

## Herbs for hot dry places

Herbs brighten up a garden, are essential for any good cook and, given the right growing conditions, are pretty undemanding plants.

Many of our favourite herbs, like thyme, rosemary and oregano, hail from warmer climes and only thrive in hot, sunny parts of the garden. They usually need dry, free-draining soil that's low in nutrients and, when grown in containers, they are more exposed to the baking conditions they require. Most gardeners know that they should provide these conditions for herbs, but why is this necessary?

A plant grows by using its roots to absorb moisture from the soil. Then, as this moisture evaporates, or transpires, from the leaves, it creates an enormous force that pulls the water all the way up from the roots. It's been estimated that this force could take the sap to a height of 1980 metres. This process can be so powerful that air caught in the water can separate from the liquid to form tiny air bubbles. They act like air locks and prevent the water from reaching the leaves. This happens during a hot day, precisely when the plant needs the water to keep cool, but, fortunately, when the temperature falls at night, there's much less evaporation, so the force drawing up the water slows down and allows the bubbles to dissolve back into the water.

Evaporation takes place through stomata, tiny pores in leaves. Large-leafed plants, like cucumbers, have huge numbers of these pores, so transpire or lose water and wilt all too easily. Even when they absorb large amounts of water through the roots, this volume doesn't keep pace with evaporation in a hot day. Herbs, like thymes, have overcome this problem by having small leaves, and therefore many fewer stomata. Herbs have yet more ways of cutting down water loss: thin, needle-like rosemary leaves have a waxy coating and the thick mat of tiny hairs on sage leaves helps reduce evaporation. Some thymes have silver leaves that reflect some sunlight and so reduce the plant's need to keep cool by transpiration.

Moist leaves are a magnet to herbivores desperately seeking liquid anywhere in a dry region, so many herbs have developed scents, essential oils and tastes that are repugnant to predators. Bitterness is usually an offput to grazing animals and insects, even if we have found ways of using it to enhance our food or have developed varieties that are less bitter. It's ironic that a herb's defence mechanism is often what appeals to us.

Most of us have a suitable hot spot for growing culinary herbs that work well in Scotland: thyme, oregano, sage, fennel, lavender, rosemary, hyssop and winter savory. Apart from fennel, all these herbs can be grown in pots, so are ideal for a sunny patio, as well as the open ground. They all need full sun, especially during the summer, because the sun concentrates a herb's essential oils. The perfect time to pick herbs for the kitchen is before flowering. Choose the late morning after the dew has lifted, but before the sun dries out the volatile oils. One exception to this is oregano which does require a blazing sun for best flavour.

The herbs I've just mentioned would grow at different times of year to most plants in our gardens. Like all plants, they need moisture to grow and, in the Mediterranean, that means during the spring, when light levels are high enough but there is still moisture in the soil. When the soil dries out under a baking summer sun, these plants become dormant. Just as northern European plants go dormant in winter as a safety mechanism, Mediterranean ones require that protection in summer. So, it's important that you choose a spot where the soil is moist, but not wet and soggy, especially in winter and spring, as this would effectively drown the herb and induce fungal rot. I have a paved area in the potager, where I've planted a number of thymes

in small pockets of thin, free-draining soil between the slabs. This becomes seriously hot if the sun ever shines during the summer, but moisture runs off the slabs at other times of year, so providing ideal growing conditions. I also have rosemary in large containers set up on stone slabs in a sheltered south-facing part of the garden. Again, these are ideal conditions.

Heavy soil will naturally retain moisture, so encourage good drainage by digging in grit. With a clay soil, you may find it hard to achieve this, so I recommend growing herbs in pots. Multi-purpose compost is designed to retain moisture, so again mix in grit for better drainage. Put a layer of broken crocks at the base of the pot and in wet weather, place the pot on bricks to allow water to escape. Although herbs make few demands on the soil, they do need some nutrients, so repot herbs every 2 or 3 years.

Now all you need do this summer is turn on a sun lamp.