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End to the daffodil colour lottery in sight as scientists map the plant's genetic code



Gardeners currently cannot tell what colour daffodil bulbs will grow up to be CREDIT: LUKE MACGREGOR

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By **Henry Bodkin**

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End to the daffodil colour lottery in sight as scientists map the plant's genetic code

Gardeners will be able to predict the colour of their daffodils (<https://www.telegraph.co.uk/gardening/problem-solving/top-tips-for-planting-bulbs/>) before the bulbs are planted after scientists successfully mapped the flower's genetic code.

When sold as dry bulbs, the 1,766 potential variations are currently impossible to tell apart, meaning they can grow to be anything from yellow, pink, green, or even trumpeted or double-headed.

Now, experts at the Royal Horticultural Society and Reading University say their work should enable bulbs to be accurately labelled in garden centres, allowing gardeners to plan the perfect flower bed.

The work should also enable prediction of the colours of other bulbous plants such as snowdrops, crocus and hyacinths, they predict.

Researchers began by extracting DNA (<https://www.telegraph.co.uk/science/2018/11/01/genetic-code-every-animal-plant-earth-mapped-end-extinction/>) from the leaf material of a pheasant's eye daffodil grown at RHS Garden Wisley.

They then focused on the 2 per cent of the species' genome responsible for chloroplasts, the part of the plant which converts the sun's light energy into the sugars that fuel cells.

The data will now allow scientists to identify the variations in the genome that could serve as genetic markers and be effective in distinguishing between different varieties.

John David, Head of Horticultural Taxonomy, at the Royal Horticultural Society said:

“This is an exciting first step in identifying daffodil varieties at the point they are most popularly bought but when there is nothing to tell them apart.

“With so many bulbs due to be planted this autumn it is a huge industry and we hope our work might avoid disappointment for professionals who plant en masse and gardeners who will often seek out their tried and tested favourites.”

The researchers said that thanks to the pace of technological innovation, the means to determine the colour of a daffodil before it is planted should be commonly available and affordable within 10 years.

The genetic insights could also be used to engineer new breeds and colours of daffodils.

As a keen gardener I have sometimes been disappointed to find special bulbs I've planted in the autumn have turned out to be less good varieties when they come in to flower in the spring,” said Alastair Culham, Associate Professor of Botany at Reading University.

“Better management of the supply chain and the ability to authenticate dormant bulbs should stop such mistakes in the future.”