



FOOD ON MARS

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OVERVIEW



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Human Diet on Earth

CALORIC CONSUMPTION

Women 1,200 cal/day

Men 1,800 cal/day

NUTRIENTS

Carbohydrates, fats, fiber, minerals, protein, vitamins & water

GLOBAL DIET

749 g produce, 403 g grain, 280 g dairy & eggs, 173 g meat, 130 g sugar & fats, and 143 g other



Three Diets on Mars

PLANT BASED

Doable and the most sustainable Plants, nuts, grains, soy

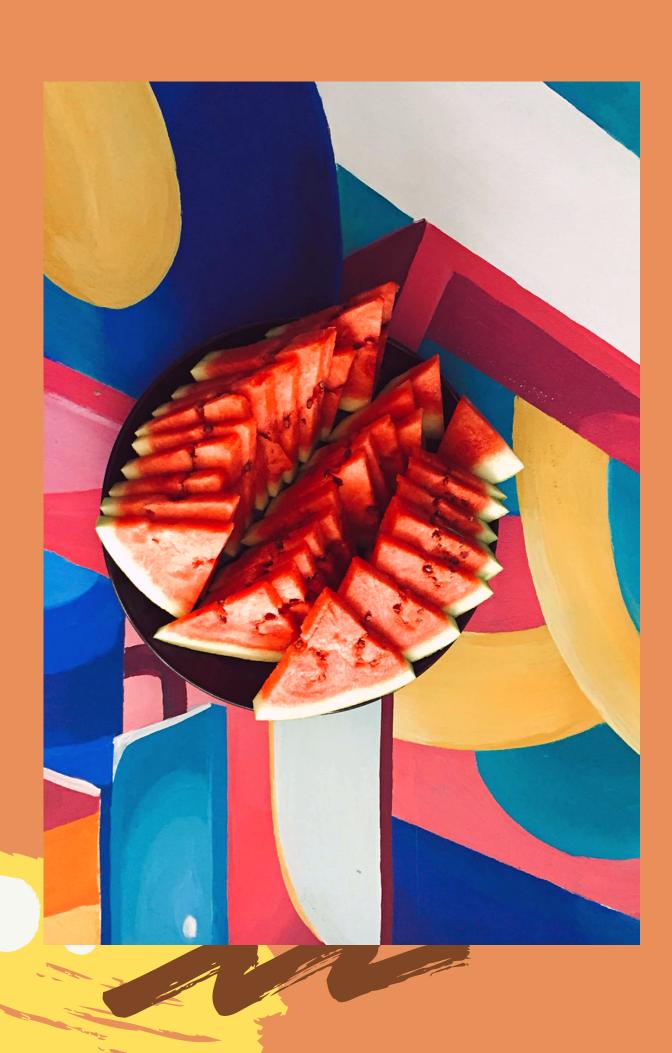
TRADITIONAL ANIMALS

Expensive and requires further research Chicken, tilapia

LAB GROWN MEAT

Newly developed process Memphis Meat





Plants!



How to Grow Plants

SOIL

pH of 6 or 7
Free draining
N, P, K, Mg, S, Ca

WATER

The right amount
Photosynthesis
Electron to CO2

AIR

Sunlight

Carbon Dioxide

Right temperature

Martian Soil

GOOD

Has the necessary nutrients

BAD

Not everywhere or evenly across the planet

Perchlorates are bad fro humans and plants

SOLUTION

Fertilizer and biological matter

Rinse out soil with a sprinkler system



Martian Atmosphere

GOOD

95% carbon dioxide

BAD

Low temperature averaging at -80 degrees Fahrenheit Atmosphere 100 times thinner than Earth Water freezes
Extraction

SOLUTION

Short term Spacecraft style habitat with LED lights as the source of light Long term Thick plastic green house with the sun as the source of light







GOOD

H2O ice has been discovered

Subsurface liquid water is presumed to exist

Creating and reclaiming technologies exist

BAD

Has yet to be found in a liquid state

Has yet to be proven

SOLUTION

Mine it and melt it down to liquid state

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In conclusion, humans won't starve on Mars.

Thanks! Questions?



