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► To cite this version:

Elisabeth E. Fournier, Johann J. Confais, Véronique Decognet, Marc Fermaud, Alexandre Bout, et al.. Effect of host plants on sympatric genetic differentiations in french populations of *Botrytis cinerea*. Abstract. 14. International Botrytis Symposium, Oct 2007, Cape Town, South Africa. hal-02756534

HAL Id: hal-02756534

<https://hal.inrae.fr/hal-02756534>

Submitted on 3 Jun 2020

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P3.5 EFFECT OF HOST PLANTS ON SYMPATRIC GENETIC DIFFERENTIATIONS IN FRENCH POPULATIONS OF BOTRYTIS CINEREA

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Sympatric, ecological divergence may mainly involve parasites that differentiate via host shifts, because different host species exert strong disruptive selection and because both host and parasites are continually co-evolving. Due to their particular life styles, phytopathogenic fungi may be particularly strongly submitted to sympatric divergence, because in these organisms, adaptation alone allows the restriction of gene flow between populations developing on different hosts.

This study focuses on the generalist ascomycete fungus, *Botrytis cinerea* (sensu-stricto) developing on different host plants, and is part of a larger project aiming to characterise the influence of several factors on the genetic structuration and dynamics of *B. cinerea* French populations. Here we sampled populations of *B. cinerea* in 4 French regions (Champagne, Provence, French Riviera and Bordeaux area), on different hosts (grapevine, brambles, and litter) in close sympatry within each geographic area (not more than 150 m between populations from different hosts in each locality). This sampling scheme was repeated at different dates (fall 2005 and spring 2006). All isolates were genotyped with 8 microsatellite markers, and data were analysed using standard population genetics.

In addition to confirming that *B. cinerea* reproduces sexually, our results showed that the fungal populations developing on litter was not significantly differentiated from populations from grapevine and brambles. On the contrary, populations from the two plants (grapevine and brambles) were significantly differentiated, indicating restricted gene flow, even in sympatry. In contrast, only weak geographical differentiation could be detected. These results support the possibility of sympatric divergence by host adaptation in generalist parasites.