

Fiscal Year:	FY 2006	Task Last Updated:	FY 12/07/2010
PI Name:	Perchonok, Michele Ph.D.		
Project Title:	Thermostabilized Food Study		
Division Name:	Human Research		
Program/Discipline:	HUMAN RESEARCH		
Program/Discipline--Element/Subdiscipline:	HUMAN RESEARCH--Space Human Factors Engineering		
Joint Agency Name:		TechPort:	No
Human Research Program Elements:	(1) SHFH :Space Human Factors & Habitability (archival in 2017)		
Human Research Program Risks:	None		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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Organization Name:	NASA Johnson Space Center		
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City:	Houston	State:	TX
Zip Code:	77058	Congressional District:	22
Comments:			
Project Type:	GROUND	Solicitation / Funding Source:	Directed Research
Start Date:	08/01/2001	End Date:	11/30/2008
No. of Post Docs:	0	No. of PhD Degrees:	0
No. of PhD Candidates:	0	No. of Master' Degrees:	0
No. of Master's Candidates:	0	No. of Bachelor's Degrees:	0
No. of Bachelor's Candidates:	0	Monitoring Center:	NASA JSC
Contact Monitor:	Woolford, Barbara	Contact Phone:	218-483-3701
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Flight Program:			
Flight Assignment:	NOTE: Moved to Space Human Factors Habitability/Advanced Food Technology in 2006 and extended until November 2008 (jvp 5/2009 info from PI)		
Key Personnel Changes/Previous PI:	0		
COI Name (Institution):			
Grant/Contract No.:			
Performance Goal No.:			
Performance Goal Text:			

Task Description:	<p>The National Aeronautics and Space Administration (NASA) is working towards future long duration manned space flights beyond low earth orbit. The duration of these missions may be as long as 2.5 years and will likely include a stay on a lunar or planetary surface. For these long duration missions, a shelf life of 3 to 5 years for the prepackaged transit food system is required.</p> <p>Of the preservation methods currently being used at NASA for the Shuttle and International Space Station food systems, the thermostabilized items will have the longest shelf life. Currently four approved International Space Station thermostabilized packaged foods are undergoing accelerated shelf life testing in the Space Food Systems Laboratory (SFSL) at NASA/Johnson Space Center. The foods, bread pudding, carrot coins, tuna noodle casserole, and apricot cobbler, are being stored in controlled temperature chambers at 40oF, 72oF, and 95oF. Analytical tests to measure color, texture, pH, and water activity will be correlated with the sensory tests to determine the changes occurring in the foods. The sensory tests will measure the difference from control (40oF) as well as overall acceptability. Nutritional analysis will be completed three times during the shelf life test.</p> <p>The objective of this research is to continue the shelf life determination of these four thermostabilized food items. Sensory and analytical data will be collected every four months on the four food items that will be stored at 40oF, 72oF, and 95oF for approximately 3 years. The shelf life test will be terminated after 3 years or whenever the product becomes unacceptable, if before 3 years. In addition to determining the shelf life of these foods, a better understanding of the chemical and physical changes that can occur throughout their shelf life will be learned.</p> <p>Also, as part of this year's tasks, a document describing the accelerated shelf life testing protocol for NASA/JSC will be completed. It will combine the practical portions of a sensory protocol written in FY01 (SFSL Sensory Protocol, 2001) and the analytical tests that have been developed in Fiscal Year 2002.</p> <p>The objective of this project was to continue the accelerated shelf life testing of four thermostabilized food items: apricot cobbler, tuna noodle casserole, bread pudding, and carrot coins. Sensory and analytical data were collected every four months on the four food items stored at 40oF, 72oF, and 95oF.</p> <p>To provide an accelerated shelf life test protocol for thermally processed pouches with a potential 3 - 5 year shelf life.</p>
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	Extended shelf life foods will be important for third world countries, camping environments, and survival experiences.
Task Progress:	<p>No progress report received this reporting period.</p> <p>[Ed. note: added record in December 2010 to reflect change in 2006 from ADVANCED HUMAN SUPPORT TECHNOLOGIES program to HUMAN RESEARCH PROGRAM/Space Human Factors Engineering/Advanced Food Technology]</p>
Bibliography Type:	Description: (Last Updated: 01/30/2012)