

19th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)

Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies
(2B)

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PRODUCTION EVALUATION OF HAEMATOCOCCUS PLUVIALIS, CHLORELLA SP. AND
ARTHROSPIRA MAXIMA AS AN ALTERNATIVE SOURCE OF PROTEIN AND ANTIOXIDANTS
FOR THE PRODUCTION OF FOOD AND OXYGEN FOR SPACE TRAVELERS

Abstract

The goal is the establishment of totally self-sustaining microalgal cultures facing to the possibility of being an alternative for the production of oxygen and food for travelers space. Thus, microalgae cultures can be a terraforming tool in the colonization of Mars, since on that planet areas have been found where the water is in a state of freezing. However, within the variables to experiment for the development of systems microalgae on the Moon or other planets, or in transport vehicles, are among others the tests biologicals as suitable diagnostic tools to determine the effect of physical and chemical agents on test organisms under experimental conditions specific and controlled. These effects can be both inhibition and magnification, evaluated by the reaction of organisms, such as death, growth, proliferation, multiplication, morphological, physiological or histological changes. The adaptation of microorganisms to the environmental conditions of the area where it is expected that the crops should be started taking into account the effects that may manifest at different levels, from subcellular structures or enzyme systems, to whole organisms, populations or communities. These elements are raised under 14 key subsystems for the settlement of humans in another celestial body