

Managing green waste to reduce weed spread

FOR HOME GARDENERS

What is green waste?

Green waste usually refers to organic waste generated in gardens and includes grass clippings, leaves, flowers, weeds, garden prunings, twigs and branches. Sometimes the definition is extended to include domestic food scraps, particularly fruit and vegetable scraps. Animal by-products such as dairy, fat and meat scraps are excluded.

Why recycle green waste?

Recycling green waste reduces the amount of waste going to landfill, which reduces landfill costs and prolongs the lifespan of the landfill. Also, when green waste breaks down in landfills, it generates methane, a major greenhouse gas. Therefore recycling green waste can help reduce landfill greenhouse gas emissions, where methane is not being captured for energy generation.

Green waste can be recycled to provide valuable products such as mulch and compost. There are numerous benefits from using mulch and compost in gardens, including:

- reduced water requirements
- reduced soil moisture evaporation
- improved weed suppression
- increased organic matter in the soil
- soil carbon enhancement
- improved soil structure
- reduced soil erosion
- reduced leaching and runoff.

Many local councils provide green waste recycling services, either through kerb-side pick-ups or designated disposal sites at local waste management facilities. Home composting also provides an opportunity for gardeners to recycle green waste into useful compost.

However, recycled green waste products have the potential to spread weeds and pathogens (disease agents) if they are not correctly processed, so it is important for home gardeners to dispose of weeds and diseased plants appropriately. Green waste recycling systems differ between local councils—some will be able to accept weeds, others will not. Contact your local council to find out what garden materials can be recycled as part of the services offered in your area.

For home compost heaps, weeds and pest or disease infested material should be disposed of properly to prevent their spread into your own garden or your neighbours, or to surrounding bushland (Figure 1).



FIGURE 1. *Agapanthus praecox* ssp. *orientalis* has spread from gardens into the Blue Mountains National Park (IEWF)

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Shredded woody weeds (Figure 2) and soft grassy weeds (Figure 3) can make good compost. A well made compost pile will break down quickly and can become very hot—even hot enough to kill weed seeds! In commercial mulching and composting sites, weed seeds and pathogens are killed by maintaining high temperatures (above 55 °C). Such temperatures are usually only achieved with very large, carefully managed compost piles that are not realistic for the average home gardener. However, there are still a number of ways that you can stop weed spread when recycling your green waste and produce quality compost:

- Get to know which plants in your garden can be weeds in your local area and when planting new plants, select plants that are not weedy. Your local council or garden centre can provide advice and plants are sometimes labelled according to their weediness.
- Remove weedy plants, weed seeds and plant parts from weedy plants carefully. Weed seeds and plant parts that can shoot to form new plants should be placed in a sealed black plastic bag and left in the sun until destroyed. The bag's contents can then be added to your regular landfill garbage or green waste collection service, or added to your compost.
- Weed seeds found in open compost heaps are commonly not there from the start but are blown or transported in by animals. Covering your compost—with either a lid for containers, or old carpet or plastic sheeting for piles—helps prevent such problems. Covering compost piles has other advantages including: preventing plant material being spread by wind or animals; reducing nutrients being leached from the pile by rain; and helping to contain the heat and moisture required to kill soft-coated seeds.
- Shred green waste before composting to reduce the chance that your compost will contain viable plant shoots. This can also help your waste to break down more quickly.



FIGURE 2. Woody weeds such as privet can be shredded to make good compost, provided seedheads are removed and destroyed. (IEWF)



FIGURE 3. Soft weeds such as flat weed can make good compost, provided seeds are destroyed through heat treatment. (IEWF)

Composting green waste

A good compost heap requires **air**, **water** and **green waste**. The composition of the green waste is particularly important. All organic materials contain both carbon and nitrogen. The ratio of carbon to nitrogen (the C:N ratio) affects how compost breaks down. If the compost is too rich in carbon it will take a long time to break down, while too much nitrogen can often lead to smelly piles! Green waste will break down to compost best when there are about 30 parts of carbon to each part of nitrogen. This requires mixing both high carbon and high nitrogen green waste.

Carbon to Nitrogen ratio (C:N ratio)—The ratio of carbon to nitrogen in organic matter affects how quickly it is broken down by microorganisms.

Carbon feedstocks	Nitrogen feedstocks
Sawdust	Grass clippings
Woodchips or shredded woody weeds (Figure 2)	Soft weeds (Figure 3)
Paper/cardboard	Food scraps (excluding meat, dairy, fish)
Straw	Manure

Pile the heap or enclose it in bins on open ground that is free from grassy weeds such as couch. The bin can be made from bales of straw, old wooden pallets (Figure 4) or chicken wire (Figure 5)—anything that allows some air flow to the pile. Plastic bins can also be used but the waste may take longer to break down in designs that do not allow adequate air flow. Commercially available ‘tumbler’ bins allow for compost to be fully enclosed while also providing adequate aeration of the compost mix. Site the heap or bin in a sunny position to increase heat—this will increase the rate of breakdown and the chance of weed seeds (Figure 6) and other reproductive plant parts (Figure 7) being destroyed.

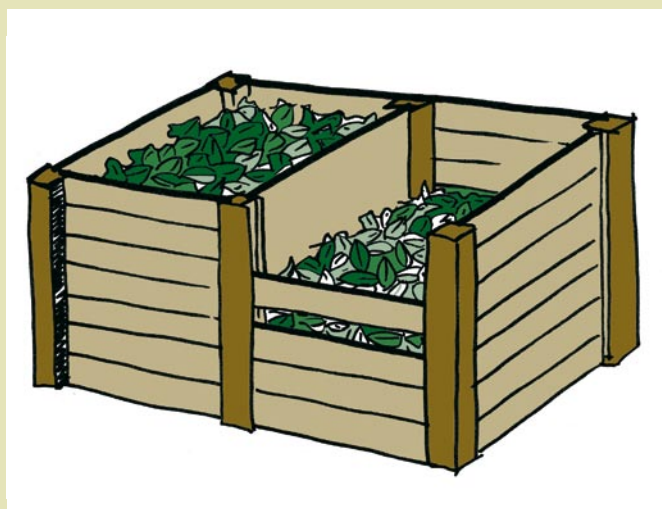


FIGURE 4. Wooden compost bin. The waste can be turned from one bin to the other to provide aeration and the front slats moved according to the size of the pile.

When building your compost, larger piles are better, provided they can be easily turned over to provide aeration. Ideally, the piles should be at least one cubic metre in size although smaller piles can still produce good compost. Turn the pile regularly and keep it moist—but not wet—especially in summer. Additives such as ‘blood and bone’ or lime may be used, but only sparingly to avoid burning more sensitive garden plants when using the end product—nutrient-rich, weed-free compost!



FIGURE 5. Chicken wire compost bin. Hessian bags or old carpet off-cuts can be used to line these bins to stop weed seeds from sprouting through the wire or entering the pile.



FIGURE 6. *Sonchus* seeds are blown into gardens and compost piles by wind. Covering the pile will prevent windblown weed seeds from settling. Siting the pile in a sunny position will increase heat and the chance weed seeds will be destroyed. (Robin St John)

FIGURE 7. Blue morning glory spreads by creeping stems. Shred such plant parts before adding them to the compost pile, sited in a sunny position to increase heat and the chance sprouting stems will be destroyed. (IEWF)



For more **information:**

Sustainability Victoria – ‘How to build a good compost heap’:

<http://www.sustainability.vic.gov.au/www/html/1654-how-to-build-a-good-compost-heap.asp>

New South Wales Department of Environment and Climate Change – ‘Easy Composting Guide’:

http://www.recyclingnearyou.com.au/documents/2005126_compost_eng.pdf

Australian Government – ‘Defeating the Weed Menace’:

<http://www.weeds.gov.au/publications/brochures/pubs/dwm-gardeners.pdf>

Unless otherwise indicated, photos provided by the International Environmental Weed Foundation (IEWF): www.IEWF.org



Australian Government

Department of Agriculture, Fisheries and Forestry
Bureau of Rural Sciences