
26. **Cuneo I**, T Knipfer, P Mandal, C Brodersen & A McElrone (2018) Water uptake can occur through woody portions of roots and facilitates localized embolism repair in grapevine. *New Phytologist* 218: 506-516
27. McElrone AJ, Knipfer T, Albuquerque C, Brodersen CR, **Cuneo I**, Mason JM (2018) Changes in xylem conducting capacity and water storage across species: how can variable air content of xylem cells affect sap flow?. *Acta Horticulturae*. DOI:10.17660/ActaHortic.2018.1222.2
28. Knipfer T, Barrios-Masias F, **Cuneo I**, Bouda M, Albuquerque P, Brodersen C, Kluepfel DA, McElrone AJ (2018) Variations in xylem embolism susceptibility under drought between intact saplings of three walnut species. *Tree Physiology* 38: 1180 – 1192.
29. Caceres-Mella A, Ribalta-Pizarro C, Villalobos-González L, **Cuneo I**, Pastenes C (2018) Controlled water deficit modifies the phenolic composition and sensory properties in Cabernet Sauvignon wines. *Scientia Horticulturae* 237: 105-111.
30. Knipfer T, **I Cuneo**, J Mason, C Reyes, C Brodersen, A McElrone (2017) Storage compartments for capillary water rarely refill in an intact woody plant. *Plant Physiology* 175: 1649-1660; doi: 10.1104/pp.17.01133
31. **Cuneo I**, T Knipfer, C Brodersen & A McElrone (2016) Mechanical failure of fineroot cortical cells initiates plant hydraulic decline during drought. *Plant Physiology* 172: 1669-1678; doi: 10.1104/pp.16.00923
32. Knipfer T, **I Cuneo**, C Brodersen & A McElrone (2016) In situ visualization of the dynamics in xylem embolism formation and removal in the absence of root pressure: A study on excised grapevine stems. *Plant Physiology* 171: 1024- 1036; doi: 10.1104/pp.16.001

II. EXPERIENCIA EN PROYECTOS DE INVESTIGACION (2015 – presente)

Proyectos con fondos concursables

2022 – 2025 **Investigador responsable. Fondecyt Regular:** Unravelling the biophysical modulations of the soil-mucilage-root interface in response to drought and its impact on stomatal responses in different crop species

(SoMuRo).

2019 – 2023 **CoI FONDECYT - CONICYT 1190816**: "Rootstocks/scion hydraulic interaction: unraveling the contribution of root apoplastic, symplastic and transcellular water transport pathways on scion physiological performance"

2018 – 2021 **PI FONDECYT - CONICYT 11180102**: "Understanding how drought stress affects water uptake capacity at different developmental zones along the length of grapevine fine roots".

2018 **PI DI-PUCV 039.322** "Understanding how abiotic stressors such as drought affect water uptake capacity at different zones along the length of grapevine fine roots"

2017 – 2020 **CO - I 34** "Phenological and Social Impacts of Temperature Increase - A Case Study of Two countries". Federal Ministry of Education and Research – BMBF (Germany)