

MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Microgravity Sciences Onboard the International Space Station and Beyond - Part 2 (7)

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THEORETICAL MODEL FOR PLANT GROWTH SIMULATION ON MOON

Abstract

There is no doubt that the second brightest object in the sky after the Sun is the moon, and it orbits around the Earth once per month. It is also our nearest celestial neighbor. Current interest in planetary and long duration space exploration such as to Mars requires further understanding and researches on self-sustaining societies. Moon is a possible platform for such studies. This article is a study of how moon is vital for the future human space exploration for all deep space human missions. The major focus is to keep humans alive, happy and healthy on the surface. Identifying, designing and predicting technology requirements for Environmental Control and Life Support System (ECLSS) for colonizing the moon is the first task need to be performed to keep them alive.

This project is a mathematical model for simulating plant growth on the moon surface using the comparative study of plant growth in various gravity conditions. The experiment was done using Clinostat which is a microgravity simulating instrument used in an earth laboratory. Some plants were carefully selected and the effects of simulated microgravity on their growth were detected while the corresponding 1G served as controls. The effects of moon's gravity on such plants were extrapolated from 1G and simulated G values. This therefore will give a great idea and result into moon farming for crews survival.