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Protect soil and plants from the sun

Bare soil not only provides ideal conditions for opportunistic weeds, but also heats up quickly and increases water loss through evaporation. Ground cover plants in combination with mulch will help solve both these problems, and can look and taste good – strawberries, herbs etc.

A forest garden, with plants of varying heights, is particularly well adapted to provide areas of shade which will create habitats for shade tolerant plants and help reduce soil temperature. Careful selection of plants will create a plant community adapted to your needs – food, flowers, herbal remedies, basketry etc. *www.agroforestry.co.uk/about-agroforestry/forest-gardening*

photo: RISC's rooftop forest garden

food4families
getting Reading growing

www.food4families.org.uk

RISC's community food growing project

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https://www.readingfoodgrowingnetwork.org.uk/

READING FOOD GROWING NETWORK

beating the drought

a guide to low-water gardening

The hose-pipe bans of 2022 are a wake-up call for many gardeners, particularly in the south-east of England where rainfall for the past two years has been 2/3 below normal. While wine growers might welcome hotter summers, most of us have gardens designed for a 'water-on-demand' regime. Despite an upsurge in sales of water butts and pumps to siphon bath water, many gardens have wilted. Most climate scientists agree that global climate catastrophe is fast approaching and is like to result in greater extremes of weather. Some predict that a drought will occur every three years on average. We need to face the prospect of making our gardens thrive with limited or uncertain supplies of mains water. Is there an alternative to the wholesale conversion to Mediterranean planting?

Since 2010 Food4families has been creating community food growing gardens all over Reading, using sustainable 'permaculture' methods. Our experience is that the future need not be limited to drought-resistant plants; we can still plant our favourite apple and pear trees, as well as more exotic pecans, peaches and pomegranates. If we learn the principles of water conservation gardening from people and cultures who have prospered in places with low rainfall, we can adapt or redesign our gardens to meet the challenge of uncertain rainfall, and continue to enjoy diversity and productivity in our gardens. These principles are: collect all suitable sources of water, water economically, retain moisture in the soil, and protect soil and plants from the sun.

Collect all suitable sources of water

Rainwater

Many gardeners already use water butts to harvest rainwater. However, a large garden with mature trees would need a small swimming pool to store enough water to cope with a prolonged dry spell. If money were no object, a 10,000 litre cistern dug under the drive would probably do the job! For most of us, a 1000 litre water butt made from reused olive oil container, is an economical way of increasing storage, but would probably not last more than a couple of weeks, even with careful watering 8*www.dvcontainers.co.uk*. One way to overcome this is to use gravity to feed overflow from waterbutts into mulch basins strategically placed around the garden – storing water in the landscape. These act as reservoirs which can be tapped by plant roots. A diverter with a simple valve provides control of the amount of water entering the system, preventing waterlogged soil 8*www.hayesplastic. com*.

A variation of this is to channel overflow from your water harvesting system into a rain garden that absorbs water, prevents flooding, attracts wildlife and helps to replenish ground water.

www.rhs.org.uk/garden-features/rain-gardens

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Greywater

Because the average household uses 135-150 litres/person/day, using greywater provides one solution (provided the hose pipe ban has not graduated to standpipes). However, you need to consider the source of greywater.

Waste water from a handbasin in a toilet may contain harmful pathogens which should be neutralised in reed bed. Ideally kitchen waste water should pass through a grease trap. Check the ingredients of cleaners and washing up liquid – some may be harmful to plants, particularly over a prolonged period as they build up in the soil. Others, such as phosphates, may even be beneficial assuming you are not organic. 'Environment friendly' does not necessarily mean plant friendly. One alternative cleaning agent, borax, is particularly lethal and should be avoided. Rotating the area being watered can reduce the possible build up of chemicals. Winter rain may also help flush them out.

Water from dishwashers contains high levels of salt which is also best avoided. Remember to allow warm water to cool in a collecting tank, but do not let greywater stand for more than 24 hours – its organic matter soon begins to rot and gives off a whiff of bad eggs.

The internet and gardening magazines have a range of devices to make using waste water easier than emptying your bath with a bucket. You can fit a diverter on the bathroom waste pipe 8*www.watertwo.co.uk*. There are very sophisticated greywater processing plants but these are expensive, and can be unreliable. You can also use mulch basins to store grey water in the soil 8*www.oasisdesign.net/education/sb/MulchBasinGW-RWoasisDesign.pdf*.

Water economically

Watering dry soil with a rose will produce a fine sprinkle which wet the surface and keep root systems near the surface. If you direct water straight to the roots you can train them to grow deep down to search out water in the sub-soil. Creating a watering basin around a plant is one way of ensuring precious water soaks deep into the soil. Another trick is to water into a small plastic plant pot buried to the rim next to the plant. Watering in the evening or early in the morning will reduce the loss of water through evaporation. You can also connect your water butt to a simple, gravity-fed porous pipe irrigation system 8*www.porouspipe.co.uk*. *Gardening With Less Water* by David Bainbridge is a highly recommended book with low cost, low tech techniques for using up to 90% less water.

Retain moisture in the soil

The key to successful gardening is the soil. This is especially true of low water gardening where the aim is to keep as much water in the soil as possible. Organic gardeners know the importance of muck which works its magic by feeding the organisms which live in the soil and holds water and nutrients like a sponge.

1 Increase the humus content of your beds through regular application of compost and organic mulch.
2 Reduce evaporation from the soil by covering it with a ground cover of low plants and /or mulch.
3 Reduce transpiration from plants by protecting them from direct sun.

Drought proofing mulch (aka lasagne bed)

This recipe kills two birds with one stone. It creates a rich compost as well as a water conserving mulch. It is best done in autumn when rain begins to soak into the soil, and allows time for bacteria and worms to do their work.

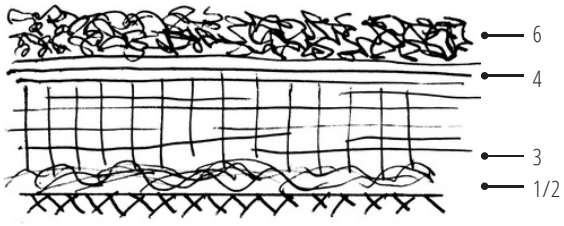
You can use this method of sheet composting/mulching on new or existing beds.

Ingredients

- bag of fish, bone and blood meal or ground granite dust (optional)
- organic material – garden or kitchen waste (not cooked food or meat/fish which will attract rats), shredded paper/cardboard, compost, leaves, bedding from vegetarian pets, straw
- high nitrogen activator (keep fresh manure from burning live stems) – farmyard manure, poultry pellets (spread thinly), grass clippings, wood ash (approx 0.5kg/m2), 'liquid gold' – urine!
- preferably rainwater (no chlorine and no embedded carbon) but tap water will work

Method

1 Cut down or flatten weeds – these will add to the mix and rot down. Give soil a good soak if dry.
2 Apply a slow acting organic feed such as fish, bone and blood meal – about 150gm/m2 – this will gradually release nutrients over several years.
3 Apply layers of the organic materials mixed with a high nitrogen activator. Sprinkle granite dust (approx 0.5kg/m2) and/or wood ash (not from treated timber which may have toxic chemicals)
4 Apply a layer of cardboard (large cartons for bikes or white goods are best). This retains moisture and suppresses weeds, and eventually rots down. Ensure an overlap of at least 20cm to control perennial weeds. You can also use newspapers (which use soy-based inks), but not glossy magazines (which may include inks made from toxic metals). Wetting the cardboard or paper makes them easier to arrange around existing plants and follow the contours of the bed.
5 Wait for heavy rainfall to give the mix a good soak or use harvested rainwater/tap water. The organisms which break down the ingredients into compost need moisture as well as carbon (paper, straw) and nitrogen (grass clippings, 'liquid gold' – urine!) in the proportion about 25:1, to work most effectively.
6 Cover with a thick layer of wood chip (free from friendly tree surgeon) or bark mulch. This will gradually settle and slowly decompose into soil – keep it topped up over the years.
7 Plant through the mulch by cutting a hole in the cardboard, and planting into a mound of peat-free compost. Carefully replace the mulch, ensuring the cardboard does not rub against the stem.



- Gardening With Less Water: https://www.urbanfarm.org/2016/09/08/david-bainbridge/
- Greywater gardening: http://www.oasisdesign.net
- Mulches: https://www.gardenersworld.com/how-to/maintain-the-garden/mulches-and-mulching/
- Lasagne beds: https://www.flowful.org/permaculture-community-resilience-course/s14-lasagna-garden-bed-permaculture
- Polycultures: https://www.permaculture.org.uk/practical-solutions/polycultures
- Forest gardening: https://www.agroforestry.co.uk/about-agroforestry/forest-
- gardening/
- Peatlands and climate crisis: https://peatlands.org/peatlands/peatlands-and-climate/