

**WATER
CONSERVATION TIPS**

**compiled by
Sunnyside Allotment Society**

Soil Improvement 1

Adding organic matter such as compost or manure increases the soil's ability to absorb and store water. It creates airy friable soil which allows roots to penetrate more deeply in search of water, and it will encourage water penetration and retention. Create your own compost heap where you can dispose of your green kitchen waste and add the green waste from your plot as an alternative to burning. Use the resulting compost to improve your soil.

Soil Improvement 2

A cold heap is another means of producing organic matter to add to the soil. It takes a lot longer to rot down as it does not rely on the heat element, but weeds, prunings and woody waste will rot down eventually. There may be pernicious weed roots in the end result but these pull out easily. Leaf mould makes a valuable addition to the soil. A simple container can be made using chicken netting. Layer leaves with soil and use comfrey leaves as an activator. An even simpler method is to stuff leaves into a black sack ensuring that they are wet. Tie the sack and make air holes in it. Leave to rot down and dig the resulting leaf mould into your plot next autumn.

Mulching—organic

Water is lost when it evaporates from exposed soil. Applying a 3 to 5 inch layer of mulch can significantly reduce this water loss. A good mulch can also suppress weed growth. Weeds compete for available water. It can also prevent soil compaction thus allowing rain to penetrate rather than run off. Wood chip, bark, grass cuttings, compost and strawy manure can all be used as an organic mulch. Always mulch after a good rainfall, and not when the ground is dry. Potatoes do not normally need to be watered but a damp soil will produce better yields. So apply a mulch to moist soil once they have been earthed up. Then whenever you cut the grass, top up the mulch with grass cuttings.

Mulching—plastic

Black plastic will conserve moisture if laid on damp soil. It will also suppress weed growth and help to warm up the soil early in the season. Other pervious materials can be used to combat weeds which compete for the available water. but they don't actually prevent water loss. Carpets can be used to keep soils moist and to keep the compost heap damp and warm. But we are now being told that carpets may contain harmful chemicals which may leach into the soil. Nylon carpets which disintegrate can leave long threads which are difficult to remove and which can cause havoc with rotavator blades. Planting through black plastic or other soil coverings can be beneficial in hot weather. Potatoes can be planted onto ridges through plastic. The soil underneath will remain damp and weed free.

Cultivation and planting 1

Some methods of cultivation are more conducive to water conservation than others. A deep bed system is worth considering, even if it's for only part of the plot. The bed is deeply worked and well manured making the soil friable and fertile. It is a comparably small area to water, and the water will be able to penetrate deeply. Deep beds are an efficient way of growing many crops. The soil should be fertile allowing plants to be grown

much closer together than normal. As a result of the plant cover, evaporation from the soil surface will be reduced to a minimum. Try not to do deep digging when it's dry. This will bring any residual dampness to the surface where it will be lost by evaporation. If digging has to be done when it's hot, cover the ground to conserve moisture

Cultivation and planting 2

Weeds will compete with crops for water and nutrients. Frequent shallow hoeing with a Dutch or push hoe will take care of the weeds and also keep the soil surface loose, allowing any rain water to be absorbed rather than running off.

In order to economise on watering, it is possible to group your plants together according to their watering requirements. For example, thirsty plants such as courgettes, marrows, tomatoes and cucumbers will all grow happily together. When planted fairly close, their leaves help to reduce water loss by evaporation. Planting courgettes between sweet corn plants can be mutually beneficial. The courgette leaves keep the sweet corn roots cool and encourage water retention. The sweet corn plants give the courgettes welcome dappled shade as they grow taller which prevents them getting scorched when it's very hot.

Cultivation and planting 3

Some plants such as spinach, chard, parsley, lettuce and other leafy crops, prefer moist growing conditions. In order to maximise water retention, these can be planted in shallow trenches which can be used for watering. As the summers get hotter, growing in full sun is no longer appropriate for all crops. It is possible to get good results by using the shade produced by other plants. Parsley and spinach for example, appreciate the shade cast by runner beans. It might be interesting to experiment with some of the drought tolerant heat-loving "exotic" plants such as kiwi fruit, melons, figs and sweet potatoes. They won't require so much watering and our south-facing sunny slope might provide an ideal location.

Cultivation and planting 4

If the soil surface is hoed to maintain a fine dry tilth layer, it will lose very little water. This dry layer will then help to preserve moisture at a lower level. Well pruned fruit trees and soft fruit require less water to maintain good productivity as they lose less moisture through transpiration with excess leaves. Climbing French beans can be a good alternative to runner beans. They are self-fertile so don't suffer the flower fall and bean setting problems of runner beans in hot weather. To give seedlings the best chance of getting away, plant them out late in the day if it's hot to prevent the moisture evaporating so quickly. Water them in well, but then draw dry soil up round them to fool the slugs. Choose varieties which do well in hot, dry conditions. Plan your planting so that crops which require more water are grown closer to a water source.

Watering wisely I

Water is a precious and finite resource. We owe it to future generations to use it responsibly. Don't just water as a matter of routine. For best effect, water your crops according to their actual requirements. Using a hose to water can result in loss of water.

On a hot day about 25% of water can be lost to evaporation before it reaches the ground. But a hose delivering large drops is less prone to water loss than one which delivers a fine spray. Help to conserve water by applying the right amount of water at the right time in the right place in the right way. Wise watering involves applying water slowly, at a rate that it can be absorbed by the soil, deeply and directly to the roots, and infrequently. In other words, a good soaking occasionally rather than little and often.

Watering wisely 2

Watering with a pressure hose can be wasteful. Much water will evaporate before it reaches the soil and more will evaporate from the soil surface. But a hose can really take the hard work out of watering by filling a series of watering cans in situ, so that they don't have to be carried far. If you use a hose, consider fitting a trigger nozzle to control the flow. If you can water early or late in the day, less water will be lost in evaporation, as the temperature is lower, humidity is higher and the air is calmer. To do well, plants need to send their roots down deep in search of water and nutrients. Deep roots help plants to endure drought better. Frequent surface watering encourages the roots up towards the moisture where they are at risk in hot dry periods.

Watering wisely 3

It is beneficial to direct your watering to where it is required. This is especially important in the case of thirsty plants such as tomatoes and courgettes which require copious watering. Recycle plastic litre drinks bottles for this purpose. Simply cut out the base and stick the neck into the ground near the plant. Water into the bottle and it will go straight to the roots with no evaporation. Watering around plants rather than over the leaves in very hot, sunny weather avoids scorching. It is easier to judge how much water is being given to individual plants when using a watering can. It is also easier to really soak an area such as the runner bean row using a watering can. Many of us can take advantage of the slope in order to siphon water into our water butts from which we can fill our cans. With judicious siting of butts, you are never very far from a water source.

Collecting water

Run-off from shed and greenhouse roofs is a valuable source of water. To collect rain-water in the simplest way, attach guttering to your shed and greenhouse, and acquire a water butt. Keep the butt covered to prevent evaporation. To prevent cracking in frosty weather, float tennis balls on the water surface. To increase the amount of water collected, run a series of water butts joined by pipes, so that once the first one is full, any excess water will run into the next butt and so on. Plants do better on rain water, taking up all the trace elements. Acquire water butts from garden centres (expensive), the tip (cheap), skips (even cheaper), from drinks manufacturers etc. Councils often advertise availability of subsidised water butts – see local press. Other sources are car boot sales, garage sales, and eBay and berkofreecycle on the internet.