

*6th European
Conference
on Fungal
Genetics*

*6-9 April, 2002
Palazzo dei Congressi
Pisa - Italy*



Abstract Book



Incidence of viruses in natural populations of the grass endophyte *Epichloë festucae*

I. Zabalgogezcoa, A. García Ciudad, B.R. Vázquez de Aldana and B. García Criado

IRNA, Consejo Superior de Investigaciones Científicas, Cordel de Merinas 40-52, Salamanca 37008, Spain

Epichloë festucae is a fungal endophyte which infects the grass *Festuca rubra*. In most cases, infected plants show no symptoms, and increased resistance to insects and better performance under abiotic stresses have been observed in infected plants. Two different virus-like agents have been identified in isolates of *Epichloë festucae*. A spherical particle of 50 nm in diameter contains a 5 kbp double-stranded RNA genome, while a smaller 2.5 kbp dsRNA segment is not encapsidated. We have identified isolates infected by each virus-like agent as well as by both. In all cases, infected isolates show no obvious symptoms. In natural grasslands of Western Spain, about 70% of the *Festuca rubra* plants are infected by *Epichloë festucae*. In an study done in two populations of red fescue, it was found that the frequencies of viral infection in *Epichloë festucae* isolates were of 67 and 85%. Since not all the infected isolates are the product of clonal propagation of the same fungal genotype, and transmission by anastomosis is the only known mechanism of transmission for fungal viruses, it is likely that the viruses are transmitted by contact among fungal isolates. This grass-fungus-virus relationship appears to be a three-way symbiosis.