



CONNECTICUT DEPARTMENT OF AGRICULTURE

PO Box 97, 190 Rogers Avenue, Milford, CT 06460
Bureau of Aquaculture



**DARIEN, NORWALK AND WESTPORT
2023 VIBRIO PARAHAEMOLYTICUS CONTROL PLAN FOR OYSTER HARVEST
EFFECTIVE JUNE 1 THROUGH SEPTEMBER 30
JUNE 1, 2023**

**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.1. 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 Dealer shall maintain this plan with their HACCP plan.**
3. 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, 2023, inclusive.
4. 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 in the growing area by Bureau staff. The average date associated with a surface water temperature of 20°C/68°F in Darien, Norwalk, Westport growing areas is June 15th. Historically, surface water temperatures have reached 20° C/68°F as early as June 1 at these stations.
5. 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.
6. All oysters harvested from June 1 through September 30, 2023 shall be adequately shaded* from direct sunlight while onboard the vessel and during transport from harvest area to original dealer. *(Aquaculture producers may request an exemption from the shading requirement from DA/BA when submitting their signed CT VP Control Plan prior to the start of Vibrio season. Unless an exemption is granted by DA/BA, adequate shading remains a requirement of all producers.)* *See Definitions Section
7. 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 (*or method Approved by the DA/BA*) for rapid cooling to 50°F internal temperature.

8. 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*).
9. **Between July 1st and August 31st inclusive, rapid cooling may be extended to three hours to reduce oyster mortality associated with cold shock when water temperatures are highest.**
10. A *DA/BA Approved rapid cooling method* will allow harvesters to continue working within a twelve-hour time limit from harvest to refrigeration.
11. 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.
12. 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.
13. 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.
14. 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.*
15. 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.
16. 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.
17. 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 recorded in log before the vessel leaves the harvest area.
18. Each harvester will maintain a Rapid Cooling Log that records the internal temperature of oysters that have been rapidly cooled on an hourly basis.

Please note that each observation of internal temperature must include:

- Actual temperature observation (i.e. 47°F NOT <50°F)
- Actual time that the temperature was recorded (i.e. 2:15 pm NOT <5 hours);
- Initial of person performing the observation.

19. 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 Shipping Document* including *VPCP Time to Temperature Control Statement**.
20. 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.
21. 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.

A.2. Re-submergence* and Off-site Culling*

- Oyster Handling, Off-site Culling, and Re-submergence:
 - Market-sized oysters removed from the waters of a growing area for any oyster culture activities (e.g. culling, sorting, anti-fouling, etc.) for a period of more than five (5) hours will be considered **offsite culled*** and must be returned to the same license site and re-submerged for a minimum of ten (10) days prior to harvest.
 - Oyster culture activities of market-sized oysters conducted on barges, boats, or other floating structures within the same designated shellfish growing area that do not exceed the five (5) hour requirement for adequate icing or temperature control will not be considered off-site culled. These oysters may be harvested in accordance with this Plan or returned to the original license site and harvested the following calendar day.
 - Oyster culture activities of market-sized oysters conducted on barges, boats, or other floating structures that exceed five (5) hours from the time of harvest or exposure shall be considered off-site culled and are subject to ten (10) day re-submergence.
 - All containers of re-submerged oysters or areas used for broadcast re-submergence must be segregated on the original license site. If containerized, tags must identify the oysters as "re-submerged" and must include the date the oysters were re-submerged.
 - Tags must be waterproof, legible and completed with indelible ink.
 - After ten (10) days the tags may be removed and discarded.
 - Producers who engage in broadcast re-submergence or batch tagging for re-submerged oysters must submit a re-submergence plan to DMF for approval 30 days prior to the start of the activity. Re-submergence plans must, at a minimum, include:
 - A description of the re-submergence method (broadcast on bottom, cages, etc.);
 - A description of segregation method; and
 - A description of tagging method.
 - All producers engaging in re-submergence must record all re-submergence activities in their Relay or HACCP logbook, which must include at a minimum the information outlined below:
 - The producer shall record:
 - the date shellfish are returned to the growing area for re-submergence,
 - the earliest date oysters may be removed from re-submergence,
 - the harvest area,
 - quantity of oysters resubmerged,
 - the type and number of containers, and
 - the category of re-submergence (antifouling, off-site culling, recall, etc.).

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 regulatory agencies (DA/BA, Food and Drug Administration (FDA, Department of Environmental Protection (DEEP), 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. Any new cooling process or any process that has changed since the previous season (such as a new cooler, different equipment, change in volume of shellfish harvested, etc.) must be evaluated by DA/BA prior to the start of the VPCP season.
3. Cooling processes that have been previously evaluated and validated by DA/BA must be re-evaluated within 30 days of the start of the VPCP season.
4. Cooling processes may also be evaluated by DA/BA under worst case conditions during the course of the VPCP season.
5. 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.
6. Refusal of harvesters and/or dealers to allow inspection or inability 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*.

D. Critical Control Point: Harvest Shellstock (Oysters) – *Vibrio Control Months*.

| | |
|----------------------|--|
| Firm Name: | Finished Product Description: |
| Firm Address: | Method of Storage 7 Distribution: |
| | Intended Use: |

| | | |
|-------------------------------|-------------|---|
| Critical Control Point | | Rapid cooling (3 hours to 50F) |
| Significant hazard | | Pathogen Growth |
| Critical Limits | | Harvested shellstock must be cooled to 50F internal temperature within 3 hours from the time of first harvest using an on-vessel rapid cooling method Approved by DA/BA. |
| Monitoring | What | Time since start of harvest to internal temperature of 50F |
| | How | Clock, internal temperature of oysters |
| | When | Until internal temperature of 50F |
| | Who | Designee |
| Corrective Action | | If product is not rapidly cooled to 50F internal temperature within specified for Vp control months, then notify DA/BA to determine corrective action, shellfish may be re-planted as directed. Fix work day harvest schedule or dealer pick-up arrangements to avoid delay in future. |
| | | If product is landed and sold after specified time frame for refrigeration for Vp control months, then initiate product recall, notify DA/BA to determine corrective action, shellfish may be re-planted as directed. Fix work day harvest schedule or dealer pick-up arrangements. |
| Verifications | | Weekly record review by HACCP trained person; update critical limit for Vp control months in HACCP plan annually upon receipt of State VPCP; Check harvester license/dealer's listing in Shellstock Shippers List. |
| Records | | Logbook - harvest records showing time of first harvest, harvest date, time sold and/or time in to refrigeration, internal temperatures; corrective action records, verification records; note start of harvest time, time into refrigeration on original dealer's invoice/bill of landing; Annual State VPCP |

*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 verifying 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.

Shipping Documentation is defined as the documentation required by the NSSP Model Ordinance to accompany all shipments of shellstock that indicates (1) time of shipment; (2) that conveyance was pre-chilled; and (3) notice of any shellstock that was shipped prior to meeting required internal temperature and notice of a time/temperature recording device indicating that continuing cooling has occurred. In order to comply with the requirements of this VPCP, the **VPCP Time to Temperature Control Statement** must also be included with the shipping documentation.

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.

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.

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.