

Mixed inoculation alters infection success
of strains of the endophyte *Epichloë bromicola*
on its grass host *Bromus erectus*

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Abstract

Within-host competition in multiply infected hosts is considered an important component of host-parasite interactions, but experimental studies on the dynamics of multiple infections are still rare. We measured infection frequencies of four strains of the fungal endophyte *Epichloë bromicola* on two genotypes of its host plant *Bromus erectus* after single- and double-strain inoculation. Double-strain inoculations resulted in fewer double, but more single infections than expected on the basis of infection frequencies in single-strain inoculations. In most cases, only one of the two strains established an infection, and strains differed in their overall competitive ability. This pattern resembles the mutual exclusion scenarios in some theoretical models of parasite evolution. In addition, competitive ability varied with host genotype, which may represent a mechanism for the coexistence of strains in a population. Hence, considering the genetic variation in both host and parasite may be important for a better understanding of within-host dynamics and their role in epidemiology or (co)evolution.