



## Study on evolutionary ecology using insects

All of organisms including agricultural products of material are product of evolution. All of them are influenced from environmental and ecological factors. Therefore, understanding of evolutionary ecological mechanisms is important to consider all living thing. We are grappling with researches in the mechanism of evolutionary ecology using mainly insect species. We focus on insect behaviors including anti-predator behavior, courtship and mating systems, biological interactions of insect species. Concretely, there are specialized research theme concerning mating system, sexual selection, sperm competition, insect immobility, dispersal tactics, interaction between environments and insect behaviors, using insects.



## Research on insect behaviors for applied entomological techniques



In addition to the basic researches in evolutionary ecology, we can apply these results to output concerning applied entomology and insect pest control. Understanding insect behavior connect to some applied entomological techniques; for example, monitoring and detecting the beetles using lights and/or pheromone in a laboratory and a storehouse, attraction methods using ultra violet I or blue lights and lure, or breeding of flightless beetles. In addition to these researches, we concern some relationships between native and invasion insects from the world including common pill bug, sweet potato weevils, fruit flies, and broad-horned flour beetles.

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