

Viewpoint: Glyphosate is great at killing weeds, but there are concerns its use could imperil the microbiome of some insects — both beneficial and harmful

[A] study, [published](#) in the journal Communications Biology, showed that glyphosate inhibits a biochemical pathway in bacteria that was previously only thought to affect plants, making them unable to supply the growing sawtoothed grain beetle with essential nutrients.

This beetle [relies on](#) symbiotic bacteria to provide amino acid building blocks for its protective exoskeleton. Without the bacteria, the beetle's coating is much thinner, making it vulnerable to drought and predators.

Some might say this is a good thing, as the grain beetle (*Oryzaephilus surinamensis*) is a global pest that – as its name suggests – gets into stored grain and grain products.

But there's more to it, as this beetle's reliance on nutrients from its bacterial friends is more widespread in the insect world.

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"The sawtoothed grain beetle is a model system that is easy to maintain and manipulate and allows us to study other host symbiont associations," explains senior author Tobias Engl from Germany's Institute of Organismic and Molecular Evolution in Mainz.

"Thus the implications of our findings have to be seen not only in the limited, anthropogenic focus on a single grain pest, but in the larger context of the entire diversity of insects in our environment."

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