Growing rice on Mars? Gene-edited rice might be able to grow in the Red Planet's soil

Martian dirt may have all the necessary nutrients for growing rice, one of humankind's most important foods, planetary scientist Abhilash Ramachandran reported March 13 at the Lunar and Planetary Science Conference. However, the plant may need a bit of help to survive amid perchlorate, a chemical that can be toxic to plants and has been detected on Mars' surface.

The researchers… tried growing rice in soil with added perchlorate. They sourced one wild rice variety and two cultivars with a genetic mutation — modified for resilience against environmental stressors like drought — and grew them in Mars-like dirt with and without perchlorate.

No rice plants grew amid a concentration of 3 grams of perchlorate per kilogram of soil. But when the concentration was just 1 gram per kilogram, one of the mutant lines grew both a shoot and a root, while the wild variety managed to grow a root.

The findings suggest that by tinkering with the successful mutant's modified gene, *SnRK1a*, humans might eventually be able to develop a rice cultivar suitable for Mars.

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