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## **Food Protection Program Policies, Procedures and Guidelines**

**Issue:** General Guideline for the Safe Preparation of Sushi

**No:** RF 3-2

### ***Background***

There are several food safety concerns, which are unique to the preparation and service of sushi in the retail setting. The rice handles best at temperatures between 70° and 80° F, which is a favorable temperature range for pathogen growth. In addition, many people prefer to eat sushi at room temperature, which makes refrigeration storage less desirable. Raw fish is a common ingredient in sushi and may contain harmful bacteria and viruses. Many species of fish are known to harbor harmful parasites. Sushi made with raw fish is often prepared alongside sushi prepared with cooked and vegetable ingredients which increases the risk for cross-contamination of cooked products from raw ingredients. Lastly, sushi is in demand. Once found only in Japanese restaurants, sushi is now commonly prepared and sold in many restaurants, smaller retail markets and large supermarkets.

### ***Sushi rice***

Many sushi chefs prefer to use the rice at room temperature. Since cooked rice is a potentially hazardous food (PHF), this practice can pose a significant health risk. There are three basic strategies that can be used to prepare and hold the rice safely.

1. Sushi rice is typically acidified with rice vinegar. If the pH of the rice is brought down to below 4.6, the rice will no longer support the growth of pathogens and can be considered a non-PHF. Rice that has been properly acidified can be left out at room temperature. However, if an establishment wants to rely on acidification to make the rice safe, the pH of every batch must be checked to insure that the rice has been rendered a non-PHF in accordance with the Department's guideline on Making Cooked Rice a Non-PHF.
2. An establishment that chooses not to use acidification to make the rice a non-PHF must use approved time and temperature controls to prevent pathogen growth.
3. Establishments which prepare sushi for immediate consumption may obtain a variance to use Time as a Public Health Control to hold the rice at room temperature during preparation and service. The variance must be in accordance with the Department's guideline on using Time as a Public Health Control.

### ***Parasites***

Many species of finfish naturally contain parasites. These parasites do not harm the fish or hurt the quality of the meat, but they can cause illness in humans. Because freezing kills parasites, most finfish needs to be frozen prior to being served raw. The U.S. Food and Drug Administration (FDA) requires that fish be frozen at -4° F for 7 days or at -35°F for 15 hours in order to insure parasite destruction. The only raw fish, which does not need to be frozen, are those species in which

parasites are not a natural hazard<sup>1</sup>. The establishment can freeze the fish on the premises but must document that proper freezing temperatures and times were achieved. The time and temperature records must be kept for 90 days. Alternatively, establishments can purchase fish which has already been frozen if they first obtain a letter from the supplier stating that the fish was frozen according to the required time and temperature specifications.

### ***Consumer advisory***

Freezing does not destroy bacterial or viral pathogens. Therefore, when sushi containing raw fish is served or sold, the consumer should be advised of the increased risk of foodborne illness as required in section 3-603.11 of the 1999 Federal Food Code.

### ***Cross-contamination***

Care must be taken to avoid cross-contamination between raw and cooked ingredients that are being prepared. Each ingredient should be kept in separate containers and held at proper temperatures. There should be separate set-ups for raw and cooked products if possible. A set-up consists of a bamboo mat, a knife and a cutting board. If separate set-ups are not possible, then the utensils should be cleaned and sanitized between preparation of sushi containing raw fish ingredients and sushi containing other ingredients.

The bamboo mats are hard to clean and sanitize. Therefore the mats should be wrapped in plastic and rewrapped in new plastic wrap at least every four hours or after use on raw fish.

### ***Bare-hand contact***

Preparing sushi requires good hand dexterity and has traditionally involved a lot of bare hand contact. Bare hand contact with the ready-to-eat ingredients should be avoided. Nitrile gloves (non-latex) can be used without sacrificing the “feel” and dexterity needed. If sushi chefs wish to use their bare hands, they must first develop a written plan in accordance with the Department’s policy on Alternative to Bare-hand Contact with Ready-to-eat Foods.

Sushi has become increasingly popular in Massachusetts. Done correctly, the risks can be minimized and the safety of sushi can be assured.

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<sup>1</sup> See the exceptions in section 3-402.11(B) of the food code. For a complete list of fish in which parasites are not a hazard see the FDA’s Fish and Fisheries Products Hazards & Control Guide. The guide can be found on line at <http://vm.cfsan.fda.gov/~dms/haccp-2.html>.