

Garden practice

Watering in drought

Whether growing plants in pots or in the ground, watering is a necessity of summer gardening. But when rainfall dries up and hosepipes are banned, what are the best strategies to cope with drought?

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A key activity and essential part of gardening in summer is watering. This has become more difficult this year, with several water companies enforcing water-use restrictions affecting more than 20 million gardeners. Despite the wet spring, gardeners must continue to use water carefully thanks to two winters of drought and the hosepipe ban.

Water is vital to hydrate plant cells to aid plant processes including growth, yet at the same time water is lost from the leaves (transpiration), so plants rely on a good root system to constantly draw water from the soil.

For gardeners, the visible effect of a water shortage depends on the type and maturity of plantings and soil structure. Soft stems of young plants or fresh herbaceous shoots quickly wilt if the soil dries, but plants with tougher leaves conserve water in their foliage and are more tolerant of drought. On sandy or silty soils, which drain relatively quickly after rain, the effects of a lack of water are more quickly apparent than in moisture-retentive soils with a high clay content.

Although gardeners can compensate in part for short-term lack of rainfall, when gardening in the drier or wetter parts of the country you may need to alter your long-term approach. Mulching to retain moisture, incorporating organic matter to alter soil drainage, and refining your plant choices are key factors. ●

www.rhs.org.uk For advice on dealing with drought and a list of drought-tolerant plants go to **www.rhs.org.uk/drought**
❖ Visit **www.environment-agency.gov.uk** for the current drought situation

Short-term solutions for coping with drought

Whether mains water is still available via a hose, or only from a watering can, try to use water effectively around the garden to suit the needs of your plants



Water collection

- ❖ Make the most of any rainfall by collecting water from gutters into as many water butts as you can find space for. Even the runoff from the glasshouse is worth collecting in a water butt, and it will probably be closer to your plants than the outside tap. Use a pump to provide pressure to feed a drip irrigation system or porous pipe from the water butt.
- ❖ Save and reuse as much household waste water as possible. The easiest sources are waste water from washing vegetables and unwanted cold water from the hot tap. Water with some washing-up liquid won't harm ornamentals, fruit or mature vegetables, but avoid pouring it onto edible leaves. Stronger detergents are more harmful.



Plants most in need

- ❖ Focus watering efforts on those plants that are not yet fully established. Trees, large shrubs and evergreen hedging that were planted less than 12 months previously may still need a thorough watering every week.
- ❖ Autumn plantings normally receive plenty of rainfall in winter, but need monitoring in case they have suffered from drought.
- ❖ Seedlings and young plants need watering thoroughly before planting out, and regularly thereafter. Target annual vegetable plants, particularly when the crop is developing.
- ❖ Larger, mature, container-grown plants acclimatise more slowly to soil conditions after planting than smaller choices, so focus regular watering on these.



Effective watering

- ❖ Drip irrigation is the most effective method of directing water to the root zone of a plant with the minimum of wastage, but this is not practical for all plantings in the garden.
- ❖ Target water onto the soil rather than letting it fall onto the foliage, so use your watering can without the rose.
- ❖ Water drought-susceptible plants thoroughly every few days rather than giving little and often.
- ❖ Make a dip in the soil around single plants and plant vegetables in troughs to channel water close to plants as it soaks into the soil.
- ❖ Sink a pipe or a cut-down plastic bottle upside-down into the soil next to recent plantings to direct water down to the roots.



Container gardening

- ❖ Plants in containers cannot rely on rain alone and need regular watering. Transfer smaller potted plants into larger containers, as the greater the volume of growing medium the more water it can hold.
- ❖ In hot weather move planted containers into light shade, group them together and place on saucers to catch drainage water.
- ❖ Select drought-tolerant plants such as sempervivums for summer containers in sun.
- ❖ Hanging baskets have high water demands, so reconsider their value before committing yourself to a summer of daily watering by hand. When planting new baskets, add water-retaining crystals to the growing medium, and connect to a drip irrigation system if possible.



Soil cultivation

- ❖ Keep soil disturbance to a minimum. Soil water is lost from the surface by evaporation, especially in warm weather, and disturbance through digging, hoeing or pulling weeds can expose moist soil from below the surface and lead to further water loss.
- ❖ Weeds compete with garden plants for soil moisture, so remove them promptly where they emerge, especially among seedlings or young plants in vegetable beds, around fruit trees and bushes, or in newly planted borders.
- ❖ The lawn can be left to go brown without serious long-term harm, but spiking it now will mean it can readily rehydrate when it rains. Push the tines of a garden fork 10-15cm (4-6in) into the soil at 20cm (8in) intervals.

Long-term actions

You can improve growing conditions so that plants are more able to tolerate drought or waterlogging

- ❖ Improve the soil's capacity to hold water by regularly digging in organic matter; this is of most benefit for well-drained soils with a high sand or chalk content.
- ❖ **Apply a layer of mulch to any bare, weed-free soil after prolonged spells of rainfall, traditionally in early spring to reduce surface evaporation in summer. An organic mulch will break down**

- ❖ **slowly and improve the soil's water-holding capacity; a mulch of stones or gravel used with alpines or drought-tolerant plants is still useful for reducing evaporation.**
- ❖ Plant in autumn when the soil is still warm, taking advantage of higher rainfall to encourage root development without the reliance on extra watering. Buy young plants in small pots for planting out, as they will show more resilience and adapt more readily to changing soil water conditions than

- ❖ larger container-grown plants.
- ❖ **Select plants that are suited to your garden's conditions and soil type: woodlanders suited to moist soil in shade will struggle in full sun without extra water. Drought-tolerant plants such as succulents, and many species that originate from Mediterranean regions, suit soils that are free draining all year round,**

- ❖ **but suffer in poorly drained, heavy clay soils that may dry out temporarily in summer yet lie cold and wet in winter.**
- ❖ In regions of high rainfall, follow a series of measures such as digging organic matter or gypsum into water-retentive clay soils to create a more open structure and improve drainage. Use raised beds for sowing seeds and growing vegetables, and plant trees and shrubs on a slight mound to encourage water to drain from the soil surface. Spike lawns frequently to encourage surface drainage.



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Cut down on watering

Tijana Blanus, RHS Senior Horticultural Scientist, has undertaken research into how plants react to less water.

The current scientific view is that in most situations garden plants can continue to function and fulfil their 'aesthetic role' with significantly less water than we may assume. The rules of watering differ subtly for containerised and ground-grown plants, but the general message remains: plants have ways of coping with 'carefully managed' water reduction. For containerised plants this means regular (daily) watering but just to the point of water running from the base.

Experiments show that watering can be reduced by at least 50 percent in several species (including *Petunia*, *Heuchera*, *Salvia* and *Dahlia*) with only a minimal reduction in size and flower numbers. For a 3-litre container planted with three petunias this is typically 200-250ml (a tea mug full) on a sunny day, and less on a cloudy one. Plants can sense that water in the growing medium is gradually being reduced; they respond by closing their stomata (pores on the underside of leaves) to reduce water loss by transpiration.