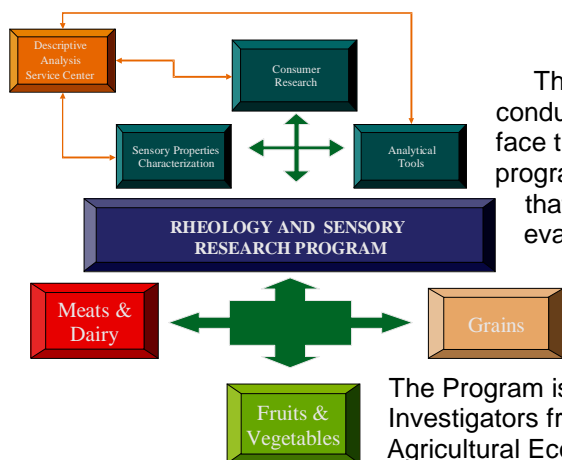


RHEOLOGY AND SENSORY RESEARCH PROGRAM

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Mission Statement

The mission of the Rheology and Sensory Research Program is to conduct both basic and applied research addressing the challenges that face the food industry with respect to the sensory quality of foods. This program is directed to provide basic information to the US food industry so that food quality can be optimized. The program focuses on the evaluation of processes and their effects on sensory quality, the development of sensory and instrumental methodologies for reliably evaluating sensory characteristics of foods, and the understanding of the relationship between consumer acceptance and sensory properties of foods.

The Program is to be multidisciplinary in nature and will involve Principal Investigators from the Food Science, Poultry Science, Animal Science, and Agricultural Economics Departments.

Program Description

One of the unique characteristics of this Program is the availability at the UofA, within the Institute of Food Science and Engineering, of a professional descriptive sensory panel. The panel composed of 12 professionals (hourly employees) is trained in quantifying sensory attributes of foods such as appearance, aroma, flavor and texture. The method used by the panel (Sensory Spectrum Profiling) is tailored to be extremely flexible with regard to the type of foods that can be profiled. As a result, the panel is able to profile sensory characteristics of foods such as meats and dairy products, fruits and vegetables, and grains. This feature will facilitate the collaborative efforts between scientists dealing with various food commodities.

The University of Arkansas Rheology and Sensory Research Program encompasses research evaluating the effects of animal and food processes on food quality. The program is organized in three interactive research areas:



Trained panelists evaluating sensory characteristics of processed foods

1. **Sensory Properties Characterization:** This focus area addresses research needs in the areas of evaluation method development and quality assessment. Quality assessment is performed and related to food process issues such as process effects, quality control, product shelf life and product development.



2. **Consumer and Market Research:** This focus area addresses research issues concerning the development of a better understanding for consumer preference and/or acceptance of food products. In particular, efforts are devoted to the evaluation and utilization of state-of-the-art modeling methods for optimizing consumer acceptance.

Acceptance of domestic and imported rice by U.S. consumers is being elucidated by Preference Mapping

Standard instrumental methods such as the Warner-Bratzler test (top) are being compared to novel puncturing methods (bottom) for predicting meat toughness

3. **Analytical Tools Development:** This focus area is the flagship of the Rheology and Sensory Research Program. It focuses on the development of alternative methods for predicting sensory properties of foods. In particular instrumental methods relying on advanced modeling techniques such as Artificial Neural Networks and Fuzzy Logic are being used to predict food texture.

