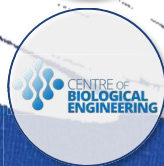


VIRUSES OF MICROBES



20 18-22
Guimarães JULY
PORTUGAL **22**

THE LATEST CONQUESTS

PROGRAM AND ABSTRACT BOOK

Mycoviruses

Cryphonectria hypovirus

Chestnut blight

Natural Spread of Mycoviruses a Puzzling and Dazzling Issue for Biocontrol of Chestnut Blight by *Cryphonectria Hypovirus*

Eugénia Gouveia ^{1,3}, Luísa Moura ^{2,4}, Valentim Coelho ^{1,3}

1. Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

2. Instituto Politécnico de Viana do Castelo, 4900-347 Viana do Castelo, Portugal

3. CIMO - Centro de Investigação de Montanha, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

4. 2CISAS - Centro de Investigação e Desenvolvimento em Sistemas Agroalimentares e Sustentabilidade

Correspondence:

egouveia@ipb.pt

Mycoviruses are widespread viruses in filamentous fungi considered ubiquitous in all groups. *Cryphonectria hypovirus 1* (CHV1) of the Hypoviridae family is included in the genus *Hypovirus*. Hypoviruses are well-studied biological control agents of chestnut blight, a lethal disease of *Castanea sativa* Mill. Unlike many mycoviruses, which are cryptic or latent in their host, CHV1 reduces virulence, reduces pigmentation and sporulation and induces female sterility in its host, the *Cryphonectria parasitica* fungus. Chestnut blight was introduced in Portugal and rapidly became a severe lethal disease in all chestnut regions in the 90's. Initial epidemics had a very rapid spread and no or few cases of hypovirulence were reported. Besides scientific issues, therapeutic hypovirulence was introduced as a biological control to mitigate disease impact. Later, in 2013 chestnut blight appears in scattered stands of the coast north Minho region where natural spread is the dominant way of hypovirulence spread. In this study we investigate and specifically address the question of the massive natural spread of hypovirulence. We studied vegetative compatibility system (*vic genes*) of the host fungus, presence and characterization of CHV1 subtypes and hypovirus transmission capacity, issues that play a key role in hypovirus spread. Although some different results are obtained, major key determinants and driving forces to improve natural hypovirus spread are still unclear and new approaches as (HTS) high throughput sequencing will be valuable to understand the driving forces of natural dissemination that will greatly increase field sustainability of therapeutic applications of hypovirulence and chestnut recovery.