

Plants have a sense of smell—can we harness it to fight pests, improve crop quality?

Plants don't need noses to smell. The ability is in their genes. Researchers at the University of Tokyo [have discovered](#) the first steps of how information from odor molecules changes gene expression in plants. Manipulating plants' odor detection systems may lead to new ways of influencing plant behavior.

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"We started this project in 2000. Part of the difficulty was designing the new tools to do odor-related research in plants," said Professor Kazushige Touhara of the University of Tokyo.

Plants detect a class of odor molecules known as volatile organic compounds, which are essential for many plant survival strategies, including attracting birds and bees, deterring pests, and reacting to disease in nearby plants. These compounds also give essential oils their distinctive scents.

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Touhara imagines applying these discoveries to influence crop quality or character without the complications of gene editing or pesticide use. Farmers could spray their fields with an odor associated with a desired plant behavior. For example, an odor that triggers plants to change the taste of their leaves to deter insects.

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The University of Tokyo research team made their discoveries using tobacco plants, a common model organism. They expect research teams around the world will soon verify the discovery in many other types of plants.

Read full, original article: [Plants can smell, now researchers know how](#)