



# Mealworms on Martian diet

**WUR researchers have been considering how to grow crops on Mars and the Moon for some time. Food Quality Management Master's student Lotte Bohlander came up with the idea of using animal protein in the form of mealworms.**

How well do mealworms grow on the waste streams of vegetables cultivated in Martian soil? The researchers of 'Food for Mars and Moon' are looking into this. This project, headed by ecologist and exobiologist Wieger Wamelink, initially only considered crops on the assumption future Martians would be vegan.

But humans need a well-balanced Martian diet, says Lotte Bohlander. 'Astronauts need to do strength training, for example, and that requires a lot of proteins. Animal proteins are easier for humans to break down and absorb. The high-grade proteins in mealworms fit well in the Mars scenario:

**'We ran a pilot to see whether the mealworms enjoy an Earth-bound diet'**

they are good quality and can be used to process waste streams.'

## Lose weight

Bohlander: 'We already ran a pilot to see whether the mealworms enjoy a diet of Earth-bound waste streams. They get fed the waste from maize, leafy greens, potato peel, carrots, basil and so on. Fortunately they survived on this, although they lost a little weight. We then came up with a better mix so they would put on weight again.'

Project manager Wamelink sees the mealworm as an opportunity to create a circular agricultural system for Space: 'You need to break down organic material to turn it into manure. Mealworms are very efficient, plus we can eat them ourselves.' <sup>1B</sup>