



## Biosecurity best practice for safe disposal of plant waste and spent growing media

Research has shown that plant waste and spent growing media can harbour pests and pathogens, including quarantine-regulated species such as *Phytophthora ramorum*. These organisms have the potential to spread from untreated waste piles to cultivated plants and the wider environment. This guidance aims to help the horticultural sector understand and mitigate these risks by providing some practical advice on waste management.

*Waste and environmental legislation is a devolved issue so please note that if you are using this guidance outside Scotland, the relevant [national licencing authorities](#) will need to be contacted.\**

### Minimise waste and risk of infected waste material by growing clean plants

The best way to limit waste volumes and to minimise the risk of pests and pathogens proliferating in waste is to ensure that plant stock is sourced and grown to high standards of biosecurity and is monitored frequently to ensure that plants remain visibly healthy/symptom-free. Various types of growing media ingredients and mulches (e.g. pot tops) can also harbour and be sources of pests/pathogens.



Implementing robust risk assessment measures based on the type and provenance of live plant material and associated components required for their cultivation and movement will help minimise the risk of plant pests/pathogens arriving onto site (see Plant Healthy Certification Scheme at the end of this document).

## Waste storage prior to disposal

Waste material should be managed in a way that minimises the risk of spreading pest/pathogens. Ideally, any on-site waste storage should be situated on hard standing (e.g. concrete) with clear separation from growing stock, hedgerows, woodlands or water courses. Separate holding areas should be established to accommodate storage of different forms of waste (e.g., plant waste, cardboard, plastic) until they can be properly disposed of. Plant waste heaps should also be covered to prevent water ingress and run-off after rain.



Separate waste bays at Nicholson's Nursery, Oxfordshire.

## Disposal of waste plant material and spent growing media

Any plant or other material that is suspected of being infested or harbouring a notifiable pest or pathogen must be contained on site and be reported to [SASA](#) in Scotland (APHA in England and Wales, DAERA in Northern Ireland), who will advise on the required treatment.

All other waste material can be managed through the following methods:

- On-site composting
- Incineration with relevant permit in place
- Disposal at a landfill site
- Removal to commercial composting facility by waste management company

## On site composting

Composting (< 1,000 tonnes at any one time) is permitted in Scotland under a Waste Management Licence Exemption (WMLE) (Paragraph 12). Those wishing to run a composting operation of any scale up to 1,000 tonnes of waste per year must register their operation under this exemption with SEPA. There is no charge where less than 100 t/year is being composted (a charge of around £500/year will be made where > 100 t is composted annually). Registration can be made online on the [SEPA](#) website.

Unless the composting operation is accredited under the UK Compost Certification Scheme to the BSI PAS100 standard, the resulting compost will remain a waste. It can therefore only be used on the premises on which it is made unless an application is made to SEPA to register its use in agriculture, field horticulture, landscaping or land restoration under a WMLE Paragraph 7 or 9.

For composting systems, The EPPO (European and Mediterranean Plant Protection Organization) guidelines recommend:

- The water content should be at least 40% (research has shown that a moisture content of 50 to 60% is best to ensure effective kill of pathogens in addition to appropriate temperatures).
- The entire quantity of materials being treated should be exposed either to a temperature of at least 55°C for a

continuous period of 2 weeks, or to a temperature of at least 65°C for a continuous period of 1 week.

- In the case of enclosed (in-vessel) composting facilities, temperatures of at least 60°C for 1 week are required in all parts of the waste.
- During the composting process (other than in-vessel systems), a minimum number of turns will be required to ensure that the whole mass of waste is exposed to this temperature.
- Note that pathogens which cause some plant diseases can survive the composting process; for example, *Plasmodiophora brassicae* (which causes clubroot) and *Armillaria mellea* (honey fungus).

## Incineration

Whilst this is a good option in terms of controlling plant pathogens in diseased material, it is only easily feasible for small quantities of relatively dry waste. Burning of other wastes (e.g. cardboard, waste wood or plastic) along with plant waste is not permitted. Controlled burning of plant wastes in an exempt incinerator or plant tissue in the open air is only allowed in certain circumstances and the farmer or grower must register an exemption with SEPA first. Exemptions are considered where the grower demonstrates that the activity will not pollute the environment or harm human health. Where burning is permitted, the grower must register the activity under either a Paragraph 30 exemption or under a Paragraph 29 exemption (at no cost). This can be done online on the [SEPA](#) website.

## Disposal to landfill

Landfill is still permitted in Scotland, but Scottish Government intend implementing a ban on sending organic waste to landfill in 2025. After that year, woody organic wastes

must be treated through alternative means including composting, dry anaerobic digestion or incineration. The gate fees for submission of organic wastes to landfill are currently (October 2022) between around £93 and £187/tonne (considerably more expensive than composting and therefore a less favourable option. The cost of haulage to the nearest landfill site must also be added to the cost of this option).

## Removal to commercial composting facility

Commercial composting by a facility accredited under the UK Compost Certification Scheme to the BSI PAS100 standard is an effective, environmentally sustainable option for treating plant wastes generated in nurseries and gardens. The gate fees for submission of organic wastes to PAS100-accredited facilities are currently between around £30 and £60/tonne, but the cost of haulage to the nearest site must also be added to the cost of this option. The distribution of suitable composting sites is very patchy in Scotland, with few sites in the less populated areas, thereby making commercial composting a financially realistic option mainly in the central belt.

## Uses of treated plant material and growing media

If the risk can be deemed low and the on-site composting procedures above are followed, the compost can be used on site. For example:

- Where compost is produced by a garden open to the public, then it may be possible to use well composted material as part of potting mixes for plants being grown on for planting in that same garden, but this is tricky and not advised. Note that compost produced in gardens and nurseries **remains a waste** unless it is accredited under the UK Compost Certification Scheme to the BSI PAS100 standard. Such compost should

not therefore be used as a component of growing media used to grow plants which are then sold off the nursery. In any case, it is very difficult to manufacture growing media of sufficient quality when using home-produced compost as one of the main constituents.

- As an additive to soils in ornamental and stock beds to add fertility and improve soil structure
- A surface mulch in ornamental and stock beds

## Understand your obligations

Follow plant health regulations, e.g. the notification scheme for importing some high-risk plant species, which, along with Plant Passports and Phytosanitary Certificates, aim to protect against the introduction and spread of pests. More details are available on the [Plant Health Portal](#).

## Plant Healthy Certification Scheme

One way of having confidence in the health of the plants you grow and handle is by becoming certified. The voluntary Plant Healthy Certification Scheme, now being rolled out in the UK, is based on the Plant Health Management Standard.

A focus of the Standard is identifying key notifiable pests and their life-cycles that present a threat to a business or organisation. The requirements present a pest management framework to minimise pest risk throughout a site and the associated operations.

Help safeguard our cultivated and native flora by promoting biosecurity across the supply chain by becoming Plant Healthy certified and by sourcing from horticultural businesses who are scheme members. More details are available at: [planthealthy.org.uk](https://planthealthy.org.uk)



### More information

Further details of our work on biosecurity are at:

<https://www.planthealthcentre.scot/>

\*National licencing authorities:

[Environment Agency](#)

[Natural Resources Wales](#)

[Northern Ireland Environment Agency](#)