

**Proposal Subject:** Research Need for Suitable Time-Temperature Monitoring Devices for Shipping Times Greater than Four Hours

**Specific NSSP Guide Reference:** Section II. Model Ordinance  
Chapter IX. Transportation .05 Shipping Times

**Text of Proposal/ Requested Action** The Pacific Rim Shellfish Sanitation Conference requests that the ISSC create an educational committee with the purpose of establishing criteria, plus research and review of suitable time-temperature monitoring devices to adequately monitor the temperature of shellstock during shipping. The educational committee will also post and maintain a clearinghouse showing potential time-temperature monitoring devices on the ISSC organization website so as to support dealers who ship shellfish.

B. Shipping Time is Greater Than Four Hours.

- (1) When the shipping ...
  - (a) Mechanically refrigerated conveyances ...
  - (b) Containers with an ...
- (2) Unless the dealer has an approved HACCP plan with an alternate means of monitoring time-temperature, the initial dealer shall assure that a suitable time temperature recording device accompanies each shipment of shellfish.
- (3) The initial dealer shall note the date and time on the temperature-indicating device, if appropriate.
- (4) Each receiving dealer shall write the date and time on the temperature-indicating device, if appropriate, when the shipment is received and the doors of the conveyance or the containers are opened.
- (5) The final receiving dealer shall keep the time-temperature recording chart or other record of time and temperature in his files and shall make it available to the Authority upon request.
- (6) An inoperative temperature-indicating device shall be considered as no recording device.

**Public Health Significance:** Shellfish dealers are required by the NSSP to ensure that shellfish is shipped under proper temperature control to prevent possible pathogen growth. Natural marine pathogens such as *Vibrio vulnificus* and *Vibrio parahaemolyticus* show substantial growth when temperature increases. Pathogen growth has a logarithmic relationship to temperature; therefore, maintaining proper temperature control during shipping can lessen or restrict the growth of these pathogens.

Dealers have requested guidance on what time-temperature devices and technologies are available and suitable for industry use. With ever-changing technologies, a central educational clearinghouse would best serve the conference and its members.

**Cost Information (if available):** None – research request

**Proposed Specific Research Need/Problem to be Addressed:**

Research into appropriate time-temperature monitoring devices in order to monitor the temperature of shellstock during shipping. The current problem to be addressed focuses on whether or not shellstock is being kept at proper and controlled temperatures during shipping in order to suppress or restrict the growth of pathogens such as *Vibrio vulnificus* and *Vibrio parahaemolyticus*. These time-temperature devices could serve to inform the

receiver if the product before them is safe for human consumption and the grower on whether or not their product is being shipped as agreed.

**How will addressing this research support/improve the mission/role of the ISSC/NSSP/Industry? Support need with literature citations as appropriate.**

This research support will improve the mission of the ISSC/NSSP/Industry by increasing the monitoring of shellstock once it leaves the growing area. Time to Temperature controls have been instituted and measured in the growing areas and people are still getting sick. The industry and regulators in the Pacific Rim are asking the questions: how can we measure whether or not the shellstock temperatures are being maintained during shipping? How can we collect this data to help narrow down where the pathogen growth may be occurring? By narrowing in on possible avenues for growth and collecting sound data to support the possibility, public health will be better served.

**Relative Priority Rank in Terms of Resolving Research Need:**

- Immediate**
- Valuable**
- Important**
- Required**
- Other**

**Estimated Cost:**

**Proposed Sources of Funding/Support:**

**Time Frame Anticipated:**

- Action by 2009 Task Force II** Recommended adoption of Proposal 09-214 as submitted.
- Action by 2009 General Assembly** Adopted recommendation of 2009 Task Force II on Proposal 09-214.
- Action by USFDA 02/16/2010** Concurred with Conference action on Proposal 09-214.
- Action by 2011 Time Temperature Technology Committee** Recommended that the Executive Board appoint a committee to design a survey, develop criteria for evaluating devices, continue discussions, and develop information to post on the ISSC website pertaining to available technologies.
- Action by 2011 Task Force II** Recommended adoption of the Time Temperature Technology Committee recommendation on Proposal 09-214.
- Action by 2011 General Assembly** Adopted recommendation of 2011 Task Force II on Proposal 09-214.
- Action by FDA February 26, 2012** Concurred with Conference action on Proposal 09-214.