**HACCP Guidance Information for Acidified Rice**

(This guidance is adapted from guidelines provided by the Massachusetts Department of Public Health and the Food and Drug Administration)

**Background:**

A HACCP plan is required for the use of acidified rice without temperature control. Acidified rice is typically held at room temperature for 6-8 hours and then any remaining portion is discarded. Acidified rice handles best at temperatures of 70°F - 80°F, which is favorable to pathogen growth. If the acidification of rice is for the purpose of flavor enhancement only, and the product is held at refrigeration temperatures (41°F or less), then a HACCP plan is NOT required.

**Hazards:**

The primary pathogens of concern associated with cooked rice are *Bacillus cereus* and *Staphylococcus aureus* and related toxin formation, in cooked products.

**pH:**

pH is a figure expressing the acidity or alkalinity of a solution on a logarithmic scale on which 7 is neutral, lower values are more acidic, and higher values more alkaline. A change of one unit represents a change of 10 fold in acidity. A pH of 4.0 is 10 times more acidic than a pH of 5.0. Per the 2013 FDA Food Code, in order to deem heat treated unpackaged food a non-temperature control for safety food, the food must have a pH of less than 4.2. Since pH is most accurately read with a pH meter, it is strongly suggested that you read the pH of your acidified rice with a calibrated pH meter vs test strips.

**Standard Operating Procedures for pH Measurement:**

It is imperative that you know the accuracy of your pH meter (+/-.1 for example). Temperature has an effect on pH and the accuracy of pH measurement. Some pH meters automatically adjust for temperature and others require manual adjustment. There is often a specific time required for the pH meter to be held in solution for readings to stabilize prior to taking a reading. These factors must be addressed in the HACCP plan if an accurate finished pH measurement is to be obtained.

* Include manufacturer instructions and specifications for pH testing and calibration as part of the HAACP plan.
* A two point calibration including a 4.0 buffer must be utilized on the pH meter. The control buffers must not be expired.

**Other Important Points Related to Sushi Operations:**

* Per the 2013 FDA Food Code before service or sale in ready-to-eat form, raw, raw marinated, partially cooked, or marinated-partially cooked fish shall be:

- Frozen and stored at -4°F or below for a minimum of 168 hours (7 days) in a freezer.

- Frozen at -31°F or below until solid and stored at -31°F or below for a minimum of 15 hours; OR

- Frozen at -31°F or below until solid and stored at -4°F or below for a minimum of 24 hours.

* Certain exemptions apply for shellfish, various tuna species, some aqua-cultured fish and fish eggs. If you need information on these items, contact Environmental Health.
* Freezing does not destroy viral or bacterial pathogens. When serving raw fish, a consumer advisory including disclosure and reminder must be provided.
* Appropriate cooling methods must be used when temperature is used as a control. When cooked/warm rice is used to prepare a finished sushi product, a procedure must be in place to cool the finished product correctly to 41°F. Note: Sushi with rice is often moved directly to the refrigerated display. The display units generally do not have capacity to cool the product effectively.



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