

Standard Operating Procedure

- SOP Ref No:** Plant Health 9
- References:** Arboriculture and Forestry Advisory Group (AFAG) publications, Health & Safety Industrial Guidance (INDG) , Hazardous waste: Interpretation of the definition and classification of hazardous waste WM2, manufacturer's information
- Key Words:** Oak Processionary Moth (OPM), urticating hairs, larvae, pupae, nests, trees, mobile elevated working platforms, personal protective equipment, vacuum cleaner, removal, waste management
- Category:** Techniques
- Title:** **Removal of Oak Processionary Moth material by professional vacuum cleaner**
- Scope:** The SOP describes the removal by professional vacuum cleaner of live and dead OPM material (eggs, larvae, pupae, emerging moths, nests, hair, exfoliated bio matter) from trees and other surfaces. Access for removal includes pedestrian, climbing and mobile elevated working platform methods. It does not include any other manual or motor manual method.
- Amendments** Written July 2010.
- Background:** OPM caterpillars have urticating (irritating) hairs that carry a toxin which can be blown in the wind and cause serious irritation to the skin, eyes and bronchial tubes of humans and animals. They are considered a significant human health problem when OPM populations reach outbreak proportions. This SOP describes a system for vacuum removal of OPM material which is designed to minimise contamination as far as is reasonably practical.
- Method:**
- 1. Constraints check**

Before any site work is completed a thorough access and site constraint check is required. Access for vehicles and equipment can be physically constrained by height, width, length and weight restrictions. Site conditions may be locally soft or steep, with manhole covers and local services with unknown weight bearing capability. Special training may be required for access to some site types, i.e. railways. There may be parking restrictions in residential areas and on main roads, i.e. 'red routes' in London.

It is not possible to list all site constraints but examples to illustrate range will also include; services, Tree Preservation Orders, designated sites, public rights of way and fauna such as roosting bats.

Use this hierarchy for managing and selecting equipment for work at height:

 - (a) avoid work at height wherever possible,
 - (b) use work equipment or other measures to prevent falls where working at height cannot be avoided,
 - (c) where the risk of a fall cannot be eliminated, use work equipment or

other measures to minimise the distance and consequences of a fall should one occur.

2. Site management

Working in built up areas will attract public interest with a range of reactions. Good liaison before work starts and during work will help with work management.

Barriers and signage with on site management will be required to exclude public from the immediate work area, a banksman may be required. Potential hazards to the public will include falling woody debris, equipment and possibly OPM material. Working on or close to main roads will require additional risk assessment and liaison with highway authorities.

Heavily infested trees with older OPM debris will require extra vigilance in all cases.

Where conditions allow, operators may consider the use of plastic sheets laid on the ground to collect falling OPM debris. The sheet can be vacuum cleaned after use. Technique will be particularly relevant with heavily infested trees.

3. Personal Protective Equipment (PPE)

A robust approach to PPE is required. PPE such as safety boots and chainsaw trousers where required should be protected by PPE worn to reduce exposure to OPM, the latter designated as OPM PPE in this SOP.

Risk of heat stress should be explained to all operators and working methods managed on site to reduce the risk. See Health & Safety publication Heat stress in the workplace.

What you need to know as an employer

General Information Sheet 1.

All operators and managers working in and around the OPM site should wear appropriate PPE to meet risk assessments. Operators removing OPM material from the tree and working in the mobile elevated platform should have OPM PPE systems that completely cover all skin and hair. OPM PPE will include gloves, pesticide spraying suits and power-assisted full facemask respirators with disposable filter cartridge systems.

Head protection to EN 397 and eye protection to EN 166 is required. Integral hoods on PPE should be pulled up over the head and respirators worn over the hood interface. Wearing arboriculture or forestry helmets with ventilation provision and reusable full-facemasks can expose operators to contamination.

Plate 1 shows full head, face and neck cover, to EN 397 and 166 and a respirator system giving an assigned protection factor of 20.

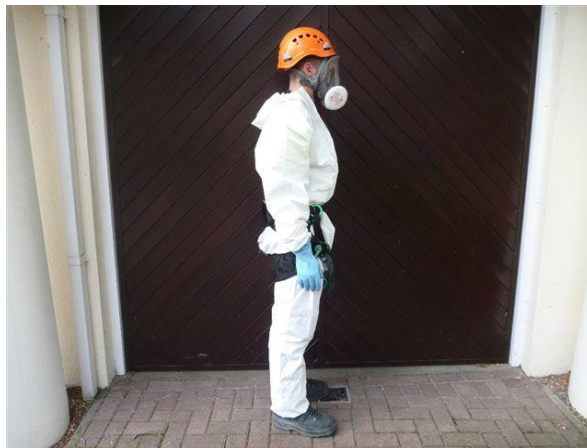
Plate 2 shows an arboriculture helmet worn with a reusable full-facemask.

The hood of the PPE has not been pulled up and the helmet has ventilation provision. Both these factors will expose the operator to contamination and this is not recommended.

Plate 1 Full PPE cover including head and neck



Plate 2 Operator's head and neck exposed to contamination



Disposable pesticide coveralls should be used.

Coveralls can be damaged during tree climbing (Plate 3) and so all PPE used for OPM work should be OPM specific and not used for other operations.

Plate 3 PPE ripped during climbing



All disposable PPE should be placed in bags for hazardous waste disposal and other PPE washed or wiped down and contaminated cleaning materials bagged for disposal. OPM hairs are barbed and it is understood that the toxin maybe stable to 60 degrees centigrade and the hairs may require exposure to higher temperatures before they are no longer harmful.

4. Equipment management

All climbing equipment used for OPM work should not be used for other work. It should be stored in an airtight container and marked for OPM use only during transport and PPE should be worn during equipment maintenance and inspection. The container should be marked with a warning label, use an exclamation mark within a yellow triangle.

5. Vacuum cleaner

Professional vacuum cleaners may be 110 volt, 240 volt or petrol powered. Cleaners must be operated in appropriate weather conditions and 110 volt systems used in preference to 240 volt systems where practical. If equipment operating at 230 volts or higher is used, an RCD (residual current device) can provide additional safety. Please refer to HSE publication *Electrical safety and you* for best practice. Use a risk assessment to support choice of power supply.

Plate 4 shows a larger 110 volt vacuum cleaner and Plate 5 shows a smaller 240 volt model which is also available with a 110 volt motor.



Plate 4 Large 110 volt vacuum cleaner



Plate 5 Small 240 volt vacuum cleaner (also available with 110 volt motor)

Vacuum cleaners lifted into trees on ropes must be supported in harnesses suitable for aerial tree work. Latches and handles can fail if used to support vacuum weight. Vacuum cleaners must be secured to Mobile Elevating Work Platforms (MEWP)s.

Cleaners should be capable of working to a High Efficiency Particulate Air filter (HEPA) specification. Filter specifications of H14 have been used for OPM material removal and H13 should also meet requirements. The length of OPM urticating hairs has been measured at between 0.13 mm and 0.24 mm, although they may break into smaller lengths. Using the EN1822 method, a H13 filter should be capable of filtering 99.95% of the most penetrating particle size (mpps) and the particle size range is between 0.0001 mm and 0.0002 mm. A H14 filter should be capable of filtering 99.995% of mpps.

During access and subsequent presentation of vacuum cleaner nozzle to OPM material, care must be taken so that OPM material is not dislodged by access or the vacuum nozzle. Position nozzle to ensure that loose material is removed first.

OPM material is collected in the vacuum bag and sealed in a plastic bag for extra security. It should be stored in a safe and secure container for subsequent disposal. This material **must be labelled as** hazardous waste. Use exclamation mark within yellow triangle.

6. Mobile elevating work platforms (MEWPs)

Please refer to Arboriculture and Forestry Advisory Group publication 403 Mobile elevating work platforms (MEWPs) for tree work.

After use the MEWP should be vacuum cleaned to remove any OPM material.

Operators should not drive vehicle based MEWPs, whilst wearing PPE that may be OPM material contaminated.

7. Tree climbing

Please refer to AFAG 401 *Tree climbing operations*.

8. Waste disposal

Using the Environment Agency Technical Guidance publication WM2, OPM material containing urticating hairs would be classed as “H4 Irritant: non corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.”

Because OPM material should be treated as hazardous waste, all persons involved with waste management should refer the Environment Agency guidelines on moving and disposing of hazardous waste.

Maintenance: All equipment used for OPM removal should be maintained and tested following relevant legislation and industry guidelines.

Calibration: Review SOP on a yearly basis.

Validation: Validation should be completed on a yearly basis

Operator Competence: All operators should be appropriately trained. Training will be required for MEWPs, tree climbing and rescue, vehicle driving , vacuum cleaner use and handling of waste, PPE management and arboriculture operations, where operators perform these operations.

Bibliography: The following AFAGs are recommended as sources of further reading. This list is not exhaustive.

Using petrol-driven chainsaws	AFAG 301
Top-handled chainsaws	AFAG 308
Tree climbing operations	AFAG 401
Aerial tree rescue	AFAG 402
Mobile elevating work platforms (MEWPs) for tree work	AFAG 403
Emergency planning	AFAG 802
Electricity at work: Forestry and arboriculture	AFAG 804
Training and certification	AFAG 805
First aid at work: Your questions answered	INDG 214
Using work equipment safely	INDG 229
Managing health and safety in forestry	INDG 294
Protect your hearing or lose it!	INDG 363
LOLER: How the regulations apply to arboriculture	AIS30
Hazardous waste: Interpretation of the definition and classification of hazardous waste	WM2
Heat stress in the workplace. What you need to know as an employer	GIS 1
Electrical safety and you	INDG231
A Guide to the use of MEWPs in Arboriculture	Arboricultural Association

Health and Safety: A number of different operations are used in a wide variety of site types to remove OPM material.

All operations should be covered by an integrated risk assessment which acknowledges how risks relate to each other in this type of work.

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