



STATE OF CONNECTICUT

DEPARTMENT OF AGRICULTURE
BUREAU OF AQUACULTURE & LABORATORY



Darien, Norwalk and Westport
2015 Vibrio parahaemolyticus Control Plan for Oyster Harvest
Effective June 1 through September 30
May 15, 2015 (revised 05/26/15)

State of Connecticut Department of Agriculture Bureau of Aquaculture (DA/BA)
Commercial shipping restrictions for oysters harvested from the waters of Darien, Norwalk, and Westport:

Company Name: _____ SS# _____
Signature: _____ Date: _____

A. SSI (Harvester/Dealer):

- 1. This plan applies to all oysters harvested for human consumption. No provision of this plan shall apply to seed oysters.
2. The requirements of this plan shall apply to all oysters harvested from the waters of Darien, Norwalk and Westport in Connecticut's coastal waters from June 1 through September 30, 2015, inclusive.
3. Rapid cooling of oysters shall be triggered when surface water temperatures in the Darien, Norwalk, Westport growing area reach 20°C/68°F as measured using the NASA G1SST Sea Surface Temperature Regional Ocean Modeling Product and the nearest NOAA water temperature buoy BRHC3 in Bridgeport.
4. The DA/BA will notify each Connecticut shellstock shipper licensed to harvest oysters in the Darien, Norwalk, Westport area when surface temperatures are approaching 20°C/68°F, and will inform harvesters of the required start date for rapid cooling controls.
5. All oysters harvested from June 1 through September 30, 2015 shall be adequately shaded* from direct sunlight while onboard the vessel and during transport from harvest area to original dealer.
6. All oysters harvested between June 1 and September 30, when surface water temperatures are greater than or equal to 20°C/68°F from the waters of Darien, Norwalk or Westport shall be immediately placed into an on-vessel ice slurry for rapid cooling to 50°F internal temperature.
7. Any approved method of rapid cooling shall be capable of reducing internal temperatures of oysters to <50°F within 1 hour (or other timeframe based upon consultation and Approval by DA/BA).

8. *A DA/BA Approved rapid cooling method* will allow harvesters to continue working within a twelve-hour time limit from harvest to refrigeration.
9. Ice shall be made from either a potable or Approved or Conditionally Approved growing area water source and properly protected from contamination prior to use. If growing area water is used for ice production, the area must be in the open status.
10. In order to avoid contamination of oysters by bacteria associated with sediments, shellstock shall be washed free from mud, sediment and other material using water from the open harvest area prior to dipping in the slurry.
11. While using the ice slurry (*or other DA/BA Approved method*) to achieve rapid cooling, adequacy of ice shall be monitored to ensure proper cooling temperatures are maintained.
12. While using the ice slurry to achieve rapid cooling, water clarity shall be monitored to ensure against impairment from sediment and particulate buildup due to extended use. *NOTE: Good judgment needs to be exercised when evaluating the slurry water for excess turbidity. If you are in doubt, change the water.*
13. Adequate ice or mechanical refrigeration must be available throughout the harvest period to maintain the internal temperature of rapidly cooled oysters held aboard the vessel at 50°F or less.
14. Once placed under temperature control and until sale to the processor or final consumer, shellstock shallⁱⁱⁱ:
 - (a) Be iced; or
 - (b) Be placed in a storage area or conveyance maintained at 45° F (7.2° C) or less; and
15. Each harvester will maintain a harvest log book that records the date, time of harvest, time to dock, amount harvested (count, bags, etc) and time sold or time refrigerated recorded in indelible ink. Harvest time will be filled out before the vessel leaves the harvest area.
16. Each harvester will maintain a Rapid Cooling Log that records the internal temperature of oysters that have been rapidly cooled on an hourly basis, unless an *approved Time-Temperature Validation Study** has been completed by the dealer and is on file with the DA/BA.
17. Shellstock invoices/documentation shall include the time of harvest* in addition to harvest date, harvest area (lot and Town), type of shellstock and quantity, as well as applicable *VPCP Time to Temperature Control Statement**.
18. Pursuant to *CGS Sec. 26-192c. Inspection and regulations concerning shellfish* any license may be suspended pending revocation proceedings, or amended, if shellfishing operations or harvesting areas are a public health hazard or if the licensee has violated any provision of this section, section 26-192e, 26-192f, or 26-192h or any applicable department regulation or any section of the public health code.
19. The State Shellfish Authority (DA/BA) must approve each vessel's ice slurry or *rapid cooling system* on an annual basis prior to implementation or prior to a change in the rapid cooling process during the VPCP control months.

B. Corrective Action:

1. Dealers shall reject any lots of oysters that are not properly tagged and invoiced as required by this Plan.

2. Dealer shall reject any lots of oysters that have not been received within the harvest time frames required by the Plan.
3. Dealers who receive shipments of oysters that are not compliant with the requirements of Section A of this Plan shall place the shellstock on internal hold and immediately notify the Department of Agriculture Bureau of Aquaculture (DABA). Dealers shall then document the deviation as a Corrective Action and await instruction from the DABA for final disposition of potentially time/temperature abused oysters.

C. Enforcement:

1. Representatives of state regulatory agencies (DABA, etc.) shall conduct periodic unannounced inspections at harvest sites, common landings, and wholesale dealer facilities to determine compliance with the requirements of this Plan.
2. All shellfish harvested under this plan shall be subject to embargo, disposal, or return to growing area under supervision if found to be significantly time/temperature abused or non-compliant with requirements of this Plan.
3. Inability or refusal of harvesters and/or dealers to maintain compliance with the requirements of this plan may result in enforcement up to and including suspension and revocation of harvester and/or dealer license in accordance with *CGS Sec. 26-192c*.

*Definitions:

Adequately Iced means the containers holding the shellfish have enough ice on the shellfish that is sufficient to ensure that immediate cooling begins and continues to provide cooling until required internal temperatures are achieved within 5 hours of being placed under temperature control OR to maintain the temperature of previously cooled shellfish at $\leq 50^{\circ}\text{F}$, e.g. post ice slurry.

Adequately Shaded means that measures shall be taken to prevent oysters from direct exposure to sunlight that might cause a significant increase in pathogenic growth due to an increase in temperature.

Ice Slurry means a mixture of ice and water containing the volume of ice necessary to maintain a temperature in the slurry that is sufficient to ensure that the rapid cooling process begins immediately upon submergence of the shellstock and that the process is capable of reducing the internal temperature of the shellstock to 50°F within 30 minutes.

Internal Temperature means the internal temperature of the meat of the animal as measured using a calibrated probe thermometer; under most circumstances when measuring the temperature of previously cooled product, the internal temperature of shellstock is reflected by the external temperature of the space surrounding the shellfish, or the external temperature of the shell at the center of a packaged mass of shellstock (box, bag, etc) and may be measured by inserting a thermometer probe into the package to an appropriate depth.

NOTE: When establishing a rapid cooling procedure, the shellstock must be opened and the actual internal temperature of the meat measured using a calibrated probe thermometer, as there may be a significant difference between the amount of time it takes to cool the shell of the animal compared to the meat. An approved rapid cooling procedure must be verified using the internal temperature of the meat as measured.

Rapid Cooling is defined as the reduction of the internal temperature of shellstock to 50°F within 1 hour of harvest or time of first exposure.

Time-Temperature Validation Study is a process by which scientifically valid experimental data or harvest to shipping validation studies (collecting and analyzing one's own process data under controlled conditions) are used to

demonstrate the adequacy of control measures (as per Time-Temperature Validation Study Design Guidance for Connecticut Licensed Shellstock Shippers 05/26/15 Update^{iv}).

Temperature Control is defined as mechanical refrigeration or other conveyance pre-chilled and maintained at 45°F or below and capable of reducing the internal temperature of product to 50°F within 5 hours.

Time of Harvest means the time when the first shellstock is removed from the water or, in the case of intertidal harvest, the time of first exposure.

Time-Temperature Validation Study is a process by which scientifically valid experimental data or harvest to shipping validation studies (collecting and analyzing one's own process data under controlled conditions) are used to demonstrate the adequacy of control measures (as per Time-Temperature Validation Study Design Guidance for Connecticut Licensed Shellstock Shippers 05/26/15 Update^v).

VPCP Time to Temperature Control Statement is a statement that accompanies a shellstock shipment that indicates the time interval at which shellstock was placed under temperature control and cooled to an internal temperature meeting applicable VPCP control plan requirements.

The CT Department of Agriculture Bureau of Aquaculture will review this Plan on an annual basis and revise it as needed to maintain compliance with the National Shellfish Sanitation Program's Model Ordinance.

Shipping Document Example:

Company Name and Contact Information and Shipper #

Harvest Date and Harvest Start Time:

Harvest Location: Lot & Town

Applicable *VPCP Time to Temperature Control Statement*:

"All product cooled to 50F via _____ (ice slurry/mechanical refrigeration) within _____ hours of harvest"

OR

"All product placed under temperature control within _____ hours of harvest and cooled to 50F within _____ hours using ice/mechanical refrigeration

_____ Temperature to which the conveyance was pre-chilled if mechanical refrigeration was the means of cooling

ⁱ Chao, Y., Z. Li, J. D. Farrara, and P. Huang: Blended sea surface temperatures from multiple satellites and in-situ observations for coastal oceans. *Journal of Atmospheric and Oceanic Technology*, 26 (7), 1435-1446, 10.1175/2009JTECHO592.1, 2009.

ⁱⁱ NOAA Station BRHC3 - 8467150 - Bridgeport, CT Buoy Station Page: http://www.ndbc.noaa.gov/station_page.php?station=brhc3

NOAA BRHC3 Climatic Summary Plot: http://www.ndbc.noaa.gov/view_climplot.php?station=brhc3&meas=st

ⁱⁱⁱ [ISSC] Interstate Shellfish Sanitation Conference. 2011. National Shellfish Sanitation Program: Guide for the Control of Molluscan Shellfish, 2011 Revision. US Department of Health and Human Services Public Health Service Food and Drug Administration.

^{iv} Connecticut Department of Agriculture Bureau of Aquaculture. 2015. *Time-Temperature Validation Study Design Guidance for Connecticut Licensed Shellstock Shippers, 05/26/15 Update.*

^v Connecticut Department of Agriculture Bureau of Aquaculture. 2015. *Time-Temperature Validation Study Design Guidance for Connecticut Licensed Shellstock Shippers, 05/26/15 Update.*