

Growing crops on Mars? Geologists explore ways to feed a Martian colony without hauling soil into space

Practically speaking, astronauts cannot haul an endless supply of topsoil through space. So University of Georgia geologists [are figuring out](#) how best to use the materials already on the planet's surface.

To do that, they developed artificial soil mixtures that mimic materials found on Mars. In a new study published in the journal *Icarus*, the researchers evaluated the artificial soils to determine just how fertile Martian soil could be.

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In the last decade, Martian surface exploration has expanded the understanding of the chemistry of the planet's surface. Using data taken from NASA's surface samples, the team studied regolith, or the loose material near the surface, to develop the simulants.

The materials used mimic mixtures of soil, clay minerals, salts and other materials obtainable from Mars' surface by scooping loose material or mining it from bedrock.

Despite its thin atmosphere, extreme cold and low oxygen, Mars' surface is known to contain the majority of plant essential nutrients, including nitrogen, phosphorus and potassium.

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Whatever the eventual solution, the prospect of a manned mission to Mars hinges on the ability to grow food.

"There are multiple ways you can look at it, but one option might be to use what's already there as a potting medium, and figure out if that's a viable way to do it or if you have to bring all the plant materials with you," [researcher Laura] Fackrell said.

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