Institute of Food Technologists Annual Meeting, Las Vegas, NV, July 14, 2004

33C-10

Thermal process development of a home-canned salsa-type product

E. M. D'SA and E. L. Andress. Dept. of Foods & Nutrition, Univ. of Georgia, 208 Hoke Smith Annex, Athens, GA 30602-4356.

Adequate thermal treatment in home-canned products ensures product safety from pathogens including *Clostridium botulinum*, eliminates the risk of spoilage microflora outgrowth and ensures product shelf-stability.

The objective was to experimentally calculate a thermal process recommendation for home canning of an acid salsa-type product and to determine the effect of consumer procedural variations on product heat penetration patterns.

An original standardized cranberry salsa (equilibrium pH 3.1) was filled into pint home canning jars. The cold spot was determined with thermocouples inserted through two-piece canning lids, to monitor temperatures at each of five potential cold spots in eighteen canner loads. Sealed jars were placed in a boiling water canner and temperatures recorded using Ellab^{TM} software, through come-up, cool down, and a processing time that ensured that all jars reached a minimum of 2°C below processing temperature. Analyses of f(h) values (slope of the straight line portion of a heating curve) located the cold spot at the geometric center of the jar. Product cold-spot temperatures were then monitored through canning processes that produced a minimum temperature of 90.5°C, for standard filling procedures and variations of high-fill weight and low-initial temperature procedures.

A calculated 10 min boiling water process ensures adequate thermal treatment for this product. Up to a 10 minute post-cook lag prior to filling jars, and up to a 30g increase in product fill weight did not significantly change f(h) values, when compared with the standard treatments.

Home canning is a significant means of food preservation in some U.S. households, utilizing seasonal produce and in some cases contributing to food security. Confidence in thermal processing methodology recommendations is necessary for novel ethnic-type products. This paper presents data on thermal processing studies carried out on a conduction-heating food item and explains the effects of procedural variations inadvertently introduced during the canning process.