

## 2Hp04 Life Cycle and Temporal Variation of the Fungal Pathogen *Ophiocordyceps unilateralis* on Formicine Ants in a Tropical Forest

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*Ophiocordyceps unilateralis* infects ants by causing a change in their behavior before killing them and is found in many countries around the world. One unifying concept of all such parasitic associations is that both the parasite and the host adapt to increase their fitness and reproductive output to the highest. However, little is known about the reproductive life span of this pathogen or about its alternation between asexual and sexual states, even though these two states affect host population dynamics differently. To address these issues, a permanent plot in Khao Yai National Park was surveyed over the course of two years to examine the development of *O. unilateralis* and the incidence of infection of two Formicine ants, *Polyrhachis* and *Camponotus*, which were found to be specifically attacked by this fungus in Thailand. We document here for the first time the life cycle of this pathogen over the long term, which provides fundamental knowledge for the understanding of this fascinating host-parasite interaction.

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## 2Hp05 Chromium Bioreducing Rhizobacteria for Phytoremediation

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Cr(VI) is considered a priority pollutant. Leather tanning is one among the major sources of Cr(VI) pollution. Phytoremediation has been widely pursued for the cleanup of heavy metal from contaminated. Phytostabilization and phytoextraction are among subsets of technology that can be classified into phytoremediation. Phytoremediation efficiency is determined by two key factors: metal accumulating capacity and biomass production of the plants. The difference is that in phytostabilization the heavy metals are preferably accumulated in the root, while in phytoextraction they are preferably accumulated in shoot. Rhizobacteria have the ability to alter chromium uptake and its translocation by plant. Rhizobacteria have been shown to possess several mechanisms capable of altering metal bioavailability for uptake into roots including their ability to catalyze redox reactions leading to changes in metal mobility in soil and propensity for uptake into roots. At the same time, rhizobacteria have also been shown to possess mechanisms capable of altering metal translocation from roots into shoot including their ability to produce organic acids which act as chelator.

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**Key words** Ophiocordyceps unilateralis, entomopathogen, Formicine ants

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