United States Department of Agriculture

Agricultural Research Service

Western Regional Research Center (WRRC)

Historical Achievements

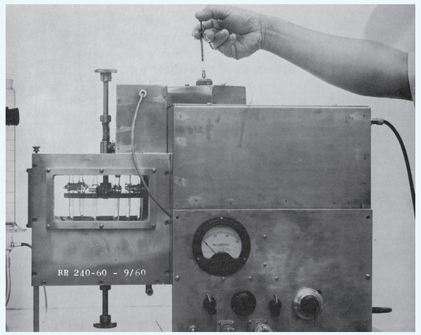
- National Historic Chemical Landmark Award for developing procedures to produce high quality and stable frozen foods
- National Historic Chemical Landmark Award for determining the chemical essence of flavor
- Developed methods to dehydrate and concentrate foods
- Developed procedures for creating sourdough bread
- Developed new gas chromatography and nuclear magnetic resonance analytical techniques

Current Research Units

- Bioproducts
- Crop Improvement and Genetics
- Exotic and Invasive Weeds
- Foodborne Toxin Detection and Prevention
- Healthy Processed Foods
- Produce Safety and Microbiology

Pilot Plant Facilities and Equipment

- 45,000 sq. ft. pilot plant
- Ambient and heated mixing
- Atmospheric and vacuum canning
- Culinary steam blanching
- Coating
- Cutting and milling
- Injection molding
- Hot and cold presses
- Extrusion (single and double screw)
- BioFlo IV reactor
- Filtration (physical, ultrafiltration, reverse osmosis)
- Spray drying, vacuum evaporation, and freeze drying
- Freezing
- Pasteurizing
- Peeling
- Puffing
- Size reduction
- Materials testing
- Pelletizing
- Jet cooking



One of the world's first practical gas chromatographs built in 1953.

Frozen foods created using WRRC research methods.

Overview of the pilot plant.

Improving the heat tolerance of environmentally friendly plastic made from corn.

Western Regional Research Center 75 Years USDA-ARS

Research for the Growing World

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