Meal form for space foods

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As for the meal to eat in a spaceship, liquid must not be scattered. As for the meal to eat in a spaceship, ingredients must not be scattered. Therefore viscosity is necessary moderately. For a commercially available drink, we think that we can prevent a spatter in the outer space by acquiring viscosity using various thickeners. We used the nutritional aid drink that balance of the nourishment was thought about for a drink. In addition, a lot of thickeners are commercially available, too. We made meal by using the third generation thickener in that. The condition of food with thickener becomes thick; we check it by using line-spread-test: LST. We evaluated those foods by using LST.

Keywords: Thickener, line- spread-test:LST, Liquid

The need of the nourishment management based on the gene analysis in space foods

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Now that long-term space stay was enabled, the need of space foods to maintain health increases. Various diseases become the problem in the space. An example includes osteoporosis, high blood pressure, fatty liver, decline, hyperglycosemia of the muscle. It is necessary to become healthier by consuming space foods. The astronaut participates from all over the world. Their dietary habits are different each. Therefore a universal meal is necessary. In addition, it is necessary to think about the physiologic change of the astronaut. Based on the genetic analysis result that each astronaut has, it is in particular necessary to provide the nutrient which each astronaut needs. One with one of the weight and body fat changes by a genetic difference even if we eat the same space foods because basal metabolic rates are different. Many researchers came to perform nourishment management based on a gene analysis result on the earth. We think that it will be necessary to do nourishment instruction based on a gene analysis result in future likewise in the space.

Keywords: Gene analysis, Nourishment instruction, Space foods

Blood sugar level change after the disaster food intake as space foods (First report)

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A long-term stay was enabled in the space, and the study of space foods became the very important study for life support. It is necessary to prevent the lack of vitamins and the mineral. In addition, it is necessary to prevent hyperglycosemia after a meal. The possibility that various diseases were caused by long-term space stay by accumulated data was pointed out (osteoporosis and fatty liver, decline, cataract, high blood pressure of the muscle). The meaning that the nutritious meal is delicious is important. In addition, as for the disaster food used in the earth, long-term preservation is possible at normal temperature. We can use the disaster food as space foods. Therefore we thought about the combination of menus which prevented hyperglycosemia after a meal in lower than 10 g per day with salt to use disaster food as space foods this time. We really report it because I performed the blood sugar level measurement after a meal. The menus which we made of the day are as follows.
Breakfast: pork miso soup
Lunchi: seaweed udon
Dinner: five kinds of vegetables rice and yellowtail with the Japanese radish

Keywords: Space food, Disaster food, Blood sugar level

Taste and olfactometry result to think about the application for space foods

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A long-term stay in the space was enabled.
Therefore the health care of the astronaut is important.
The meal in particular is pleasure of the astronauts, and it becomes each other's communication tools.
Taste and the sense of smell become the very important sense to enjoy a meal.
Taste and the sense of smell may change from a change of the bloodstream in the outer space, too. It is necessary to consider it about taste change and olfactory change in the space, and to do the seasoning of space foods. Taste and olfactory are changing by age. Therefore we report the result because we investigated taste and olfactory ability from 40 years old to 70 years old for sense of recognition. We want to make use of this result for space foods development.

Keywords: Space food, taste , olfactory

The use of the insect as space foods

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A food production is a very important problem in space. The technology development for production of animal protein in particular is important. We think that the use of the insect is the most effective efficiently to produce animal protein in a narrow spaceship. We suggested the space foods using a silkworm pupa, a grasshopper, a larva of a wasp, an escargot, the white ant so far. We introduce "Pani" eaten this time as a precious protein source in Africa, Botswana. It is the insect which occurs when it rains in December and April. It is the food which is more expensive than beef. I remove the internal organs and boil it and am dried afterwards. We can save it when we dry up it. We store it during one year and eat. We put it in soup. We fries it with a tomato and onion and oil. We fries it with milk. It is the insect "Pani" which we want to add to space foods by all means.

Keywords: Insect foods, Pani, Space foods

Necessity of herb in space food

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The space foods in the long-term space stay are very important for life support. Nourishment balance is important for the space foods. Furthermore, it is necessary for space foods to be appetizing meals. We must think about securing of food to maintain life for up to three years to go to Mars. It is necessary to think about quantity of the food to take from the earth then. In addition, it is necessary to think about food to cultivate in a spaceship. Furthermore, it is necessary to think about food to cultivate on Mars. In the spaceship, it is necessary for cultivation of various food to be carried out. It is necessary for us to think about time when we got sick in a spaceship. Therefore the securing of plant which can become the crude drug with food is necessary. The cultivation of a plant becoming the medicine is necessary. Spicy grass and the spice are necessary, too. It is necessary to use the plant factory in the spaceship effectively. At the same time, we need to study about food-plant and medicine-plant.We report a growth record of herb becoming the medicine which we brought up this time on the earth. In addition, we report the menu using the herb.

Keywords: Space foods, Herb, Menu

Taste and olfactometry result for making space foods

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Taste and sense of smell are very important senses on making space foods. We investigated cognitive ability of the taste of general people and the olfactory recognition. 260 general people (12 male :16-50 years old and 248 female: 15-70 years old). Firstly we performed questionary survey. The content is as follows. Does saliva secrete it well? Do you understand the taste? Do you understand the smell? How is the everyday favorite seasoning? We checked the sense of the saltiness by using Sor save. It was 0.6%, 0.8%, 1.0%, 1.2%, 1.4%, six phases of 1.6%. We checked the olfactometry by using the smelling stick method. We inspected it for 12 kinds of smells. The results of the examination for saltiness were as follows. The person of 53% recognized in 0.6% saltiness. The person of 27% recognized in 0.8% saltiness. The results of olfactometry were as follows.The person of 12 correct answers was 16%, 11 correct answers was 24%, ten correct answers was 28% and nine correct answers was 15%. We want to think about good meal as space foods in light seasoning and in good smell in future.

Keywords: taste examination, olfactometry, Space foods

Applied pasta to space foods of the disaster food

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In a long-term unit to the space, the meal for life support is important. Because the astronaut of all the countries of the world performs cohabitation in the space station in particular, a universal meal is required. Therefore we thought about the disaster foods as space foods. The pastar is eaten by world people. We want to apply pasta of the disaster food to space foods.The pasta is eaten by world people. We want to apply pasta of the disaster food to space foods. We performed a seasoning evaluation. The pasta which investigated seasoning is peperoncino, carbonara, pasta of the mushrooms. We can make the pasta by using boiling water in three minutes. In addition, making pasta is in three minutes with a range and in 20 minutes with water. We evaluated ten points of taste at a perfect score and evaluated it in VAS score. As for result, average ±SD level ten points, as for the carbonara : hot water is 7.6±1.1, cold water is 5.8±2.1, the microwave is 7.9±1.4
As for the peperoncino: hot water is 7.2±1.5, cold water is 6.2±1.6, microwave is 7.7±1.8. As for the mushroom pasta: hot water is 6.9±1.3, cold water is5.9±1.5, microwave is 6.9±1.5.

Keywords: Space foods, Disaster foods, pasta

Blood sugar level change after the disaster food intake as space foods (Second report)

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A long-term stay was enabled in the space, and the study of space foods became the very important study for life support. It is not a purpose to consume a meal to satisfy hunger. It is important that I take in various nutrients in a body by consuming a meal. However, it is necessary to prevent various diseases in the space, too.The disease of the astronaut in the space has the following things: osteoporosis, the fat of the muscle; fatty liver, high blood pressure, hyperglycosemia, a cataract, a sleep disorder.Therefore we are making some menu in available disaster food as space foods. Furthermore, we report it because we measured blood sugar level after a meal. This is the menu: Breakfast is Bread of the Maple taste and rice cake with black syrup and soybeam flour, Lunch is Noodles with sauce, Dinner is steamed rice and hamburger steak.

Keywords: Space foods , Blood sugar level, Menu

By using a dietary fiber to prevent hyperglycosemia after to eat space foods

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We consider that we use disaster food as space foods. It is necessary to check the blood sugar level that is not high level after to eat the space foods. And we have to keep lower salt density in this space foods. The material which disturbs digestion and absorption to lower blood sugar level after a meal is necessary. The menu making by the combination of ingredients which a water-soluble dietary fiber has abundant and ingredients with a little glucide is necessary. Using the food which kept blood sugar level after a meal low, I made a disaster food menu. We really ate this menu and measured blood sugar level after a meal afterwards. The 20 female subjects were 20 years old. We measured blood sugar level before meal, after a meal in 15,30,45,60,90 and 120 minutes. We compared the blood sugar level between A group (which ate disaster food with dietary fiber: ten females) and B group (which ate disaster food without dietary fiber: ten females). Blood sugar level after a meal lowered the A group which ate disaster food with dietary fiber.We want to think about a method to prevent hyperglycosemia after a meal by taking in specific functional indication food like dietary fiber with a meal in the space foods in future.

Keywords: Dietary fiber, Hyperglycosemi, Space foods

By using a dietary fiber to prevent hyperglycosemia after to eat space foods The second report

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We consider that we use disaster food as space foods. The material which disturbs digestion and absorption to lower blood sugar level after a meal is necessary. The menu making by the combination of ingredients which a water-soluble dietary fiber has abundant and ingredients with a little glucide is necessary.Using the food which kept blood sugar level after a meal low, we made a disaster food menu.We really ate this menu and measured blood sugar level after a meal afterwards. The 20 subjects were 20 years old female. We measured blood sugar level before meal, after a meal in 15,30,45,60,90 and 120 minutes. We compared the group A which did not eat including the difficulty digestion dextrin and the group B which did eat including the difficulty digestion dextrin. Blood sugar level after a meal, the group B which ate disaster foods including the difficulty digestion dextrin was low. We want to think about a method to prevent hyperglycosemia after a meal by taking in the food including the difficulty digestion material with a meal in the space foods in future.

Keywords: Difficulty digestion dextrin , Hyperglycosemia, Space foods

