

Abstract Submitted
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Bacteriophage-mediated indirect competition in *B. bronchiseptica*: Experiment and Theory JAEWOOK JOO, Department of Physics, Pennsylvania State University, REKA ALBERT, Department of Physics, Pennsylvania State University, ERIC HARVILL, Department of Veterinary, Pennsylvania State University — We demonstrate empirical evidence of bacteriophage-mediated indirect competition in microbiological populations. The bacteriophage-mediated competition acts between two genetically identical bacterial strains that differ only in that one is the carrier of a temperate lysogenic phage and the other is susceptible to the phage. We observe that in spite of the absence of direct competition the strain with lysogenic phage successfully invades and outcompetes the resident strain susceptible and more vulnerable to the phage. The amount of indirect competition is dependent on the susceptibility and the phage-induced mortality of the resident bacterial strain. We develop mathematical models of the phage-mediated competition and reproduce its dependence on mortality.

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