



FOOD ON MARS

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PROBLEM

IS IT POSSIBLE TO GROW FOOD ON MAR'S
SOIL? IF SO, HOW?



SOIL ON MARS

- Soil on mars is very toxic on the top layer but underneath the top layer it has some of very important elements, such as:
 - Carbon
 - Nitrogen
 - Oxygen
 - phosphorous

WATER


- Water is found in the soil and there is about 1500 liters of water stored in the soil. Water is extracted from a device called WAVAR (water vapor adsorption reactor). The device has been tested in a simulation of Mars conditions. It is a very long and difficult process to extract water using the WAVAR device because it only extracts small amounts of water vapor from the Martian atmosphere.



The background features a gradient from deep purple at the top to dark blue at the bottom. Overlaid on this are several faint, light-colored circular patterns and a scale. The scale is a large arc on the left side, with tick marks and numbers ranging from 40 to 260. Other smaller circular patterns with arrows are scattered across the background, suggesting a technical or scientific theme.

WOULD PLANTS BE ABLE TO SURVIVE ON MARS?

YES, BUT THEY WOULD HAVE TO BE STORED IN A GREEN HOUSE.



WHAT CAN BE GROWN ON MARS?

Tomatoes

peas

Rye

Radish

Leek

Spinach

garden
rocket

Cress

quinoa

Chives

CONTINUE...

- These plants were tested in Mars-Equivalent Soil, in a glass room on earth.

AMOSPHERE ON MARS

- Atmosphere on mars is 100 times thinner than the atmosphere on earth. It's mostly composed on carbon dioxide and very few nitrogen and oxygen.
- 95% carbon dioxide
- 3% nitrogen
- 1.9% argon
- 0.146% oxygen

SUNLIGHT AND TEMP.

- Mars only receives less than half of the sunlight on earth. Also, it gets very cold on mars(-200° Fahrenheit). This means it would be impossible to try growing food out in the open.

COULD WE EAT CYANOBACTERIA ON MARS?

- Yes, people eat it all the time on earth as food supplements. Cyanobacteria produces more oxygen waste than plants.

CONCLUSION

- Even though, we have not fully found the solution to food on mars but we are very close. NASA has claimed to get people on mars by 2030 and colonize them by 2050.

CITATIONS

- <https://www.liveoutdoors.com/recreation/244447-how-to-grow-food-on-mars/>
- <https://www.livescience.com/52444-growing-food-on-mars.html>
- <https://www.mars-one.com/faq/health-and-ethics/will-the-astronauts-have-enough-water-food-and-oxygen>
- <https://www.deviantart.com/lacza/art/Space-Series-Mars-325270694>
- <https://www.geekwire.com/2016/water-on-mars-microwave-soil/>
- <https://www.sciencealert.com/tomatoes-peas-and-8-other-crops-have-been-grown-in-mars-equivalent-soil>