

Sustainability in Gardening

Producing food locally is a great way to reduce your carbon footprint. However, gardening just in itself is not necessarily good for the environment. With the looming threat of climate change for the coming generation it is important to consider ways in which we can ensure that having a productive garden is beneficial to our environment.

While our garden plants absorb carbon dioxide and give out oxygen, it is an oversimplification to say that our garden plants reduce our net carbon emissions. There are many inputs to modern gardening methods that need to be questioned as they release significant quantities of greenhouse gases:



Strawberry plants in old welly boots

Fertiliser:

Almost all synthetic fertilisers that contain nitrogen will have been produced using the Haber Bosch process. This relies on converting the methane from natural gas into hydrogen first and the resulting by-product is CO₂, making commercial fertilizer production a large producer of greenhouse gases. To produce just one tonne of food takes one tonne of oil, one hundred tonnes of water and produces seven tonnes of greenhouse gases using modern industrial methods.

Peat:

Natural peat bogs are one of the earth's best carbon sinks – they absorb CO₂ from the atmosphere and lock it away. Many multi-purpose composts contain peat as it can help retain water. Buying compost or potting soil that contains peat has a negative carbon impact because it removes part of the earth's ability to absorb greenhouse gases. Amazingly nearly half of all compost sold in the UK still contains peat so if it doesn't say peat-free on the label it probably isn't!

Peat renews at approximately 1mm per year, therefore it is considered a non-renewable resource. Peat bogs are also home to a huge array of flora and fauna that thrive in such conditions. This includes birds, such as snipe and the skylark, which breed on peat bogs, as do many butterflies and dragonflies. It seems in our attempt to create our own little wilderness that we are selfishly robbing another.

Heat:

Heating greenhouses is a very inefficient process. There is no double-glazing and they're draughty because good ventilation is required for plants. Unless you're using

electricity from a renewable source to power an electric heater there will be a considerable carbon footprint.

Water:

Food gardening requires large amounts of water, especially during hot summers. When that comes from treated drinking water supplies the carbon footprint can be significant. A hosepipe can use 1000 litres per hour and the energy that went into treating and supplying that water is equivalent to leaving a 60W light bulb (or 5 low-energy light bulbs) running for the same period of time. The organisation which purchases the largest amount of electricity in Scotland is Scottish Water.

Non-renewable Resources:

Garden centres and gardening supply companies often promote their green credentials yet their bottom line is nearly always profit and persuading us to buy ever increasing amounts of hard goods. Everything they sell requires energy to produce, adding to your garden's carbon footprint.

Transportation:

Although growing food cuts out all the food miles that come from the food superhighway that supplies our supermarkets, there are still many garden products that are shipped around the world.

Once you take all these into account it's easy to see why the kind of easy gardening encouraged by garden centres could actually end up contributing to a higher carbon footprint, adding to the problem of climate change.

Gardening with a Tiny Carbon Footprint

Here are some possible ways to help cut down your carbon footprint in the garden:



Recycling newspaper to make biodegradable pots

Reduce, Reuse, and Recycle:

There are some excellent ways to reuse and recycle in the garden, from reusing yogurt pots as plant pots, and creating biodegradable pots using a paper potter, right up to home made composters made from pallets, as well as planters made from old bath tubs or old sinks, and CD bird scarers. We need people to move away from commercial quick-fix gardening to an awareness of how growing your own food can help offset the carbon footprint of our lives.

Avoid Peat:

It isn't easy to find high-quality compost for seeds and young plants since many peat-free types of compost come from composted wood chippings and are too coarse. Look for up-to-date reviews of different brands in gardening magazines. For example, *Which? Gardening* has awarded Best Buys for container compost to three peat-free varieties – Vital Earth Tub and Basket Compost, New Horizon Multi-Purpose Compost, and Vital Earth Multi-Purpose Compost. Another solution is to use coir products. Coir is a waste product from processing coconut fibre and it is shipped across the world to reach us. However, this shipping is low on the scale of transport-produced CO₂ and the resulting compost is so much better than alternatives.



Hydrating a coir block

For further information and advice about going peat free, contact RoWAN's Zero Waste Volunteers or visit <http://www.wasteawareScotland.org.uk/peatFree.asp>

Fertilise with Compost and Green Manures (cover crops):

There is now ample evidence that using good organic gardening techniques produces crops that are at least as good as non-organic and much better for our health and world. Composting everything you can reduces the methane emissions that would come from sending it to landfill and increases your garden's growth, a win-win situation. However, to keep methane emissions low, the composting needs to be well aerated so techniques such as hot composting where the pile is regularly turned to mix in air, are preferable.

Supplement Light not Heat:

It's much more efficient to start seedlings inside a heated house with full-spectrum grow-lights than to heat a light but draughty greenhouse. I have now taken to leaving my greenhouse empty over winter and raising seedlings with grow-lights in a bedroom (warm air rises in the house so it's naturally warm).

Use Grey Water:

With sensible precautions water from roofs, sinks and baths can be used around the garden rather than treated drinking water.