

Plants recognize their siblings, biologists discover

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The next time you venture into your garden armed with plants, consider who you place next to whom. It turns out that the docile garden plant isn't as passive as widely assumed, at least not with strangers. Researchers at McMaster University have found that plants get fiercely competitive when forced to share their pot with strangers of the same species, but they're accommodating when potted with their siblings.

The study appears today in the Royal Society journal *Biology Letters*.

"The ability to recognize and favour kin is common in animals, but this is the first time it has been shown in plants" said Susan Dudley, associate professor of biology at McMaster University in Hamilton, Canada. "When plants share their pots, they get competitive and start growing more roots, which allows them to grab water and mineral nutrients before their neighbours get them. It appears, though, that they only do this when sharing a pot with unrelated plants; when they share a pot with family they don't increase their root growth. Because differences between groups of strangers and groups of siblings only occurred when they shared a pot, the root interactions may provide a cue for kin recognition."

Though they lack cognition and memory, the study shows plants are capable of complex social behaviours such as altruism towards relatives, says Dudley. Like humans, the most interesting behaviours occur beneath the surface.

Dudley and her student, Amanda File, observed the behavior in sea rocket (*Cakile edentula*), a member of the mustard family native to beaches throughout North America, including the Great Lakes.

So should gardeners arrange their plants like they would plan the seating at a dinner party?

"Gardeners have known for a long time that some pairs of species get along better than others, and scientists are starting to catch up with why that happens," says Dudley. "What I've found is that plants from the same mother may be more compatible with each other than with plants of the same species that had different mothers. The more we know about plants, the more complex their interactions seem to be, so it may be as hard to predict the outcome as when you mix different people at a party."

Source: McMaster University

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