Using and Calibrating pH Meters and Acidity Testing Rice

(Sample SOP)

PURPOSE: To prevent foodborne illness by ensuring that the pH meter used for measuring rice acidity is calibrated for accuracy.

SCOPE: This procedure applies to foodservice employees who prepare, cook, and cool food.

KEY WORDS: pH Meter, Calibration

1. pH meter means a device designed to measure acidity or alkalinity of a solution.
2. CALIBRATION means the act of adjusting, by comparison with a known standard, the accuracy of a measuring instrument

# INSTRUCTIONS:

**ROUTINE 2 POINT ACCURACY CHECK OF PH METER**

1. Train foodservice employees on using the procedures in this SOP.
2. Follow the manufacturer’s instructions for use and calibration of the pH meter. Use a pH meter that measures pH from 4.0 to 10.0 for detecting safe final range of pH of < 4.2 for acidified rice.
3. Have pH meter easily accessible to all employees during all operational hours.
4. Clean and sanitize the pH meter using an alcohol swab and distilled water prior to each use.
5. Follow manufacturer’s instructions for turning on pH meter and allowing to warm up prior to use.
6. A two point calibration check using a 4.0 buffer and 7.0 or 10.0 buffer must be utilized.
7. Accuracy check:

● Rinse probe with distilled water.

● Add 4.0 buffer solution to clean calibration container.

● Dip electrode into the test solution until reading is stable.

● Rinse electrode with distilled water and repeat process for next buffer using clean calibration container.

● Record calibration check on Calibration Log Sheet.

1. Store pH meter in an area that is clean and where they are not subject to contamination according to manufacturer’s instructions.

**MEASURING AND RECORDING PH OF SUSHI RICE**

1. Food service employees will conduct the pH test of the acidified rice within 30 minutes of acidification.
2. A rice slurry will be made by gathering a ¼ cup sample of the cooked, acidified rice taken from various locations in the batch and adding ¾ cup of distilled water to a blend cup. Blend the slurry for approximately 20 seconds either by using a mixing/mashing motion or a blender.
3. Insert the calibrated pH probe into the liquid slurry to obtain a pH reading. Record the reading on the Sushi Rice pH Log sheet.
4. If pH is not less than 4.2, add additional vinegar, re-test and note the corrective action on the log.

**ROUTINE CALIBRATION OF PH METER**

1. Train foodservice employees on routine calibration of pH meter.
2. Calibration should be done regularly and recommended to be done daily if the meter is used often.
3. INSERT MANUFACTURERS INSTRUCTIONS HERE FOR PH METER CALIBRATION.

# MONITORING:

* 1. Foodservice employees will use both the routine 2 point accuracy check of pH meters and routinely calibrate the pH meter. Values will be recorded on the pH Calibration Log Sheets.

2. Foodservice employees will check the accuracy of pH meters:

* At regular intervals (daily/prior to making each batch of sushi rice)
* If dropped
* Whenever accuracy is in question

# CORRECTIVE ACTION:

1. Retrain any foodservice employee found not following the procedures in this SOP.

* 1. For an inaccurate digital pH meter, adjust the meter according the manufacturer’s instructions.
  2. If an inaccurate pH meter cannot be adjusted on-site, discontinue using it and follow manufacturer’s instructions for having the pH meter calibrated.
  3. Retrain employees who are using or calibrating pH meters improperly.

# VERIFICATION AND RECORD KEEPING:

Foodservice employees will record the two point accuracy check, the rice acidity check and the routine calibration of the pH meter on either the Calibration Log Sheet or the Sushi Rice pH Log (if applicable). The foodservice manager will verify that foodservice employees are using and calibrating pH meters properly by making visual observations of the employees during the calibration process and all operating hours. The foodservice manager will review and initial the Calibration Log Sheets. The Calibration Logs will be kept on file a minimum of 1 year.

**DATE IMPLEMENTED: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ BY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DATE REVIEWED: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ BY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DATE REVISED: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ BY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**