

Growing skills

Which gardening tips are worth the effort? Penny Sarchet prunes back some of horticulture's hardest myths

Potty

THEY SAY:

Improve water drainage by covering holes at the bottom of pots with broken pot shards and a layer of gravel

The advice, which may even be on the label your plant came with, makes intuitive sense. But it disobeys the laws of physics. Following it could end up waterlogging the soil and suffocating your plant's roots.

It all comes down to water's surface tension. "Water is held up in narrow spaces with a strength that is inversely dependent on the width of the space," says Martin Chaplin of London South Bank University. As a result, it will not move easily from the narrow spaces between dirt particles to the wider ones that separate gravel.

Only once the soil layer becomes nearly saturated will water flow into the coarser gravel layer, says Stephen Neethling at Imperial College London. At that point, having a gravel layer will indeed offer more routes for water to escape than a single hole at the bottom of the pot. But it is probably best not to waterlog your pots in the first place.

If you have been covering the holes with shards to stop earth falling out, try using pieces of nylon or mesh instead.

Squashed together

THEY SAY:

Don't grow melons and squash next to each other because they can generate hybrids

Some members of the melon family (cucurbits) do cross-pollinate, but this is rarely a problem. You needn't worry about plants that belong to different species, like honeydews and cucumbers. But pumpkins, courgettes, gourds and some other squashes all belong to the same species. A bee could pollinate one with the pollen from another.

Despite this, you will still get the fruit of the mother plant. If courgette pollen fertilises a pumpkin flower, for example, you will get a pumpkin. You will only end up with weird hybrids if you collect the resulting seeds and plant them the following year, or if one falls on the ground and self-propagates.

Decorative gourds have become pretty fashionable, so you may not mind a hybrid or two. And none of this matters if you buy new seeds each year. If, however, you are collecting seeds from your prize cucurbits and want to protect their genetic heritage, you probably shouldn't grow different varieties within a kilometre of each other.



ALISTAIR HARRISON/CONCEPT

Mad plants and Englishmen

THEY SAY:

Water droplets left on leaves can magnify the rays of the midday sun, burning the plant

This advice probably only holds true in very specific circumstances and depends on how hairy your plant's leaves are, according to Gábor Horváth of Eötvös Loránd University in Hungary.

In experiments with maple leaves, Horváth and his team found it was impossible to burn them using water and sunlight. In part, this was because water droplets cool a leaf's surface on contact, making it harder to scorch. What's more, the sun's rays have to be at just the right angle to focus through a droplet onto a leaf. The team calculated that the burn risk would be greatest in the early morning or late afternoon. But

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sunlight at these times is too weak to cause damage. Finally, the odds of a drop being held perfectly still on a smooth leaf for long enough are slim at any time of day.

The situation was different with hairy leaves. Hairs can hold water drops above the leaf surface, so they don't touch and cool it. The team found that if a droplet sat at just the right height, the midday sun could sometimes burn a floating fern leaf.

Even though the risk is small, you should still avoid watering in the middle of the day. It's a waste: much of the water will evaporate. Watering in the morning is best. It is less likely to encourage fungal infections than watering in the evening, when leaves stay wet for longer. But if a plant is starting to wilt, don't wait, regardless of the time of day. Terminal wilt could set in, and then it is too late.

A lot at stake

THEY SAY:

Stake a newly planted tree or shrub to protect it from gusts of wind that can tear the roots before they become established

Here's the rub: wind helps saplings become strong. "Wind stress encourages root growth and trunk thickening," says Linda Chalker-Scott at Washington State University. As the trunk flexes, the disturbance triggers a process called thigmomorphogenesis. This has been linked to a suite of chemical changes within plants. They switch on genes that help thicken cell walls and lay down lignin, a strong woody polymer. All this hardens the stem, which then sends signals down to the roots, telling them to boost their growth so the plant can brace against the wind.

The end result is shorter and stockier plants. The process also restricts the growth of branches and leaves, so the trunk and roots can better support their weight. Trees that are staked too tightly or for too long grow taller and thinner, and are more likely to snap or be uprooted once the stake is removed. The same applies to just about any plant—even veg like broccoli.

"My suggestion is to wait for a day or two and see how [a sapling] does," says Chalker-Scott. "If it starts to lean, then you can go back and stake it." There are a couple of exceptions. Providing support makes sense if your garden is exposed to constant strong winds, for instance if you live on a windy coastline. In that case, it is best to use a stake no more than two-thirds of the sapling's height and to attach it loosely using a flexible tie so the whole trunk can sway a bit. If you use wire, run it through rubber hosing first to avoid damaging the bark.

Flowers are another exception. We have bred ornamental plants to produce large, flamboyant blooms, often without also selecting for a strong plant structure to support them. If you are a fan of heavy flowers such as peonies, delphiniums or stocks, you will probably want to stake them up while they are in bloom purely for the sake of your display.