

Moon-grown Plants as a Resource

Object: Attract Interest of ISRU Community

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Research Gaps

Current effort mainly focused on life support

- Should be expanded to other plant uses and include lunar conditions: 1/6 g, regolith, etc.
- ISS has small centrifuges
- Ultimately large-scale, long-duration proof tests will be needed
- Long lead times for plant growth to maturity and for convincing demos of sustainability mean we should start now

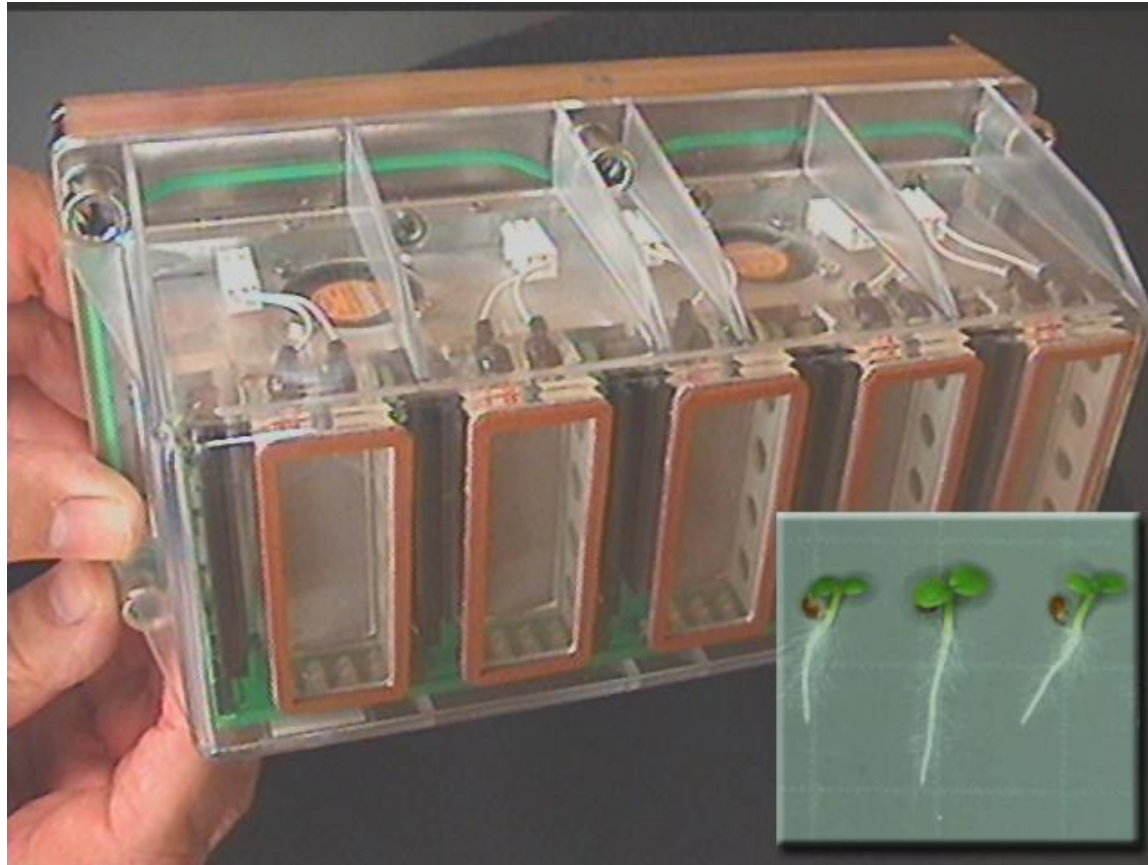
Arabidopsis Thaliana

NASA Photo



Plant Uses in a Lunar Settlement

- Food and environment maintenance, recycling**
- Gardening for pleasure, psychological fitness**
- (Much research in micro-g; little in 1/6 g)**
- Structures, furniture, utensils, textiles, etc.**
- (Almost no lunar validation work)**
- Terrestrial examples: Bamboo, reeds, woven fibers, tatami mats, inks and dyes, all could be tested in small 1/6 g experiments**



ISS Control Experiment Growth Chambers

ESA Photo

Recommended Actions

- **Scan terrestrial plant applications**
- **From that list, derive lunar priority apps.**
- **Select plants for tests in ISS at 1/6 g**
- **Meanwhile, promote student and young professional involvement, ground controls and innovative ideas**
- **Advocate revival or replacement of larger centrifuge for ISS**
- **Advocate additional lunar robotic demonstrations**