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## Weaver Ants Convert Pest Insects into Food — Prospects for the Rural Poor

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### Abstract

Weaver ants of the genus *Oecophylla* prey on pest insects. The ants live in the canopies of tropical trees and bushes including most perennial crops. They are able to protect crops against more than 50 pest species and are increasingly applied in tropical biocontrol. The ants have been used in biocontrol in South-East Asia for at least 1700 years. Ants have been shown to be more efficient than chemical pesticides and may thus facilitate organic production. It is less known that the ants are utilised as a human food resource in some countries as they are edible, easily collectable and have high protein content. In a first attempt to combine ant biocontrol with ant harvest we measured ant biomass yields and tested if traditional ant harvest affected the biocontrol potential of the ants in a Thai mango plantation. Yields ranged from 32 to 105 kg ant brood ha<sup>-1</sup> year<sup>-1</sup> (wet weight) according to management intensity of the ant colonies. Moreover, neither worker ant densities nor colony survival were negatively affected by the harvest pressure, suggesting that ants can be concurrently utilised for biocontrol and farmed for food as well. In this scenario, and at no additional costs, plantations function as “substrates” where damaging pests are eaten by ants and converted to valuable edible ant-biomass. Positive side effects are increased crop yields, independence of chemical pesticides and organic production.

*Oecophylla* ants are present in 37 of the 45 countries identified by FAO as having the highest rates of hunger. This geographic match also match nicely with cultural affinities for insect eating, consequently the implementation of combined ant biocontrol and ant farming may improve food security among the world’s poorest people. With average meat consumption in sub-Saharan Africa of 9.4 kg capita<sup>-1</sup> year<sup>-1</sup> one hectare smallholder plantation may double at least three people’s intake. Further, the introduction of the method to developing countries may be eased by the fact that the technology is readily available and “low tech” - the ants are already present and require no external input, except knowledge.

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