

The Ecological Impact of Organic Gardening

Gareth Davies and Ulrich Schmutz

Garden Organic Research
Garden Organic Ryton,
Coventry,
CV8 3LG.

www.gardenorganic.org.uk

Ecological Footprint Study

Garden Organic has:

- ongoing work on the ecological impact of gardening
- done a survey of members to find what resources they use to grow their own fruit and vegetables
- shown that home growing can represent a significant saving on the average 'food and drink' carbon footprint.
- advice on how gardeners can further reduce their impact

www.gardenorganic.org.uk

Ecological Footprint Study- garden size and use

- 93% grow fruit and vegetables, 7% veg only
- 72% in gardens, 16% on allotments, 21% on both
- average area 1955 m² (some large areas!)
- productive area; 36% (garden) cf. 52% (allotment)
- 10.4 hours per week work
- attitude to gardening; ½ leisure cf. ½ work or lifestyle



www.gardenorganic.org.uk

Ecological Footprint Study- input use

- manual tools get lots of use but last a long time (more than 20 years!)
- mechanical tools (lawnmowers etc.) get fair amount of use, last 10 years or more, obviously need fuel/energy
- 61% have glasshouses (1/5 heated) and wide range other protection used (cloches, environmesh, netting etc.)
- very high rates (98%) and volumes (4.5m³) compost
- 97% water veg; 90% collect and use rain water
- 93% use fridge and/or freezer to store produce
- various storage methods: bottling, chutneys, clamping, cool dry storage, drying, jam, pickles, wine

www.gardenorganic.org.uk

Ecological Footprint Study- inputs summary



- some sourced through long supply chain: slug pellets, plastic mulches, seaweed extract, commercial composts, chicken manure pellets, lime, seeds (lowish volumes!)
- some sourced close to home: farm yard manure, green waste compost, straw mulch (but often high volumes!)
- some made at home: compost, chicken manure, comfrey liquid, worm compost (intermediate to high volumes!)



Worm Composting



Composters

www.gardenorganic.org.uk

Ecological Footprint Study- outputs



- 60% ate their own produce daily, 34% weekly
- proportion veg consumption met by production varies:
 - 55% potatoes
 - 56% green leaf veg
 - 78% squashes
 - 82% sweetcorn
- similarly fruit (but more specialist area):
 - 50% apples
 - 53% pears
 - 80-100% soft fruit
 - 90% plums
- average saving £336 per year (self calculated)



Vegetables



Potatoes



Apple Trees



Soft Fruit Bushes

www.gardenorganic.org.uk

Ecological Footprint Study- footprint (summary)



- gardening produces around 1.71 t CO₂ per ha
- ecological footprint 0.68 gha per ha
- growing your own gives about a 6% savings in total food and drink footprint
- organic gardeners have a lower 'lifestyle' footprints and are more ecologically aware



www.gardenorganic.org.uk

Ecological Footprint Study- footprint (the implications)



- buy 'good quality' tools that last
- use manual tools where possible
- buy 'good quality' mechanical tools and keep them well maintained
- beware substituting long 'food chains' for long 'supply chains' fertilisers, pesticides etc (even organic ones) which all take energy to manufacture and transport.
- try and close nutrient cycles; produce amendments at home (e.g. comfrey), fix N in situ (e.g. green manures), compost biodegradable materials

www.gardenorganic.org.uk

Ecological Footprint Study- footprint (the implications)



- use protected cropping wisely to extend the season but avoid space heating with fossil fuels, recycle materials where possible
- reduce fridge and/or freezer use. Turn them off when not using. Buy new A++ rated energy-efficient appliances.
- producing food at home leads to other ecologically efficient habits (low overall footprint)
- as 'personal' footprint is reduced services and infrastructure footprint (spent on your behalf) becomes more important- solutions likely to be collective!

www.gardenorganic.org.uk