# Molecular identification and characterization of Botrytis cinerea associated to the endemic flora of semi-desert climate in Chile


- Notte A.-M.[a],
- Plaza V.[a],
- Marambio-Alvarado B.[a],
- Olivares-Urbina L.[a],
- Poblete-Morales M.[b],
- Silva-Moreno E.[b, c],
- Castillo L.



**Abstract**

Botrytis cinerea is a phytopathogenic fungus that infects over 200 plant species and can cause significant crop losses in local and worldwide agricultural industries. However, its presence in the endemic flora in the Coquimbo Region and its impact on local flora have not been studied yet. In order to determine whether Botrytis spp is present in the native plant in the Coquimbo Region, fifty-two field-samples were analysed. A total of 30 putative Botrytis spp were isolated and phenotypic and genetically characterized. The internal transcribed spacer (ITS) analysis of these isolates revealed that it corresponded to genus Botrytis. For further confirmation, nuclear protein-coding genes (G3PDH, HSP60, and RPB2) were sequenced and showed 100% identity against B. cinerea. Complementary to this, Botrytis can also be clustered in two different groups, group I (B. pseudocinerea) and group II (B. cinerea), based on DNA polymorphism, the Botrytis isolates were identified as member of group II. On the order hand, we investigated the presence and frequency distribution of the transposable elements boty and flipper in the isolates obtained. The results indicate that 83.3% of the isolates presented both transposable elements, boty and flipper, indicating that the most prevalent genotype was transpose. In addition, 16.6% of the isolates showed substantially reduced virulence in apple fruit in comparison to B05.10 strain. According to fungicide resistance studies, the results indicate that resistance to Fenhexamid or Boscalid was observed in the 22.6% of isolates. The results show for the first time that B. cinerea has not been described before in fourteen new host plants and contributes to our fundamental understanding of the presence of B. cinerea in the native plant in the Coquimbo Region and the possible ecological impact of this disease on native and endemic plants. © 2021 The Author(s)



**Author keywords**

Botrytis cinerea; Genotypes; Grey mould disease; Native flora