

OPHIOSTOMA MINUS: A COMPLEX OF SPECIES

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The blue-stain fungus *Ophiostoma minus* is a well-known associate of bark beetles such as *Dendroctonus frontalis* and *Tomicus piniperda*. Dispersal by mites and other arthropods may explain its occurrence on felled timber in the absence of bark beetle attack. Furthermore, it is also vectored by mites that are specifically carried by bark beetles. *Ophiostoma minus* is an economically important agent of sapstain on various pine (*Pinus*) species and it displays relatively high levels of virulence to its tree hosts. *Ophiostoma minus sensu lato* represents a group of species characterised by perithecia with relatively short necks and *Hyalorhinocladiella* anamorphs. A *Leptographium* or synnematosus type synanamorph has occasionally been reported for these fungi. What might best be considered as the *O. minus*-complex includes four distinct taxa that can be discriminated based on DNA sequence comparisons, RAPD's and their respective mating systems. These taxa also differ in their ecology and geographic distribution. Based on recent comparisons *O. pseudotsugae*, once considered to be a synonym of *O. minus*, is now recognised as a distinct species. DNA sequences of the ITS ribosomal gene region and the β -tubulin gene further distinguish between the European and North American strains of *O. minus*, although they have not yet been formally designated as separate taxa. Isolates from the two geographic regions form distinct groups and the data indicate that geographic divergence may be taking place within *O. minus sensu stricto*. A fourth taxon, *O. kryptum*, is morphologically similar to the other species in this complex. It is, however, associated with *Tetropium gabrieli* on larch in Europe. *Ophiostoma kryptum* also has distinct ITS and β -tubulin gene sequences that separate it from other species in the group. Molecular techniques have redefined the way we interpret species delineation and continue to offer further insights into species in the *O. minus* complex.