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ANAEROBIC PRODUCTION OF WHEAT IN MARS

Abstract

Introduction: Wheat can be considered a staple food in many different cultures around the world. There is a big deal a variety of foods that may be present with wheat: pasta, noodles, bread, pizza, chapati, etc. Based on a variety of uses, wheat could be the most interesting food option to be produced on Mars. This is a reason to consider why we need it try to answer the question: why should we grow wheat and would it be possible to produce wheat on Mars? This study provides an in-depth discussion on both of these questions and provides clues to its answers. Methods and results: to determine the potential for wheat production on Mars, the following was explained: steps: 1) Look at the books for production per hectare / meter2. 60 bags / hectare or 4-5 bags were identified tones per hec. That is, 400 g by m2. 2) Determine production area: in the concept of a 25house greenhouse module m circle and present 4 shelves. Planting area is approximately 100 m2 . This module will be introduced 100 m2 for food production. In this case it is possible to produce 40kg of wheat. 3) Determine the value wheat production during the year: taking into account the number of days in the production cycle throughout the year. Wheat cycle = 100-170 days. In a year there may be two cycles, i.e. about 85 kg. 4) Find the number of calories that food can produce: Noodles per 1kg can produce 3600 calories. 5) Imagine the number of calories to supply to the atmosphere: the average person on Earth, according to the World Health Organization, provides 2500 Calories. 6) Find out how many days the 100m2 wheat planting is: considering that the astronauts are eating an average 2500 calories each: 85 kg production can produce 309.176 calories. This number of calories can be found 123 days with food for one star only. Discussion: Although wheat can be an interesting food that forms the basis for a wide variety of foods, It is very disappointing to point out that 100m2 will provide only 85kg of wheat throughout the year as well food needed only 4 months for one astronaut. In this case, it would be much better to transport the wheat from Earth, and modified to contain more nutrients, instead of producing these foods in the greenhouse. Greenhouse it was to be used to produce other crops. And it is necessary to have in-depth discussions to find out: 1 - Energy, water and oxygen required; 2 -Management requirements (working hours); 3 - Losses and risks; 4 - Carbon dioxide handling and control; 5 - Plant height; 6 - Root types / sizes and 7 - Refined resources are available in the sewage system 8 - Procedures / time plans to follow 9 - Active light systems (natural / artificial) All these steps are important to determine which crop is best for nutrient-related efficiency, to be planted / cultivated on Mars. It it is advisable to continue with studies examining different plants, and to conduct experiments in analog living environments.