Growth of tomato plants under microgravity

*Yuan Takase[1], Shunta Kimura[1], Kaori Tomita-Yokotani[1]

1. University of Tsukuba

Circulation of foods would be important for achieving long-term on extra-terrestrial environments, such as Mars. I conducted an experiment by incubating tomato plants from their germination until the fruits could be harvested, under conditions of microgravity generated by a self-made 3D-clinostat. I investigated the number of seeds in the fruits and morphology of the plants grown under low gravity conditions, and compared them to those of the ground control. The purpose of this study was to show that tomatoes could be grown under conditions of microgravity. Tomato plants grown under microgravity could have fruits, but the fruits did not contain many seeds. These results revealed that the energy in the plants grown under pseudo-microgravity was not enough for the completion of the life cycle of tomato plants. Our result would contribute to food production in harsh environments, such as on Mars.

Keywords: tomato, microgravity

