

## XIMENA BESOAIN CANALES

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### I. PUBLICACIONES (2015 – presente)

#### *Publicaciones en revistas indexadas (ISI)*

1. Funes, C. F., Larach, A., **Besoain, X.**, Serrano, D. D., Hadad, C., Pedreschi, R., Van Nhien, A. N., & Fuentealba, C. (2023). Active coatings based on oxidized chitin nanocrystals and silk fibroins for the control of anthracnose in 'Hass' avocados. *International Journal Of Biological Macromolecules*, 253, 126673. <https://doi.org/10.1016/j.ijbiomac.2023.126673>
2. Larach, A., Vega-Celedón, P., Salgado, E., Salinas, A., Riquelme, N., Castillo-Novales, D., Sanhueza, P., Seeger, M., & **Besoain, X.** (2023). Higher Virulence of *Diplodia seriata* Isolates on Vines of cv. Cabernet Sauvignon Associated with 10-Year-Old Wood Compared to Young Tissue. *Plants*, 12(16), 2984. <https://doi.org/10.3390/pla>
3. Camps R, Fiore N, Riquelme N, Barros-Parada W, **Besoain X** (2022). Genotype variation of citrus tristeza virus after passage on different hosts, and changes in the virus genotype populations by the vector *Aphis gossypii*. *Phytopathologia Mediterranea* 61(1); doi: 10.36253/phyto-12965
4. Luna I, **Besoain X**, Saa S, Peach-Fine E, Morales F, Riquelme N, Larach A, Morales J, Ezcurra E, Ashworth V, Rolshausen P (2021). Identity and pathogenicity of Botryosphaeriaceae and Diaporthaceae from *Juglans regia* in Chile. *Phytopathologia Mediterranea* 61(1); doi: 10.36253/phyto-12832
5. Díaz K, Werner E, **Besoain X**, Flores S, Donoso V, Said B, Caro N, Vega E, Montenegro I, Madrid A (2021) In Vitro Antifungal Activity and Toxicity of Dihydrocarvone-Hybrid Derivatives against *Monilinia fructicola*. *Antibiotics*; 10(7):818; doi: 10.3390/antibiotics10070818
6. Valenzuela M, González M, Velásquez A, Dorta F, Montenegro I, **Besoain X**, Salvà-Serra F, Jaén-Luchoro D, Moore ERB, Seeger M (2021) Analyses of

Virulence Genes of *Clavibacter michiganensis* subsp. *michiganensis* Strains Reveal Heterogeneity and Deletions That Correlate with Pathogenicity. **Microorganisms**; 9(7):1530; doi: 10.3390/microorganisms9071530

7. Delgado N, Olivera M, Cádiz F, Bravo G, Montenegro I, Madrid A, Fuentealba C, Pedreschi R, Salgado E, **Besoain X** (2021) Volatile Organic Compounds (VOCs) Produced by *Gluconobacter cerinus* and *Hanseniaspora osmophila* Displaying Control Effect against Table Grape-Rot Pathogens. **Antibiotics**; 10(6):663; doi: 10.3390/antibiotics10060663
8. Olivera M, Delgado N, Cádiz F, Riquelme N, Montenegro I, Seeger M, Bravo G, Barros-Parada W, Pedreschi R, **Besoain X** (2020) Diffusible Compounds Produced by *Hanseniaspora osmophila* and *Gluconobacter cerinus* Help to Control the Causal Agents of Gray Rot and Summer Bunch Rot of Table Grapes. **Antibiotics**; 10(6):664; doi: 10.3390/antibiotics10060664
9. Aravena R, **Besoain X**, Riquelme N, Salinas A, Valenzuela M, Oyanedel E, Barros W, Olguin Y, Madrid A, Alvear M, Montenegro I (2020) Antifungal Nanoformulation for Biocontrol of Tomato Root and Crown Rot Caused by *Fusarium oxysporum* f. sp. *radicis-lycopersici*. **Antibiotics**; 10(9):1132; doi: 10.3390/antibiotics10091132
10. Larach, A., Torres, C., Riquelme, N., Valenzuela, M., Salgado, E., Seeger, M., **Besoain X**. (2020). Yield loss estimation and pathogen identification from *Botryosphaeria dieback* in vineyards of Central Chile over two growing seasons. **Phytopathologia Mediterranea**; 59(3), 537-548; doi: 10.14601/Phyto-11235
11. Méndez V, Valenzuela M, Salvà-Serra F, Jaén-Luchoro D, **Besoain X**, Moore ERB, Seeger M (2020) Comparative Genomics of Pathogenic *Clavibacter michiganensis* subsp. *michiganensis* Strains from Chile Reveals Potential Virulence Features for Tomato Plants. **Microorganisms**; 8(11):1679; doi: 10.3390/microorganisms8111679
12. López G, Mellado M, Werner E, Said B, Godoy P, Caro N, **Besoain X**, Montenegro I, Madrid A (2020) Sonochemical Synthesis of 2'-Hydroxy-Chalcone Derivatives with Potential Anti-Oomycete Activity. **Antibiotics**; 9(9):576; doi:10.3390/antibiotics9090576
13. Flores O, Retamales J, Núñez M, León M, Salinas P, **Besoain X**, Yañez C, Bastías R (2020) Characterization of Bacteriophages against *Pseudomonas Syringae* pv. *Actinidiae* with Potential Use as Natural Antimicrobials in Kiwifruit Plants. **Microorganisms**; 8(7):974; doi: 10.3390/microorganisms8070974

14. Werner E, Montenegro I, Said B, Godoy P, **Besoain X**, Caro N, Madrid A (2020) Synthesis and Anti-Saprolegnia Activity of New 2',4'-Dihydroxydihydrochalcone Derivatives; **Antibiotics**; 9:317; doi:10.3390/antibiotics9060317
15. Tapia L, Larach A, Riquelme N, Guajardo J, **Besoain X** (2020) First Report of Neofusicoccum luteum Causing Stem-End Rot Disease on Avocado Fruits in Chile. **Plant Disease**; 104, 2027-2027; doi: 10.1094/PDIS-11-19-2299-PDN
16. Vasconez, I. N., **Besoain, X.**, Vega-Celedón, P., Valenzuela, M., & Seeger, M. (2020) First report of bacterial wilt caused by Ralstonia solanacearum phylotype IIB sequevar 1 affecting tomato in different regions of Chile. **Plant Disease**; 104(7), 2023; doi: 10.1094/PDIS-01-20-0181-PDN
17. Alvarado L, Saa S, Cuneo IF, Pedreschi R, Morales J, Larach A, Barros W, Guajardo J, **Besoain X** (2020) A Comparison of Immediate and Short-Term Defensive Responses to *Phytophthora* Species Infection in Both Susceptible and Resistant Walnut Rootstocks. **Plant Disease**; 104:921-929; doi: 10.1094/PDIS-03-19-0455-RE.
18. Montenegro I, Said B, Godoy P, **Besoain X**, Parra C, Díaz K, Madrid A (2020) Antifungal Activity of Essential Oil and Main Components from *Mentha pulegium* Growing Wild on the Chilean Central Coast. **Agronomy**; 10(2):254. doi: 10.3390/agronomy10020254
19. Guajardo J, Saa S, Riquelme N, Browne G, Youlton C, Castro M, **Besoain, X** (2019). Characterization of oomycete species associated with root and crown rot of english walnut in Chile. **Plant Disease** 103(4); doi: 10.1094/PDIS-07-18-1160-RE
20. Montenegro I, Mellado A, Russo A, Said B, **Besoain X**, Godoy P, Werner E, Caro N, Madrid A (2019). Carveoylphenols and their antifungal potential against pathogenic yeasts. **Antibiotics**, 8(4); doi: 10.3390/antibiotics8040185
21. **X Besoain**, Guajardo J, Larach A, Riquelme N, Gálvez E, Tapia L, Alvarado L, Saratscheff T & Celis-Diez J (2019) First Report of Diplodia seriata causing gummy canker in Araucaria araucana wild populations in south- central Chile. **Plant Disease**; doi: 10.1094/PDIS-01-19-0200-PDN.
22. Morales J, **Besoain X**, Cuneo I, Larach A, Alvarado L, Cáceres A, Saa S (2019) Impact of nitrogen fertilization on phytophthora cinnamomi root-related damage in juglans regia saplings. **HortScience** 54(12); doi: 10.21273/HORTSCI14299-19

23. Valenzuela M, Méndez V, Montenegro I, **Besoain X**, Seeger M (2019). Streptomycin resistance in *Clavibacter michiganensis* subsp. *michiganensis* strains from Chile is related to an rpsL gene mutation. ***Plant Pathology*** 68(3); doi: 10.1111/ppa.12971
24. Valenzuela M, Méndez V, Montenegro Iván, **X Besoain** & Seeger M (2018) Streptomycin resistance in *Clavibacter michiganensis* subsp. *michiganensis* strains from Chile is related to an rpsL gene mutation. ***Plant Pathology***; doi: 10.1111/ppa.12971.
25. Guajardo J, Saa S, Riquelme N, Browne G, Youlton C, Castro M & **X Besoain** (2018) Characterization of Oomycete Species Associated With Root and Crown Rot of English Walnut in Chile. ***Plant Disease***, 103; doi: 10.1094/PDIS-07-18-1160-RE.
26. Flores O, Prince C, Núñez M, Vallejos A, Mardones C, Yáñez C, **X Besoain** & Bastías R (2018) Genetic and Phenotypic Characterization of Indole-Producing Isolates of *Pseudomonas syringae* pv. *actinidiae* Obtained From Chilean Kiwifruit Orchards. ***Frontiers in Microbiology***, 9; doi: 10.3389/fmicb.2018.01907.
27. Montenegro I, Madrid A, Cuellar M, Seeger M, Alfaro J, **X Besoain**, Martínez J, Ramírez I, Olguin Y & Valenzuela M (2018) Biopesticide Activity from Drimanic Compounds to Control Tomato Pathogens. ***Molecules***, 23; doi: 10.3390/molecules23082053.
28. Guajardo J, Riquelme N, Tapia L, Larach A, Torres C, Camps R & **X Besoain** (2017) First Report of *Lasiodiplodia theobromae* Causing Bot Gummosis in Citrus limon in Chile. ***Plant Disease***, 102; doi: 10.1094/PDIS- 09-17-1517-PDN.
29. **X Besoain**, Guajardo J & Camps R (2017) First Report of *Diplodia mutila* causing gummy canker in *Araucaria araucana* (Molina) K. Koch in Chile. ***Plant Disease***, 101; doi: 10.1094/PDIS-12-16-1730-PDN.
30. Guajardo J, S Saa, R Camps & **X Besoain** (2017) Outbreak of crown and root rot of walnut caused by *Phytophthora cinnamomi* in Chile. ***Plant Disease*** 101: 636-636; doi: 10.1094/PDIS-09-16-1242-PDN
31. Camps R, L Mansur, C De La Cuadra & **X Besoain** (2016) First Report of Turnip mosaic virus (TuMV) Infecting *Leucocoryne purpurea* (Amaryllidaceae) in Chile. ***Plant Disease*** 100: 2341-2341; doi: 10.1094/PDIS-05-16-0777-PDN
32. Valenzuela M, S Fuentes, F Claverias, **X Besoain** & M Seeger (2016) Genetic

diversity of pathogenic *Clavibacter michiganensis* subsp. *michiganensis* strains from Central Chile. ***Phytopathology*** 106: 133-133.

33. **X Besoain**, AV Takasaki & R Camps (2016) Necrotic Streaking of Asiatic Lilies caused by *Plantago asiatica* mosaic virus in Chile. ***Phytopathology*** 106: 106-106
34. Vidal AK, R Camps & **X Besoain** (2016) First Report of Necrotic Streaking of Asiatic Lilies Caused by *Plantago asiatica* mosaic virus in Chile. ***Plant Disease*** 100: 1799 – 1799; doi: 10.1094/PDIS-01-16-0091-PDN
35. Torres C, R Camps, R Aguirre & **X Besoain** (2016) First Report of *Diaporthe rudis* in Chile Causing Stem-End Rot on 'Hass' Avocado Fruit Imported From California. ***Plant Disease*** 100: 1951- 1951; doi: 10.1094/PDIS-12-15-1495-PDN
36. Valencia D, C Torres, R Camps, E Lopez, JL Celis-Diez & **X Besoain** (2015) Dissemination of *Botryosphaeriaceae* conidia in vineyards in the semi-arid Mediterranean climate of the Valparaíso Region of Chile. ***Phytopathologia Mediterranea*** 54: 394-402
37. **Besoain X**, E Bertolini, R Camps, F Ramella, MT Gorris, M Torres & M Cambra (2015) Aggressive Citrus tristeza virus isolates in Chile are MCA13-positive and VT type, while mild isolates are MCA13-negative and T30 type. ***Ciencia e Investigación Agraria*** 42: 251-262; doi: 10.4067/S0718-162020150002000011
38. Polanco R, C Pino, **X Besoain**, J Montealegre & LM Perez (2015) Enhanced secretion of biocontrol enzymes by *Trichoderma harzianum* mutant strains in the presence of *Rhizoctonia solani* cell walls. ***Ciencia e Investigación Agraria*** 42: 243-250; doi: 10.4067/S0718-162020150002000010

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

### ***Proyectos con fondos concursables***

2021 – 2023 **Co-investigadora FONDEF IdeA N° ID21I10162**. Formulados de nanoemulsiones de exudados vegetales nativos para el control de enfermedades de patógenos asociados a suelo (*Phytophthora cinnamomi*, *Fusarium oxysporum* sp. *Lycopersici*, *Clavibacter michiganensis* subsp. *michiganensis*) en nogal y tomate.

2021 – 2024 **Directora FONDECYT**. Effects of tissue age and endophytic microbiome of *Botryosphaeria dieback* caused by *Diplodia seriata* in cv. Cabernet Sauvignon in Central Chile, and biocontrol studies in plant.

2020 – 2024 **Directora FIA PYT-2020-0218**. Nuevo Servicio De Detección De Virus Y Viroides Para Determinar La Sanidad De Plantas De Cítricos En Chile.

2017 – 2019 **Directora CONICYT, ID17AL0028**. Consorcio biológico PUCV-VBL para el control de hongos en postcosecha de uvas para exportación.

2015 – 2018 **Co-investigadora FONDEF IDEA DOS ETAPAS**. KIWIPHAGE: Desarrollo de un antimicrobiano natural contra el cancro bacteriano del kiwi utilizando bacteriófagos

2014 – **2018 CORFO - INNOVA**. Empaquetamiento y transferencia de producto biológico (PUCV-VBL), para el control de pudrición gris y del racimo en vides.

***Proyectos no concursables (Empresas, ONG e instituciones gubernamentales)***

2015 IR BASF CHILE S.A. Evaluación de la eficacia del fungicida/Bactericida (QLPT) como tratamiento al suelo para el control de tres especies fungosas y una especie bacteriana, en comparación a un tratamiento testigo sin inocular y un tratamiento testigo inoculado.

2015 IR Summit Agro Chile. Evaluación de la sensibilidad in vitro de los agentes acausales de cancrisis en vid al fungicida Hymexazol.

2015 IR ANASAC CHILE. Ensayo in vivo para establecer eficacia de diferentes formulaciones de Fenhexamid sobre *Botrytis cinerea* en flores y frutos de tomate.