

**Conference for Food Protection
2012 Issue Form**

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Council Recommendation:	<input type="checkbox"/> Accepted as <input type="checkbox"/> Submitted	<input type="checkbox"/> Accepted as <input type="checkbox"/> Amended	<input type="checkbox"/> No Action	<input type="checkbox"/>
Delegate Action:	<input type="checkbox"/> Accepted	<input type="checkbox"/> Rejected	<input type="checkbox"/>	

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Title:

Reduced Minimum Temperature for Microwave Steam Cooking of Seafood

Issue you would like the Conference to consider:

Section 3-401.12 of the 2009 edition of the FDA Food Code requires that raw animal foods, including seafood, heated via microwave energy must attain an internal temperature of at least 165°F. However, traditional steam heating of seafood products need only attain an internal temperature of 145°F. The recently published paper, "Utilization of Steam Heat Generated via Microwave Energy" (attached) summarized the results of a study that was conducted to evaluate the effectiveness of steam heat processing of seafood within a covered pan containing water with the energy generated via microwaves [1]. The study demonstrated that when water was added in a ratio of 30ml per pound of seafood product and placed within a covered container in a microwave oven, microwave energy effectively converted the water to steam and thoroughly cooked the product within 4 minutes (2 minutes cooking time plus 2 minutes holding time). Internal product temperatures in excess of 145°F were consistently recorded at each of seven sites along the products. The study showed that there was no appreciable difference between the cooking of seafood in a conventional steam oven and that of cooking seafood in a covered pan containing a measured quantity of water with microwaves used as the steam generating energy source.

[1] Specchio, J., Schrade,J., & Unanski, M., 2011, Food Safety Magazine, Utilization of Steam Heat Generated via Microwave Energy

Public Health Significance:

The FDA Food Code permits seafood products to be safely cooked in a conventional steamer to an internal temperature of 145°F. The study referenced above demonstrated that heat transfer within seafood products via microwave generated steam in a covered pan with water added was comparable to the heat transfer within a convention steamer.

There are several advantages to using microwave energy to generate steam to cook seafood in covered pans. First, the microwave units are portable and don't require expensive and complicated steam and waste water plumbing hookups. Second, there are many microwavable-safe containers available in different sizes to economically accommodate the volume of food items being prepared. Third, the stainless steel microwave units as well as the containers are easily cleaned and sanitized. Fourth, cooking time is reduced in comparison to conventional steam units yet safe internal product

temperatures are attained. Fifth, there is a large savings in energy costs using microwaves to generate steam as opposed to using convention gas or electric steaming units.

Recommended Solution: The Conference recommends...:

that a letter be sent to the FDA requesting the 2009 Food Code (as modified by the Supplement issued in 2011) be amended as follows (new language shown with underline):

3-401.15 Microwave Cooking of Seafood

Raw seafood cooked in a microwave oven shall be:

(A) Placed within a covered container with the addition of a sufficient amount of water to cover the bottom of the pan;

(B) Steam heated to a temperature of at least 62.8°C (145°F) in all parts of the food; and

(C) Allowed to stand covered for 2 minutes after cooking to obtain temperature equilibrium.

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Attachments:

- "Utilization of Steam Heat Generated via Microwave Energy"

It is the policy of the Conference for Food Protection to not accept Issues that would endorse a brand name or a commercial proprietary process.