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FOOD PREPARATION STRATEGIES AND FOOD SATISFACTION UNDER MARS MISSION ANALOGUE CONDITIONS

Abstract

Crews of the 2008-2009 and 2009-2010 seasons at the Mars Desert Research Station, a Mars analogue facility, lived under Mars simulation conditions for two-week "missions" during which their food supply consisted of "instant" freeze-dried foods, shelf-stable packaged foods, and shelf-stable staple ingredients requiring no refrigeration. Crews alternated between days of no cooking, using only "instant" and prepackaged foods, and cooking days during which the main meal and optional other foods were prepared by crewmembers using the supplied shelf-stable ingredients. Equipment provided included a breadmaker, stove, oven, sprouting kit, and a small refrigerator/freezer. We assessed crewmembers' mood state, health, food preparation time, and food intake by daily questionnaires. Crews also rated the foods at their main meal for acceptability and noted their relative intake of each food. Our hypothesis was that crews would prefer even on relatively short duration missions, crews would prefer custom prepared meals to instant meals despite the burden of preparation time and effort. Overall, crew satisfaction with the food was high for both the custom prepared and instant meals. Compliance with the study rules varied widely from crew to crew, depending on the degree of support by the crew commander, the crew's interest in the study, and their cooking expertise. The social aspects of meal preparation and eating together had a positive effect on team morale.