

SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FAR FUTURE (D4)  
Contribution of Space Activities to Solving Global Societal Challenges (4)

Author: Mr. Dominik Quantius

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, Dominik.Quantius@dlr.de

Mr. Daniel Schubert

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, daniel.schubert@dlr.de

Dr. Jens Hauslage

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, jens.hauslage@dlr.de

Mr. Kai Wasser

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, kai.wasser@dlr.de

Dr. Gerhild Bornemann

Deutsches Zentrum fuer Luft- und Raumfahrt (DLR), Germany, Gerhild.Bornemann@dlr.de

Dr. Thorsten Kraska

University of Bonn, Germany, kraska@uni-bonn.de

FOOD PRODUCTION WITHIN A CONTAINER BY RECYCLING URINE AND ORGANIC WASTE

**Abstract**

For long duration space missions fresh food and re-use of materials is mandatory. Also on Earth there are harsh or closed environments where fresh supply of food is not possible. Thus a highly efficient mobile and modular system for food production would be of great value. As test bed for further development of such a system a hydroponic plant area combined with a system for biological treatment of urine and organic waste, including water, air, light and power handling, were laid out in the framework of a Concurrent Engineering design study to be integrated into a high cube standard container. In this paper the study's outcome i.e. configuration and input and output ratios are described.