

## Oak Processionary Moth Identification, Biology & Management

Dr Glynn Percival and Dr Luke Hailey

Oak processionary moth (OPM) caterpillars can defoliate oaks (English, Sessile and Turkey). The caterpillars are a significant human health risk, as the older ones (instar  $\geq 3$ ) are covered in small irritating hairs that contain a urticating and sensitising toxin (thaumetopoein). Contact with these hairs can result in irritation (dermatitis) and allergic reactions (rashes, conjunctivitis, sore throats) in humans and other animals. Reactions can become more severe with repeated exposure. Although uncommon, inhalation can result in breathing difficulties. Hairs may be blown by the wind, can cause a reaction over a year after being shed, and are present in large amounts in OPM nests. Only individuals with specialised training should attempt to control OPM. The larvae (caterpillars) will also feed on the foliage of hornbeam, hazel, beech, sweet chestnut, and birch. Infestations of OPM caterpillars were first found in London in 2006 and have been spreading outwards since.

### Symptoms

OPM larvae (Figure 1) feed on oak leaves. Large populations can defoliate trees leaving them weakened and vulnerable to other threats.

Figure 1: OPM larvae



Larvae may be seen massing on the trunks and branches of trees and moving in characteristic nose to tail processions (Figure 2). They produce silk around their trails.

Silky masses/nests of larvae or pupae may be visible on the bark, especially around branch unions, often a teardrop, dome, blanket, or similar

shape. These remain hazardous and on the tree for long periods. The white silk quickly discolours.

Figure 2: Typical nose to tail procession



### Causal Agent

The larvae hatch from overwintered egg plaques laid by adults the previous year. Unfortunately, these are small and hard to find, remove, or treat.

Newly hatched larvae have a uniformly brown body and dark head. By the time they are mature, they have a grey body and dark head. These older larvae have a single dark stripe running down the

middle of the back and a whitish line along each side (Figure 1).

Eggs are laid from July to early September. Larvae hatch from the eggs in April. There are six stages (instars) during the larval feeding cycle (L1-L6), with the larvae getting progressively bigger from one moult to the next. The hairs develop at L3. L4-L6 larvae represent the greatest health hazard.

## Control

OPM poses a new and difficult management problem. Applications of appropriate plant protection products can successfully manage this pest in appropriate areas, e.g., parks and gardens where the risks to humans are greatest.

A biologically based control option is available which is targeted specifically towards caterpillars, significantly reducing impacts on other insects. However, due to the high ecological value of oak, research continues into even more targeted treatments directed solely at this pest. Current research elsewhere in Europe shows promise for using large amounts of OPM specific pheromone to stop male moths finding females, reducing egg numbers and the need for other treatments.

**Nest removal:** Removing and destroying the nests during the daytime in May and June will kill most of the larvae but destroying them between late-June and the end of July should kill all the pupae. However, nest removal requires specialist training, personal protective equipment, and nest disposal methodology. Nest removal should NEVER be performed by non-trained individuals.

Natural biological controls are beginning to build (Figure 3) and may be useful in control strategies.

Figure 3: Specialist parasitoid *Carcelia iliaca* laying eggs on an OPM nest. Its larvae parasitise OPM caterpillars.



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