



# Sensory Data Acquisition and Analysis for Ration and Clothing Design

## Overview:

The design of military rations and clothing requires in-depth analysis of the human sensory and hedonic (like/dislike) responses to these items. In the case of rations, the sensory attributes that contribute to soldier/consumer liking or disliking are the appearance, odor, flavor and texture of the product. In the case of military clothing, the sensory factors that contribute to comfort or discomfort are the tactile characteristics of the fabric. The U.S. Army Natick Soldier Center is home to one of the world's leading research programs on sensory and consumer behavior as it relates to food and clothing. This world-class research organization conducts a full-range of sensory, psychophysical, and consumer studies on the factors that contribute to optimal satisfaction and utilization of rations and clothing, using state-of-the-art computerized testing facilities.

## Research Methodologies/Capabilities:

- Univariate and multivariate human psychophysical analyses
- Difference testing techniques applied to rations and clothing
- Descriptive analytic techniques (flavor, texture, and handfeel)
- Hedonic and consumer acceptance techniques
- Laboratory-based meal consumption studies
- Preference, attitudinal & survey techniques
- Individual Interview and Focus Group Techniques

## Facilities:

- Fully computerized, on-line, sensory data acquisition and management system (SIMS 2000)
- Individualized light- and climate-controlled sensory testing booths
- Descriptive testing/Focus Group rooms
- Experimental dining room with commercial cafeteria/ serving line
- Food processing, preparation and test kitchen
- Environmentally controlled fabric conditioning/testing rooms
- In-house, trained descriptive panels (flavor, texture, and handfeel)

## Accomplishments:

Recently completed research studies include those on sensory/instrumental analyses of extruded, microwave assisted, and shelf-stable food products, the role of sensory information on the perception of unfamiliar foods, predictors of acceptance, consumption and satisfaction in naturalistic eating situations, the development of food appropriateness measures as an adjunct to laboratory consumer testing, the development of a category-ratio scale for assessing liking and comfort, and the evaluation of sensory and cognitive factors affecting fabric perception and comfort.

## Point of Contact:

### Supporting Science & Technology Liaison

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