

Let's make a space food by using Peucedanum Japonicum which is medicinal herbs

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Purpose

In a long-term stay in the space, the meal is very important. It is necessary to have the balanced meal every time not to get sick. Therefore it is necessary for space foods to prepared dishes with medicinal herbs. The reinforcement or cancer prevention of immunity were intended that superior efficacy made space foods using prospective Peucedanum japonicum. The Peucedanum japonicum has bitter taste, but considered the method that we could use Peucedanum japonicum as snacks, deliciously.

Method

At first we made a liquid of Peucedanum japonicum by using a mixer. I made three kinds of snacks which are pound cake, dumpling and shortbread with the liquid of the Peucedanum japonicum. We did a sensuality test for subjects and we get the result of taste and the result of smell. The perfect scores of sensuality test is 10 points. To make a pound cake, we mixed 200 g of pancake mixture with 180g of Peucedanum japonicum. And we baked it by using 180 degree oven during 30 minutes. Furthermore, I made the poundcake which I added 10 g of powdered green tea in this basic recipe. In addition, the dumpling mixed 150 g of powder with 130g of nonglutinous rice powde.And we mixed Peucedanum japonicum in that dumpling. We steamed it with 100 degrees for 30 minutes. The shortbread mixed 250 g of weak flour, powder from nonglutinous rice 50 g, sugar 80 g, butter 175 g, Peucedanum japonicum 25 g and leaf 6 g of the mint. And we baked it at 170 degrees for 45 minutes.

Result

We were able to eat deliciously without feeling bitterness of the Peucedanum japonicum by eating snacks. I judged even a sensuality examination to be delicious from a primary schoolchild to an elderly person. By butter, by wheat flour and by the cooking process, Peucedanum japonicum taste is better than before. It is easy to eat after cooking.

Consideration

The Peucedanum japonicum taste was not bitter after cooking. And it was able to eat. Peucedanum japonicum have cancer protective efficacy. It is necessary to take as medicinal herb to keep our body health in the space. The space radiation including danger of the carcinogenesis may be accompanied in the space. Next, we would like to make the side dish by using peucedanum japonicum. And we would like to say utilization of medicinal herbs widely generally in future.

Keywords: Space foods, medicinal herbs, medicinal meal, Peucedanum Japonicum, snacks

Low GL menu by using Low GI food is good as Space food

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Purpose

We became able to stay in the space for a long term. The offer of the meal appropriate to the active mass in the space is necessary. Therefore a menu offer to become the meal contents which are hard to go up of the blood sugar level is necessary. Metabolic syndrome becomes the problem on the earth. It is necessary to inform how it is important that we prevent hyperglycosemia after a meal widely. Similarly, in the space, you should consume the meal which is hard to go up of the blood sugar level. It is important that we do disease prevention. Therefore in this study, we made a menu (low GL food menu) which was hard to go up of the blood sugar level using food (low GI food) which was hard to go up of the blood sugar level.

Method

We collected low GI foods. We put low GI food together and made the low GL food menu which was hard to go up of the blood sugar level. This menu is Unpolished rice, Wheat, Miso soup, Meuniere of the salmon, Boiled vegetables, Black sugar syrup agar. We use this menu and we measured blood sugar level by using peripheral blood. We checked our menu which is really became the low GL by using peripheral blood. We check our blood sugar level by using Kit (product made in Terumo Corporation), before eating this food and after 15 minutes, 30 minutes, 45 minutes, 60 minutes, 90 minutes and 120 minutes.

Result

Cooking method was very important to make low GL menu. When we make soft food and eat it, our blood sugar level become high easily. Because when we make rice and boiled vegetables softly, the GL level of the actual survey became higher.

Discussion

We think that it is desirable to perform by using low GI food to make low GL menu. And we think that the cooking method is very important to low GL menu. The space food must be good balance diet. By feeling of satisfaction and slow digestion and slow absorption, it is possible to prevent a sudden rise of the blood sugar level.

Keywords: Low GI, Low GL, Blood sugar level, Diabetes, Spece food

Two weeks stay in Mars Desert Research Station(MDRS)

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I obtained an opportunity to participate in MDRS137. I cooked food for crew in MDRS137.

I made a menu using the commercial article that long-term preservation was possible as space foods. The basic meal was that, rice of the freeze dry, vegetables of the freeze dry, soup of the freeze dry, a retort pouch, canned food, dried fruit, a cookie and a candy. I can keep that food during long time.

Three women and five men participated in this study. The nutrient and the energy of the meal calculated it in consideration of the age, sex and active mass of the subject. I provided a meal of 1600kcal to woman 53 years old. I provided a meal of 1750kcal to woman 21 years old. I provided a meal of 1800kcal to male 50 years old. I provided a meal of 2000kcal to male 41 years old.

The significance of this study is the point that not only the use of the commercial preservation food as space foods but also the food problem at the time of the disaster can solve. It is necessary to make 42 kinds of menus to spend 14 days in MDRS. I thought about a combination of the commercial freeze dry rice and canned food of the fish. In addition, I thought about the combination of freeze dry soup and freeze dry vegetables.

Because 42 menus were gathered up as a booklet, I want to distribute this result widely in future. I hope that people will have interest in the space after to read that booklet. And I can enlighten people about combination of commercial food for the disaster.

Keywords: Closedown space, Life-support system, Space foods

The recommendation of using the commercial disaster food as Breakfast -To consider it as space foods-

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Purpose

At the present, the people who do not eat breakfast increase in Japan.

The Japanese Government recommends that we have breakfast well. As same as, the importance of the meal in the space rise more. Development of the space food which can store for a long term is urgent business. Because, we think about an exploration and emigration to Mars. Delicious space food is very important for the astronaut to keep their appetite. We perform questionnaire survey about the breakfast. I clarify the frequency of the breakfast intake. In addition, I clarify what kind of breakfast was eaten. Therefore in this study, we examined sensuality of the commercially food which can keep for a long term. And based on the result, we thought about the taste and smell in future space foods.

Methods

Fifty female college students(20-21 years old) answered the questionnaire about breakfast intake frequency and about contents of breakfast. Fifty female college students (20-21 years old), they eat some commercially available rice things (eight kinds) which can store for 7ve years. And we performed to do sensuality examination for them. Students carried out the sensory examination and scoring (Perfect score is 10) of food. The marketing products are cooked with hot water in 15 minutes and cold water in 60 minutes. Vegetable rice, shrimp pilaff, perilla and seaweed rice, chirashi-sushi, white rice, fried rice, beef rice, dry curry of the magic rice (product made in Satake Corporation) .

Results

The contents of breakfast were one or two kind of food. People have no time to make breakfast because of busy. An evaluation was high in the taste in order of vegetable rice, dry curry, beef rice, chirashi- sushi, fried rice, perill and seaweed rice, and white rice.

Conclusion

Because people were busy in the morning, a balanced meal to be able to make in a short time was required. This disaster food is just fit as breakfast very much. As for both the taste and the incense, five vegetable rice, fried rice with meat, vegetables and curry rice, stewed beef rice occupied the high rank. Space foods passing globally are necessary. This commercially available disaster food is suitable for both space foods and breakfast very much. We want to examine not only the rice but also the side dish in future.

Keywords: Breakfast, th ecommercial disaster food, Space food

The need of the lactic acid beverage in space foods

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Purpose

The long-term space stay makes it possible to perform many studies. We think that the development of space foods will develop more in future. The meal management to maintain the health of an astronaut working busily is important. With lactic acid bacterium beverage, we thought that we want to perform the health care of the astronaut. Therefore we decided to check the effect on bowel movement of the lactic acid bacterium beverage.

Method

We assumed twenty adult women (average age 20.5 years old) as subjects. Before experiment start, during two weeks, we took the bowel movement record. Twenty students participated in an experiment. We divided it into two groups of ten students of the constipation and ten students of the non-constipation. We boiled Y Company lactic acid bacterium beverage (40% of calorie off) at 100 degrees during three minutes. During two weeks, we let the ten constipation consume the lactic acid bacterium beverage which we boiled and recorded the state of the bowel movement. Another two weeks, we let them consume the lactic acid bacterium beverage which we did not boil and recorded the situation of the bowel movement afterwards. Ten students of the non-constipation tested it in order to reverse-turn with ten students of the constipation. After the experiment end, we recorded the situation of the bowel movement during two weeks. The record contents were the stool frequency, smell, shape and number of times of the gas.

Result

Stool frequency was improved in the constipation group by the lactic acid bacterium intake. In the case of the non-constipation group, the big change was not seen in stool frequency. However, in both groups, the degree of smell was improved clearly.

Discussion

In constipation group, stool frequency was increased after drinking of the lactic acid beverage. A bowel movement state might be improved by an oligosaccharide and the lactic acid included in the lactic acid bacterium drink. However, when constipation group stopped the intake of the lactic acid beverage, their stool frequency was not good as before. It is necessary to consume the lactic acid bacterium drink continuously

Keywords: Lactic acid, Beverage, Space foods