



Bio-Protection

Bioprotection science for New Zealand

Abiotic stress and the emission of herbivore-induced plant volatiles: how does this affect natural enemy attraction?

Principal Investigator: Dr Michael Rostás michael.rostas@lincoln.ac.nz

Abstract: Insect herbivores induce the emission of plant volatiles that are attractive to parasitic wasps. This mechanism is termed indirect defence and is regarded as a plant's 'cry for help'. We will investigate how abiotic factors such as varying phosphate levels modulate indirect defences in a tritrophic system consisting of beans, a caterpillar species (*Epiphyas postvittana*) and its natural enemies. A factorial field experiment will be carried out that assesses the rate of parasitism in relation to phosphate availability and volatile emission. Parameters of plant growth and physiology e.g. plant volatile emissions, chlorophyll fluorescence and gas exchange will be measured.