

Staying 2 weeks in MDRS as Mars emigration (MDRS Crew 137 Team JAPAN)

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Purpose

Crew 137 Team NIPPON stayed in MDRS during two weeks. Crew 137 Team NIPPON is a team only for the first Japanese. We recorded a physiologic change in the closed colony.

Method

We recorded the weight, body composition, blood pressure, stool frequency, the urination number of times during two weeks.

Result

The commander and the scientist were in state that their blood pressure were always high. We ate three meals a day. We ate the snacks also. One week later, the weight of all six people rose 1-2 kg. We changed dinner for breakfast. In this, the weight of all six people was recovered one week later as the beginning of this examination. Our weight was restored, but muscles decreased, and fat increased.

Conclusion

The muscles decrease even if we can maintain the weight, and fat increases only by meal management. We understand that we must exercise. More studies must be conducted about appropriate exercise. We want to study both meal and exercise on the next time.

Keywords: Mars emigration, Closed Colony, MDRS

Decade from Space Agriculture Concept - Some approaches within the next decade from a perspective of outreach

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It's been a decade since the concept of space agriculture began. Now we are looking ahead at the prospect of future Space Agriculture for the next decade. 2015 marks the 10th anniversary of the Space Agriculture task force that projects have been researching; now the established focus is a research goal for space agriculture to establish a system which would sustain 100 people living on the Moon or Mars for 20 years.

Research is proceeding on a variety of topics by space agriculture members, which will lead to new approaches and measures to be taken in the future.

For example, reviewing sustainable human life on earth, reviewing eating habits, change of age-related bodies and taste alteration. There will be discoveries about living organisms' ability to adapt to an extreme environment; etc.

Furthermore, agriculture is a comprehensive field including physics, chemistry, biology and geology in middle school and high school. Thus, instead of focusing only on individual segments of life sciences, the field of space agriculture offers multiple approaches and topics. Targets should be set for achieving goals.

Then, when we consider the next decade of space agriculture research, we believe that is necessary to continue outreach activities and strengthen our space agriculture research more than ever.

At first, I would like to propose the following five points for the expansion of the science community and planning.

1. To delineate and encourage a relationship between space agriculture research and integrated studies with environmental education, our everyday life, in school curricula.

To show middle school and high school students the importance and attractiveness of their research, and to create an opportunity for them to get interested in space agriculture research. Let them know that young people's participation in this study is important.

2. To create an overview of space agriculture research.

3. To create a list of available research laboratories and universities, and post them on a website.

4. To show the goal of space agriculture research clearly, and create a community sense of unity.

5. To organize an outreach team.

Keywords: Space Agriculture, Mars, Outreach, Integrated study