

PI: Leslie, John F.

PI's E-mail: jfl@ksu.edu

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Project Title: Effects of Defense Peptides on Fusarium Head Blight

PROJECT 1 ABSTRACT

(1 Page Limit)

Small peptides, including mating pheromones and sequences derived therefrom, are known to inhibit spore germination and germling growth by *Fusarium graminearum*. We will systematically evaluate a number of these peptides for fungicidal and fungistatic activity in the laboratory and for the ability to reduce Fusarium Head Blight and deoxynivalenol production in the greenhouse on a susceptible wheat variety. We will produce antifungal peptides in a *P. pasturis* protein synthesis system with ZmCKX as the scaffolding protein. We anticipate identifying some peptides with significant antifungal activity and that the ZmCKX scaffold will preserve or increase the antifungal activity of the original small peptide. Crude protein preparations from cells expressing fusion proteins whose small peptide portion has significant fungicidal or fungistatic activity will be tested as potential preparations from which a product for controlling Fusarium Head Blight could be developed.