# Implementation of a new rearing technique of Ooencyrtus pityocampae and Ooencyrtus kuvanae (Hymenoptera: Encyrtidae) to develop the biocontrol of lepidopterous pests in forest

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In France, there are three major lepidopterous pests in the forest area: *Thaumetopoea pityocampa*, *Thaumetopoea processionea* (Thaumetopoeidae) and *Lymantria dispar* (Lymantriidae). These pests invade new forest sites because of global warming. Biological control is one of the main control methods that should be applied in forest. Three egg parasitoids, *Ooencyrtus pityocampae*, *Ooencyrtus masii* and *Ooencyrtus kuvanae* (Hymenoptera: Encyrtidae), can be used to control these pests. However, it is difficult to rear these parasitoids on their natural hosts in laboratory because of pest univoltine cycle and *Thaumetopoea* allergen characteristic. Therefore, alternative hosts are needed to rear parasitoids. Several potential hosts were tested in our laboratory. *Philosamia ricini* (Lepidoptera: Saturniidae) was selected for beneficial insects mass-rearing. This alternative host has several advantages: it's easy to rear on widespread host plants (*Ligustrum vulgare* or *Ailanthus spp*.), it is not subject to diapause, it has big eggs attractive for many parasitoids species and is a multivoltine species. In this study, biological characteristics (emergence rate, development time, longevity and fecundity) of *O. pityocampae* and *O. kuvanae* were investigated on the new alternative host, *P. ricini*, under laboratory conditions (25±1°C, 70±5% R.H and 16L: 8D). Thus, we conclude that *P. ricini* has great potential for the rearing of *O. pityocampae* and *O. kuvanae*. Therefore, we can develop biological control programs on these three lepidopterous pests.

Key-words: lepidopterous pests, egg parasitoid, alternative host, biological control, forest