

The Temperature-Dependent Inhibition of *Pseudogymnoascus pannorum* by *Pseudomonas protegens*

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The purpose of the research was to determine if temperature had a significant effect on the zone of inhibition produced by the bacteria *Pseudomonas protegens* against the fungus *Pseudogymnoascus pannorum*. *P. pannorum* is closely related to the causal agent of White-Nose Syndrome, which is responsible for mass mortalities in North American bat populations. A biological treatment would mitigate the environmental risks associated with widespread chemical use. Plates were prepared by aseptically pouring 1 mL of fungal conidia solution onto agar and then inoculating three evenly-spaced points with bacteria. Eight assay plates were incubated at 7, 13, 19, and 25°C each, and zones of inhibition were measured in millimeters after six days. A single-factor ANOVA test on the data resulted in a p-value of $7.1E-25$ when compared to an alpha value of .05. A post-hoc Tukey test then returned a Dmin value of 2.5, which was lower than all group mean differences and indicated significance among all groups. The research hypothesis that if *Pseudomonas protegens* is inoculated on lawns of *Pseudogymnoascus pannorum* conidia and cultured at temperatures of 7, 13, 19, and 25°C, then the zone of inhibition created by *Pseudomonas protegens* will increase as temperature increases was supported by the data. In conclusion, temperature had a significant effect on the zone of inhibition produced by *Pseudomonas protegens*.