

## **VIRUS INFECTIONS IN *OPHIOSTOMA* AND *CERATOCYSTIS***

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Viruses or unencapsulated RNA/dsRNA elements have been detected in all major classes of fungi. In many cases, studies of these elements have been driven by their potential to be used as biological control agents of plant pathogens. Based on structure and genomic organization, most mycoviruses have been grouped in the viral families *Totiviridae*, *Partitiviridae*, *Hypoviridae*, *Narnaviridae* and *Barnaviridae*. Three groups of viruses have been reported in the Ophiostomatoid fungi. The most intensively studied are those occurring in the serious tree pathogen, *Ophiostoma novo-ulmi*. These include dsRNA elements of 0.33–3.5 kbp in size, which are located in the mitochondria of fungal isolates showing hypovirulence characteristics. At least four of these have been identified as Mitoviruses, which are unencapsulated and only encode for a RDRP-like protein. A dsRNA virus belonging to the family *Partitiviridae* has been discovered and characterised in *C. polonica* isolates showing low levels of virulence on Norway spruce in Austria. This virus, tentatively named as *Ceratocystis polonica Partitivirus*, consists of two dsRNA segments that encode for a putative RDRP and a capsid protein. It is also present in a number of species belonging to the *C. coerulescens* complex on conifers. Three different virus groups have been reported in *Thielaviopsis elegans*, including a Totivirus (5.3 kb dsRNA), Mitovirus (2.8 kb dsRNA) and a 12 kb dsRNA, not related to any known virus group. Occurrence of mycoviruses in the Ophiostomatoid fungi raises questions regarding their impact on the ecology and epidemiology of these fungi and it might offer prospects for biological control. Mycoviruses also have the potential to be used as tracking markers in ecological and phylogeographic studies. It would thus be interesting and worthwhile to screen for the presence of viruses in greater numbers of *Ceratocystis* and *Ophiostoma* species and to undertake in-depth studies of the phenotypic effects of mycoviruses on their fungal hosts.