GROWING PLANT(S) AT A MOONMARS HABITAT OR/AND DEDICATED EXTERNAL SPACE. A. Tomic[2.] .L. Authier[1,2,4], A. Blanc[1,2,4] , B.H. Foing[1,2,3] , A. Lillo[1,2,4], P. Evellin[1,2,5], A. Kołodziejczyk[1,2], C. Heinicke[2,3], M . Harasymczuk[1,2], C. Chahla[1,2,5], , S. Hettrich[6], [1]ESA/ESTEC & [2]ILEWG (PB 299, 2200 AG Noordwijk, NL, Bernard.Foing@esa.int), [3] VU Amsterdam, [4] Supaero Toulouse, [5] ISU Strasbourg, [6] SGAC

Introduction: We developed an experiment growing plants for the human use, as a food or/and additional oxygen / energy source, that could be adapted on a Moon lander.

Phases of research and simulation:

1) In the specially created simulant copy of Moon soil, which we got from ESTEC team, we planted 3 different seeds. Seeds were couted in the mixture of clay and minerals.

2) The Moon soil was treated in the first two weeks only with a water and LED red-blue light in the daily rhymical way to support and accelerate plants grow.

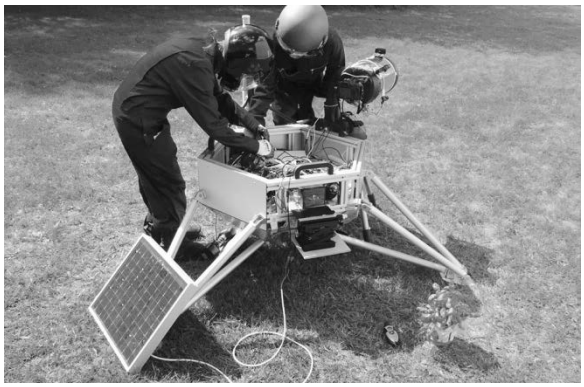
3) After two weeks on the top of water-light, soil was treated with the additional minerals:
   a. 2.7% nitrogen organic (N)
   b. 1.3% anhydride phosphoric (P2 O5)
   c. 5.9% potassium oxide (K2 O)

Plant growth Experiment at the Moon Lander:

During the EVA at the Euro Moon Mars – Moon short simulation at the ESA-ESTEC, astronauts have performed spectrometric reading of the plants leaf with the USB4000 device located at the Moon Lander.

The spectrometer was remotely controlled from the Habitat controlled by Habitat CapCom in the synchonised action and communication with the astronautls outside.

In addition of collection more data, we performed also remote reading of Moon Lander thermometer and hygrometer.



Data collected in this process first was stored at the Habbitat local data server, and than transferred to the Mission Control for the further analyses.

Acknowledgements: we thank ILEWG Euro-MoonMars programme, and participants to the ESTEC EuroMoonMars 2017 workshop and simulation.