

Symbiotic viruses help host insects override the plant's defenses

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Aphids, small sap-sucking insects, are virus carriers responsible for significant economic losses in many crops worldwide. Many aphids form symbiotic and mutualistic relationships with viruses, an aspect of plant disease that has not been well explored.

Scientists based in Beijing, China, studied how one symbiotic virus, *Acyrtosiphon pisum* virus (APV), actually helps its host [aphid](#) adapt to new plants. APV is primarily located in the aphid's salivary glands and gut. When the aphid feeds on the plant, APV is transferred through the spit.

Importantly, the survival rate of aphids on new plants increases if the aphid carries APV because the virus suppresses the plant's insect defense hormones.

"We were surprised to know symbiotic [viruses](#) can function outside hosts, which is quite different from [symbiotic bacteria](#) in the gut," said plant pathologist Feng Cui. "This [research](#) provides us with the possibility of interrupting aphid-host plant alterations or influencing the dispersal of aphids through the manipulation of these symbiotic viruses."

To learn more about this unique research into symbiotic viruses, read "A Symbiotic Virus Facilitates Aphid Adaptation to Host Plants by Suppressing Jasmonic Acid Responses" in the January issue of *Molecular Plant-Microbe Interactions (MPMI)*.

More information: Hong Lu et al, A Symbiotic Virus Facilitates Aphid Adaptation to Host Plants by Suppressing Jasmonic Acid Responses, *Molecular Plant-Microbe Interactions* (2019). [DOI: 10.1094/MPMI-01-19-0016-R](https://doi.org/10.1094/MPMI-01-19-0016-R)

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