

A large tray filled with shellfish, including clams and crabs, with a wire basket in the background.

Shellstock Shipper Owner/Operator Seminar

Connecticut Department of Agriculture,
Bureau of Aquaculture

And

Connecticut Sea Grant

March 20, 2012

Please tell us...

Why are we HERE?

ISSC 2011 Summary of Actions

Proposal No. 09-212 Requirements for Dealers and Harvesters

Summary of Change: A Dealer (or a minimum of one person per shellfish operation) must complete required training prior to licensing and every two years after that. Each dealer must maintain record of completed training.

Summary of Change: A Harvester (or a minimum of one person per shellfish operation) must complete required training prior to licensing and every two years after that. Each harvester must maintain record of completed training.

Proposal No. 09-212 Requirements for Harvesters. 01 General.

Summary of Change: A harvester (or a minimum of one person per shellfish operation) must complete required training prior to licensing and every two years after that. Each harvester must maintain record of completed training.

1. Each harvester shall have a valid license, and a special license if necessary, in his possession while engaged in shellstock harvesting activities.

2. Prior to licensing each harvester shall obtain Authority approved training every two years. The training shall include required harvest, handling, and transportation practices as determined by the authority. A harvester shall be allowed ninety (90) days following initial licensing to obtain the required education.

3. Persons who are working in a boat crew under the supervision of a licensed harvester need not have a valid harvester's license.

2a. A harvester shall obtain proof of completion of the required training. Proof of training obtained by harvester within the past two years shall be presented to the Authority prior to certification, recertification, or licensing.

2b. At a minimum, one individual involved in the shellfish operations shall obtain the required training.

2c. The Harvester shall maintain record of the completed training.

4. In the case of riparian or leased land, unless the riparian owner or lessee employs a licensed harvester, the riparian owner or lessee shall be licensed as a harvester prior to harvesting his shellstock.

A licensed riparian owner or lessee may employ unlicensed harvesters to work his property or lease.

Proposal No. 09-212

Requirements for Dealers

.04 Certification Requirements

Summary of Change: A Dealer (or a minimum of one person per shellfish operation) must complete required training prior to licensing and every two years after that. Each dealer must maintain record of completed training.

1. No person shall act as a dealer prior to obtaining certification.

2. Any person who wants to be a dealer shall:

a. Make application to the Authority for certification;

b. Have and implement a HACCP Plan, and have a program of sanitation monitoring and record keeping in compliance with 21 CFR 123 as it appears in the Federal Register of December 18, 1995, except for the requirement for harvester identification on a dealer's tag.

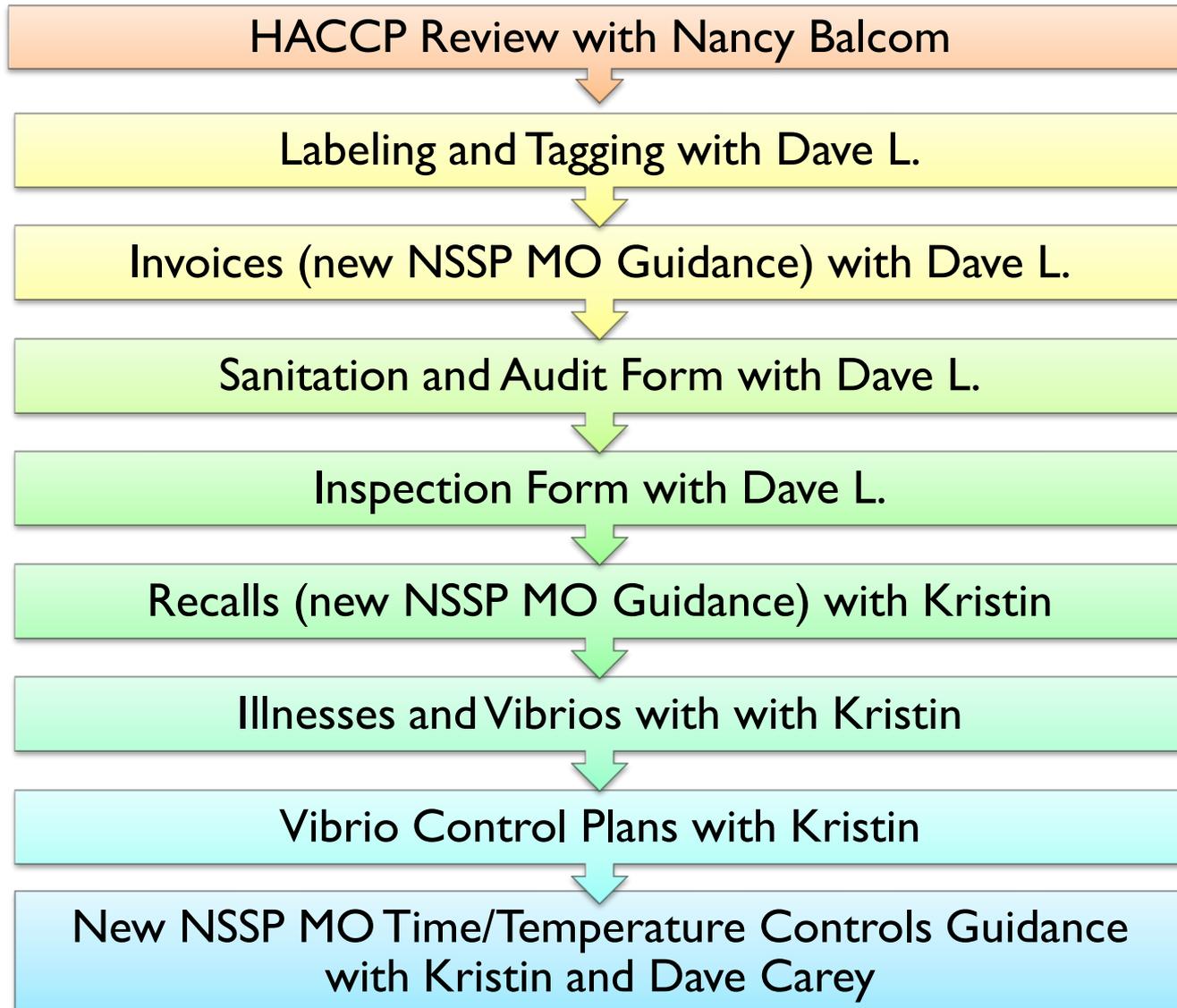
3. Obtain Authority Approved training every two years. The training shall include required processing, handling, and transportation practices as determined by the Authority. A dealer shall be allowed ninety (90) days following initial licensing to obtain the required education

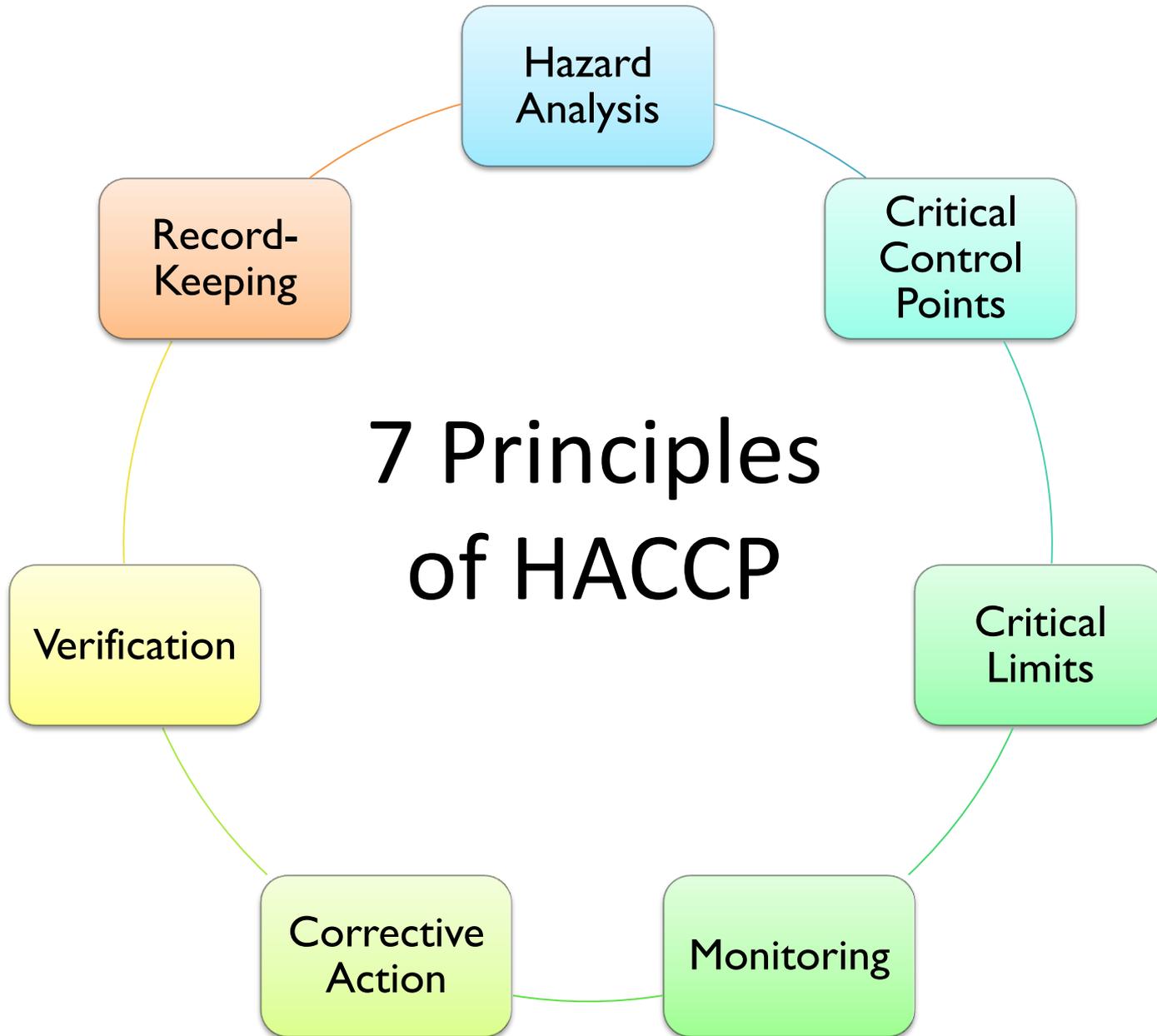
a. A dealer shall receive proof of completion of the required training. Proof of training obtained by the dealer within the past two years shall be presented to the authority prior to certification, recertification or licensing.

- At a minimum, one individual involved in the shellfish operations shall obtain the required training.
- The dealer shall maintain the record of the completed training.

b. Each dealer shall have a business address at which inspections of facilities, activities, or equipment can be conducted.

What we will be covering:





Conduct hazard analysis and identify prevention or control measures – *how can you prevent, eliminate, or minimize the potential hazard?*



Identify critical control points (CCP) – *where best to control hazard?*



Determine critical limits – *set boundaries on the control*



Monitor each critical control point – *are you within the set boundaries?*



Establish corrective action - *if monitoring or record review reveals a problem, when and how was it fixed?*



Verification of the HACCP plan – *will it control hazards sufficiently as written and are you following the plan as it is written?*



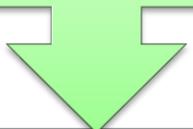
Recordkeeping for critical control points, corrective action and verification – *Proof that you are operating in manner that is producing as safe seafood product as possible (CYA)*

HACCP Program

Sanitation – provides a clean and sanitary environment in which food handling and processing can take place – focus on 8 key areas



HACCP Plan – addresses specific food safety hazards due to the species of seafood involved or the process it is undergoing



Both are equally important, but HACCP builds on sanitation

HACCP Overview

- Hazard Analysis and Critical Control Points
- Food safety management program
 - Identify food safety risks
 - Put controls in place and boundaries around the controls
 - Monitor the boundaries to ensure safety
 - Keep records, fix problems
- Two parts - Sanitation & HACCP
 - BOTH parts include the boat(s)

Food Safety Hazards

Biological

- **Pathogenic bacteria**
- **Viruses**
- **Parasites**

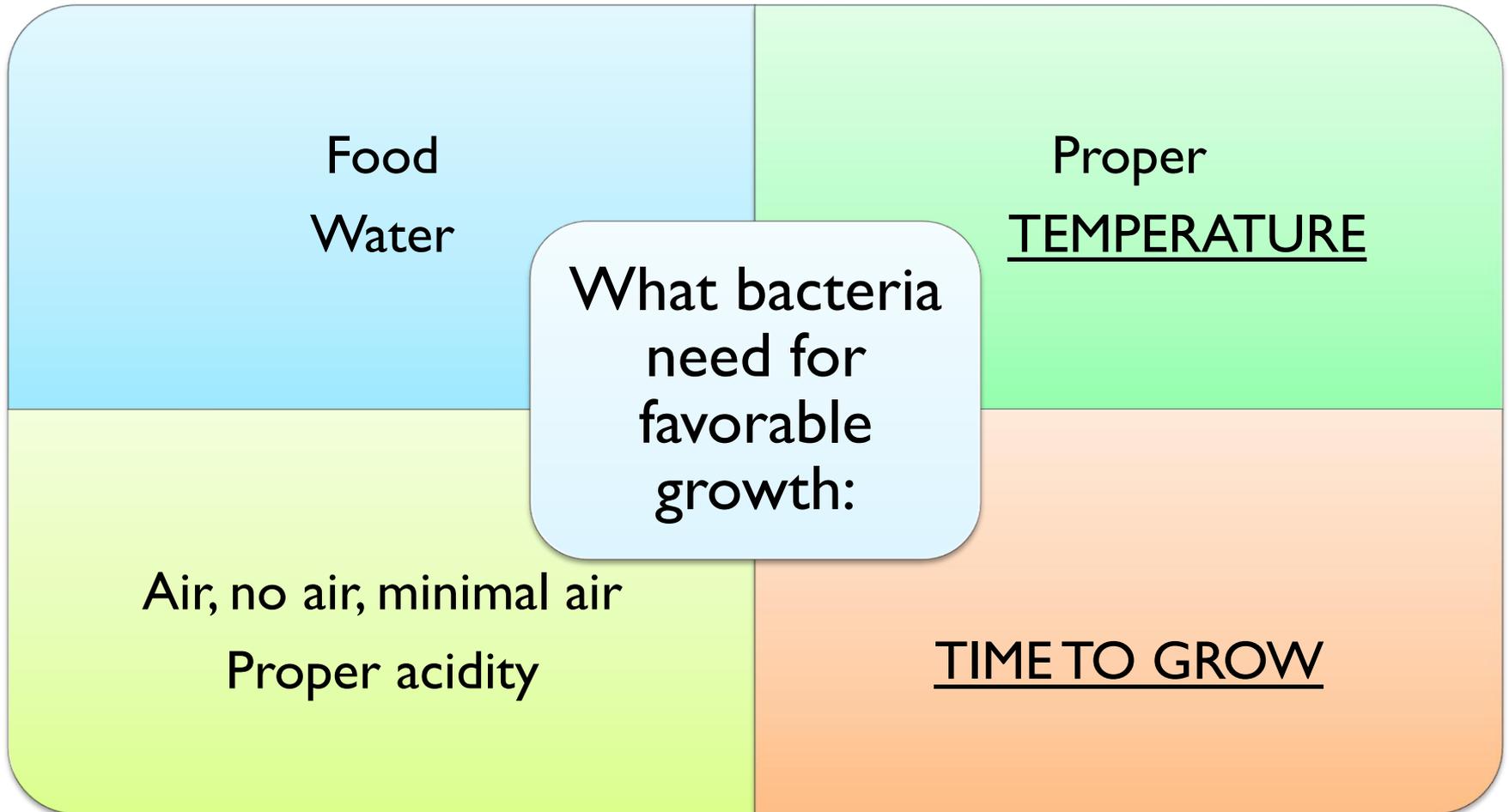
Chemical

- **Natural toxins**
- **Environmental (including boat)**

Physical

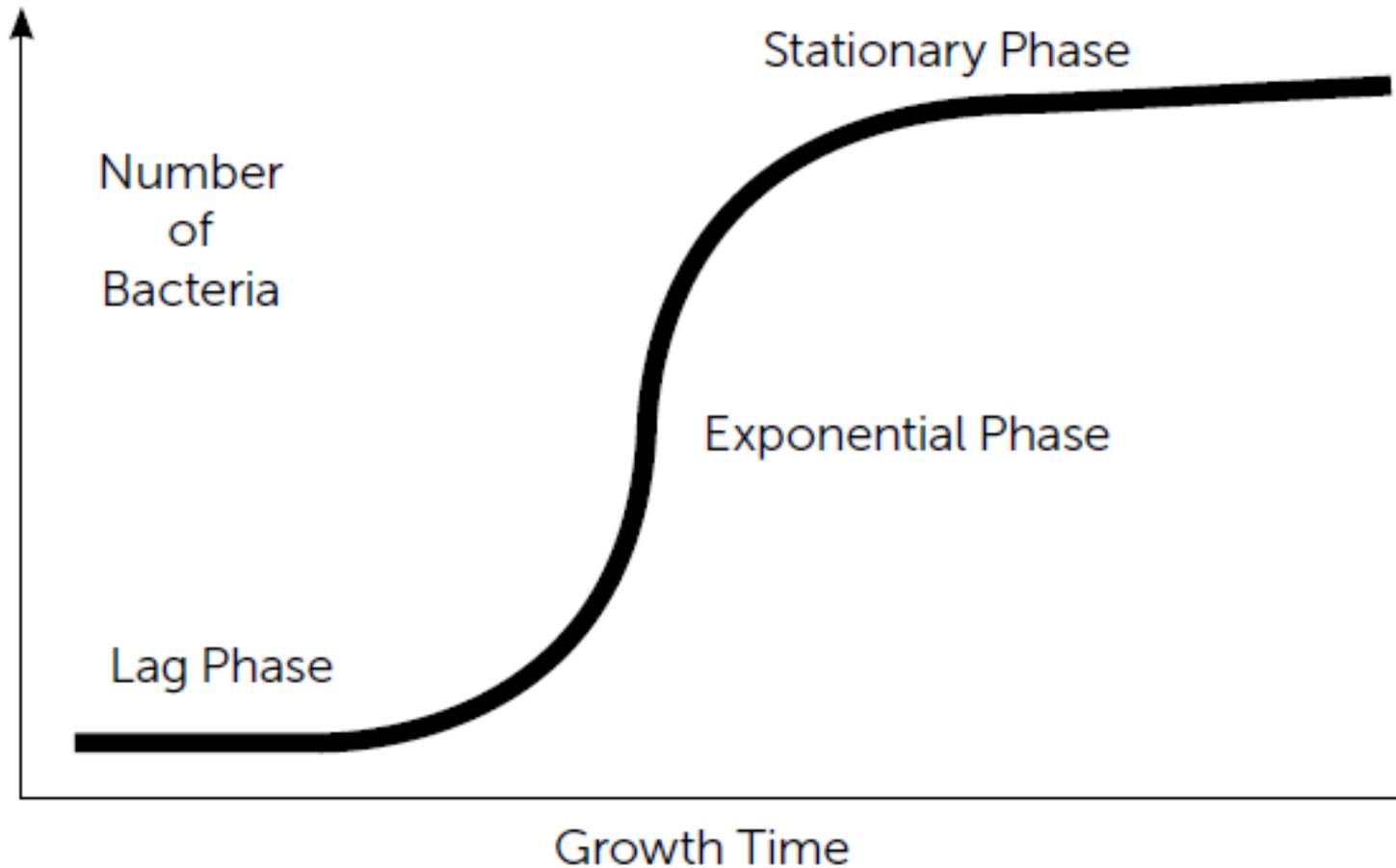
- **Metal**
- **Glass**
- **Plastic**

Biological Hazards - Bacteria

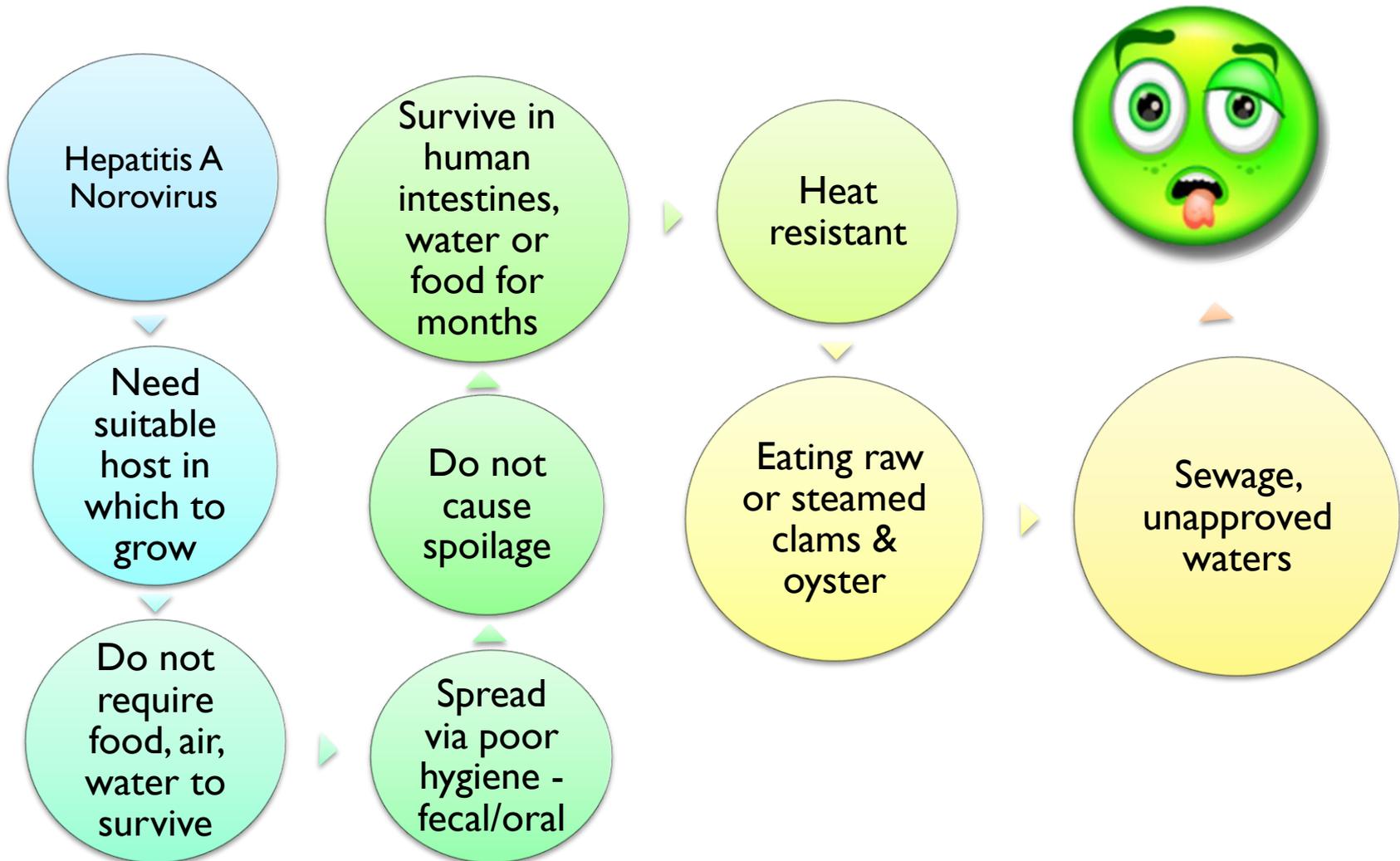


Use their “needs” to determine control strategies

Control of Pathogens



Biological Hazards - Viruses



Chemical Hazards – Natural

Marine biotoxins- toxic algae

Paralytic shellfish poisoning
(PSP)- In CT and NY

Diarrhetic shellfish poisoning
(DSP)

Neurotoxic shellfish poisoning
(NSP)

Amnesic shellfish poisoning
(ASP)/Domoic Acid

Concentrate in shellfish tissues

Heat Stable: Not inactivated by cooking

Controlled by Harvesting **ONLY** in Approved areas

Chemical Hazards - Unintentional

Cleaners &
Sanitizers used
on boat

Fuel

Oil

Lubricants

Heavy metals
Environmental
Contaminants

HACCP Before Harvest Begins:

Significant hazard is PRESENCE of bacteria, viruses, natural toxins, environmental chemicals

Critical Limit = Source of shellfish must be from approved, open waters

Check if grounds are open or closed **BEFORE** initiating each harvest

Make sure you are on the right grounds **BEFORE** initiating each harvest

Make sure harvest areas listed on license areas are staked

Make sure you have valid harvester license(s) in possession

HACCP After Harvesting Begins

Significant hazard is bacterial GROWTH

Critical Limit: Time to
Temperature Control
= 12 hrs*

Record time
first dredge
of shellstock
is out of
water on
harvest log

Time to
refrigeration
12 hours
*except July-
August –
September
(follow
voluntary Vp
control plan)

Cover
shellfish
(birds, hot
sun) – when
necessary

Shade / Cool
shellfish – Vp
plan

Time Harvest
began and
Time to
Dock
recorded on
Invoice

Corrective Action – What if you “mess up”?

If monitoring of a critical limit at a critical control point (or weekly record review) reveals that control was lost, then **MUST** take corrective action (same for sanitation)

Product must be isolated and evaluated

Problem must be fixed

Record is generated with pertinent information – date, product affected, description of problem, how fixed, disposition of the product, who fixed

Corrective Action

IF you forgot to call to check the status of a conditional area that you are working in, and it turns out that the area was closed

THEN contact HACCP trained person and/or Bureau of Aquaculture to report error. Shellfish harvested from an area that is closed must be replanted on those same grounds or recall product.

Corrective Action

IF harvest area
is not properly
staked

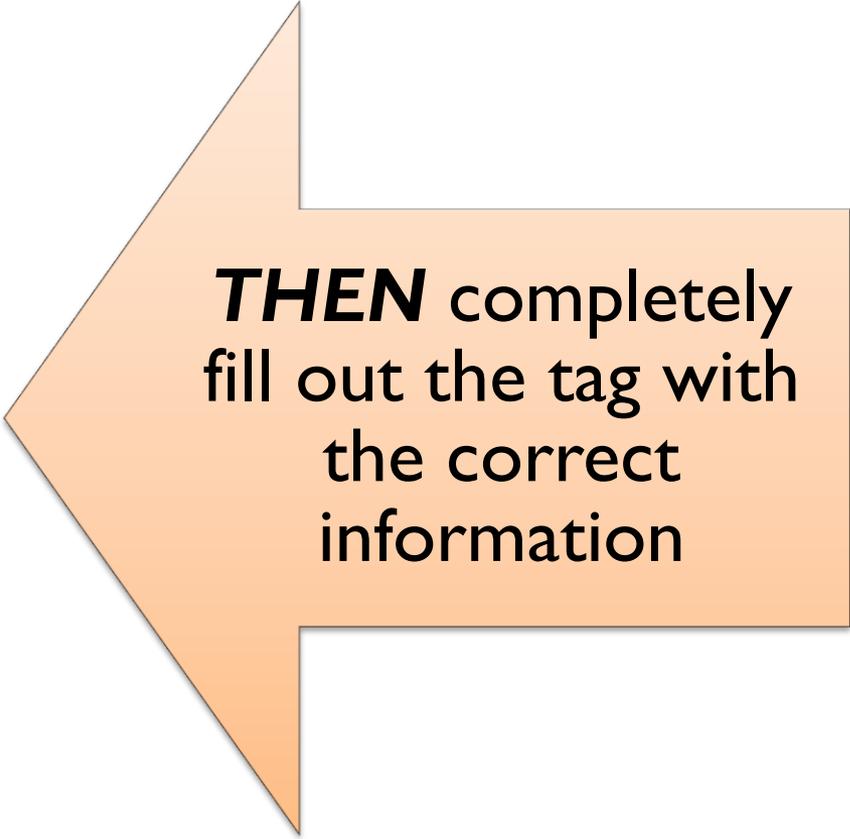
THEN re-
stake the
grounds

Corrective
action report
(where, when,
who...)

Corrective Action



IF the information
on a tag is
incomplete



THEN completely
fill out the tag with
the correct
information

Corrective Action

IF boat does not return to dock within harvest window (12 hours or per Vp control plan in July, August, September)

THEN check temperature of shellstock? Return shellstock to grounds?
Confer with DA/BA!!

Corrective Action

IF the shellstock is not sold (picked up) or refrigerated within two hours of docking

THEN check the temperature of the shellstock? Return the shellstock to the grounds? Put it in refrigeration?

Confer with DA/BA!!

Corrective Action

IF the shellstock is not tagged or the dealer you have purchased from is not on the FDA ISCCL

THEN return/reject the shipment of shellstock/shucked shellfish

Confer with DA/BA!!

NSSP-MO Requirements

Labeling and Tagging

This item refers to the information required for shipping shellstock, shucked shellfish and for identification during intermediate processing.

The purpose of the tag or label is to facilitate product traceability.

The tag or the label shall be of proper size, waterproof and contain all the information specified in the NSSP-MO.

Labels shall be legible, contain all information required by the NSSP-MO and shall comply with the Federal Food Drug & Cosmetic Act (FFDC Act), the Fair Packaging and Labeling Act (FPLA) and Title 21 of the Code of Federal Regulations (21 CFR) Parts 101 and 161.

SHELLSTOCK TAG TEMPLATE

Front of Tag

Bailey

Allen

ORIGINAL SHIPPER'S CERT. No. IF OTHER THAN ABOVE:	
HARVEST DATE:	SHIPPING DATE:
HARVEST LOCATION:	
TYPE OF SHELLFISH: OYSTERS _____ HARD CLAMS _____ SOFT CLAMS _____	
PRODUCT OF USA or CANADA WILD _____ FARM RAISED _____	
QUANTITY OF SHELLFISH:	
_____ BUSHELS _____ COUNT _____ LBS _____ OTHER _____	
THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS.	
TO:	RESHIPPER'S CERT. No.
	DATES RESHIPPED

The dealer's name , address and Certification number is to be located at the top of the tag
Also Harvest Date and Shipping Date
Harvest Location: Add CT _____

SHELLSTOCK TAG TEMPLATE

PERISHABLE KEEP REFRIGERATED

“RETAILERS, INFORM YOUR CUSTOMERS”

“Thoroughly cooking foods of animal origin such as shellfish reduces the risk of foodborne illness. Individuals with certain health conditions such as liver disease, chronic alcohol abuse, diabetes, cancer, stomach, blood or immune disorders may be at higher risk if these foods are consumed raw or undercooked. Consult your physician or public health official for further information.”

Back of Tag

Tagging/Labeling Issues

Shellstock Shippers
buying and then re-
selling product

Can retag shellstock
with own tag

Or leave original tag
on bag and stamp
Cert # in the
reshipper area on tag

Reshippers* buying
then re-selling
product

Can only stamp Cert.
in the reshipper
area on the Original
tag

NO RE-Tagging

Common Deficiencies

Incomplete, Illegible,
Incorrectly
completed tags

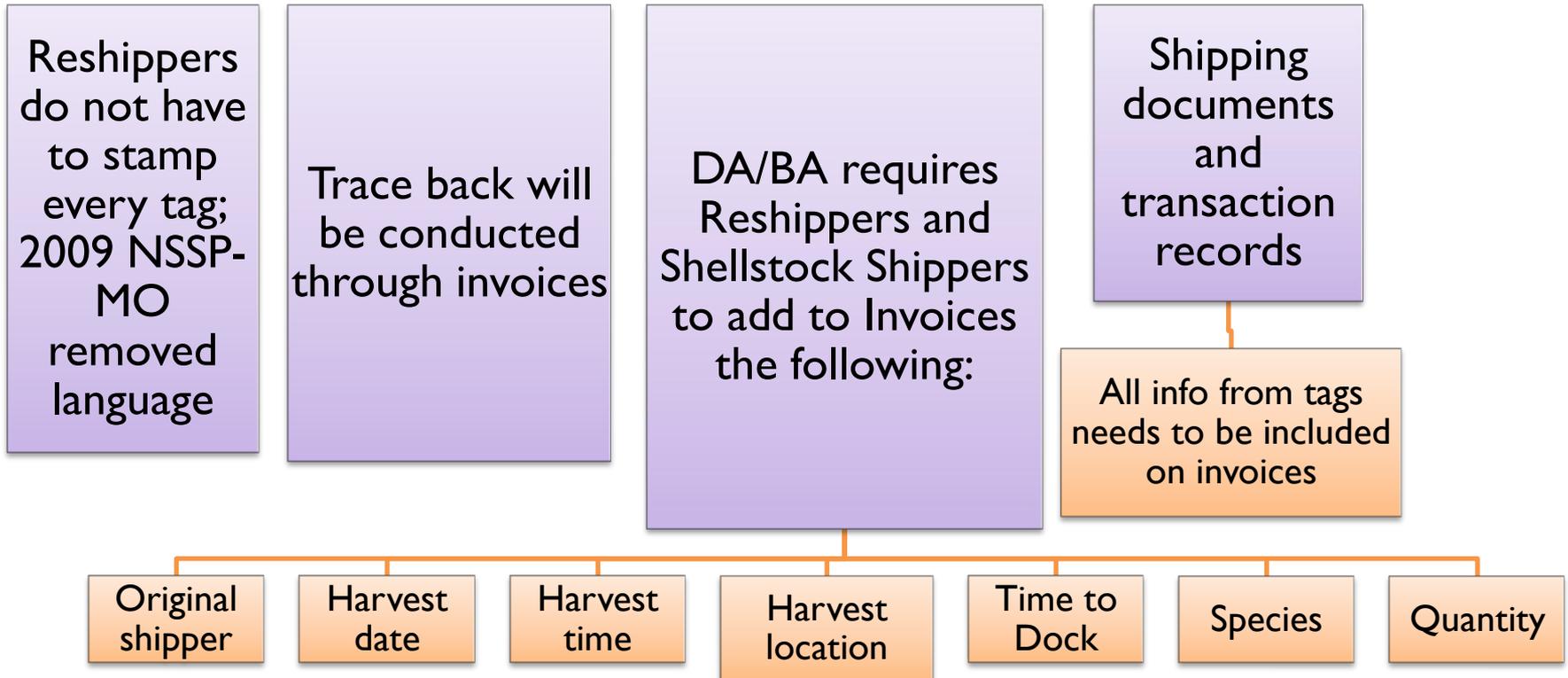
Labels which are
Illegible because of
the type of ink, lack
of durability, etc.

Original Shipper
certification
number not on tag

No date shucked
(or sell-by date) on
containers of
shucked shellfish

Incorrect Harvest
Location

NSSP-MO Changes – Invoicing



Shellfish Sanitation Operating Procedures (SSOPs)

Sanitation Audit Forms - 8 Sanitation Items

I. Safety of Water for Processing and Ice Production

Water supply
Approved tested
potable water
source (for
mixing with
sanitizing agent)

Water from
growing area in
the Approved
classification
used to wash
shellstock

Check for
backflow
prevention
(HOSE BIB
VACUUM
BREAKERS) on
all threaded
spigots.

Check plumbing
and related
facilities. Check
for prevention of
cross-
connections,
backflow and
back siphonage

2. Condition / Cleanliness of Food Contact Surfaces

Food Contact Surface-Ice shovels, Ice scoop, bins, ice machines and **shellfish contact surfaces** : smooth, easily cleanable

Cleaned, sanitized, good condition, properly stored. **Sanitize prior to start up of activities or if necessary during operation if surfaces become contaminated.**

Shellstock bags are to be stored in an manner to protect from contamination.

Sanitizer: RECORD the number concentration on each entry

**Chlorine 100-200
ppm**

**Iodine 25
ppm**

**Quaternary
Ammonia 200 ppm**

Test Kits provided and used to check solution
Make sure you have the proper test kit for your sanitizing agent

2. Condition / Cleanliness of Food Contact Surfaces (continued)

```
graph TD; A["2. Condition / Cleanliness of Food Contact Surfaces (continued)"] --> B["Cull tables, pallets for storing shellstock"]; B --> C["Ice shovels stored incorrectly, near splash zone near to floor, not stored to be protected from contamination"]; C --> D["No Sanitizer Available or Sanitizer Concentration is insufficient, too weak"]; D --> E["Dirty Ice bin or Ice Machine chute<br/>Dirty Ice shovels"];
```

Cull tables, pallets for storing shellstock

Ice shovels stored incorrectly, near splash zone near to floor, not stored to be protected from contamination

No Sanitizer Available or Sanitizer Concentration is insufficient, too weak

Dirty Ice bin or Ice Machine chute
Dirty Ice shovels

3. Prevention of Cross Contamination

```
graph TD; A[3. Prevention of Cross Contamination] --> B[Shellfish held outside not protected from contamination]; B --> C[Insufficient spatial separation from finfish, crabs, lobsters, etc.]; C --> D[Employees not washing and sanitizing their hands after returning from break or smoking];
```

Shellfish held outside not protected from contamination

Insufficient spatial separation from finfish, crabs, lobsters, etc.

Employees not washing and sanitizing their hands after returning from break or smoking

4. Maintenance of Hand Washing, Hand Sanitizing and Toilet Facilities

```
graph TD; A[4. Maintenance of Hand Washing, Hand Sanitizing and Toilet Facilities] --> B[Toilet paper, paper towels, hand sanitizer, etc... hot water that is 100°F (42.4°C)]; B --> C[Keep these facilities clean and functioning properly. Don't store toilet paper on top of toilet paper dispenser.];
```

Toilet paper, paper towels, hand sanitizer, etc... hot water that is 100°F (42.4°C)

Keep these facilities clean and functioning properly. Don't store toilet paper on top of toilet paper dispenser.

5. Protection from Adulterants

```
graph TD; A[5. Protection from Adulterants] --> B[Cooler condensate; light fixtures, skylights or other glass suspended over food processing/storage areas; hydraulic fluids; rust, etc...]; B --> C[No reusing shellstock bags (only new clean bags to be used).]; C --> D[Adequately ventilated areas for storage/processing to remove noxious fumes, condensate, etc...]; D --> E[Any visible contaminants in the ice supply (dirt, rust, etc...) mold.]; E --> F[Condensate from ceiling or condenser in cooler storage area]; F --> G[Food or beverage containers stored in or on the ice supply];
```

Cooler condensate; light fixtures, skylights or other glass suspended over food processing/storage areas; hydraulic fluids; rust, etc...

No reusing shellstock bags (only new clean bags to be used).

Adequately ventilated areas for storage/processing to remove noxious fumes, condensate, etc...

Any visible contaminants in the ice supply (dirt, rust, etc...) mold.

Condensate from ceiling or condenser in cooler storage area

Food or beverage containers stored in or on the ice supply

6. Proper Labeling/Storage/Use of Toxic Compounds

Keep insecticides and rodenticides, (for boats) hydraulic oils, gasoline, diesel, etc.. separate from caustic acids, metal polishing chemicals, etc.

Toxic compounds stored separately from detergents, sanitizers and related cleaning agents

Do not store above food contact surfaces or stored shellfish. Make sure all are labeled accordingly

Provide a test kit or other device that accurately measures in parts per million the concentration of the chemical sanitizing agent in use

KEEP chemical sanitizing agent and detergents stored separate from all other toxic chemicals, acids, oils, fuel, etc.

No label on sanitizer bottle

No Test Kit or other device available to accurately measure the concentration of the chemical sanitizing agent during inspection

7. Employee Health

```
graph TD; A[7. Employee Health] --> B[No sick employees handling food. Assign to other duties.]; B --> C[8. Exclusion of Pests]; C --> D[The facility shall be operated in a manner to assure that pests (rodents, insects, etc..) are excluded from the facility and processing activities.]; D --> E[No animals allowed (dogs, cats, birds, etc...) in facility or on boat.]; E --> F[Item #16 SSOP Audit form. Monitors all above 8 items. Fill out daily during operating days, harvest days.];
```

No sick employees handling food. Assign to other duties.

8. Exclusion of Pests

The facility shall be operated in a manner to assure that pests (rodents, insects, etc..) are excluded from the facility and processing activities.

No animals allowed (dogs, cats, birds, etc...) in facility or on boat.

Item #16 SSOP Audit form. Monitors all above 8 items. Fill out daily during operating days, harvest days.

NSSP Standardized Shellfish Processing Plant Inspection Checklist

Agency Name:				Date:			
Type of Inspection: <input type="checkbox"/> Certification <input type="checkbox"/> Pre-operational <input type="checkbox"/> Routine <input type="checkbox"/> Follow-up <input type="checkbox"/> Standardization							
Dealer Name:				Certification Number:			
Dealer Address:							
Hazard Analysis Critical Control Point (HACCP)							
1. HACCP Plan: Yes <input type="checkbox"/> No <input type="checkbox"/> Required for Certification							
2. Plan Elements Identified and Adequate		<input checked="" type="checkbox"/> NA	Code			<input checked="" type="checkbox"/> NA	Code
(a) Hazards			O	(e) Critical Control Points			K
(b) Records			O	(f) Monitoring			K
(c) Critical Limits			K	(g) Verification Procedures			O
(d) Name, Address, Signed and Dated			O	(h) Corrective Action If Identified			K
3. HACCP Training: Yes <input type="checkbox"/> No <input type="checkbox"/> Code O							
4. Plan Implementation		Corrective Actions Recorded (K) Verification Procedures (K) (Signature) Monitoring Procedures (K) Records: Accurate/ Maintained (K) Format (O) Initialed/Dated (O) Firm's Name on record (O)				<input checked="" type="checkbox"/> NA	Code
(a) Receiving							
(b) Shellstock Storage							
(c) Processing							
(d) Shucked Meat Storage							
(e) Other Critical Limits							
5. Approved Source Control Failure							
6. Time/Temperature Control Failure							
7. Other Critical Control Failure							
Sanitation Items				Citation	<input checked="" type="checkbox"/>	Code	
8. Safety of water for processing and ice production				.02A			
9. Condition and cleanliness of food contact surfaces				.02B			
10. Prevention of cross-contamination				.02C			
11. Maintenance of hand-washing, hand sanitizing, and toilet facilities				.02D			
12. Protection from adulterants				.02E			
13. Proper labeling, storage, and use of toxic compounds				.02F			
14. Control of employees with adverse health conditions				.02G			
15. Exclusion of pests				.02H			
16. Sanitation Monitoring and Records				X.02		S(K/O)	
Additional Model Ordinance Requirements				Citation	<input checked="" type="checkbox"/>	Code	
17. Plants and Grounds				.03A			
18. Plumbing and related facilities				.03B			
19. Utilities				.03C			
20. Disposal of other waste				.03D			
21. Equipment condition, cleaning, maintenance, and condition of non-food contact surfaces				.03E			
22. Shellfish storage and handling				.03F			
23. Heat shock				.03G			
24. Supervision				.03H			
25. Transportation (To include only the person shipping)				IX.05		K	
26. Labeling and Tagging				X.05, .06, .07		S (K/O)	
27. Shipping Documents and Records / Written Recall Procedures				X.06, .03		K	
Dealer's Signature:				Inspector's Signature:			

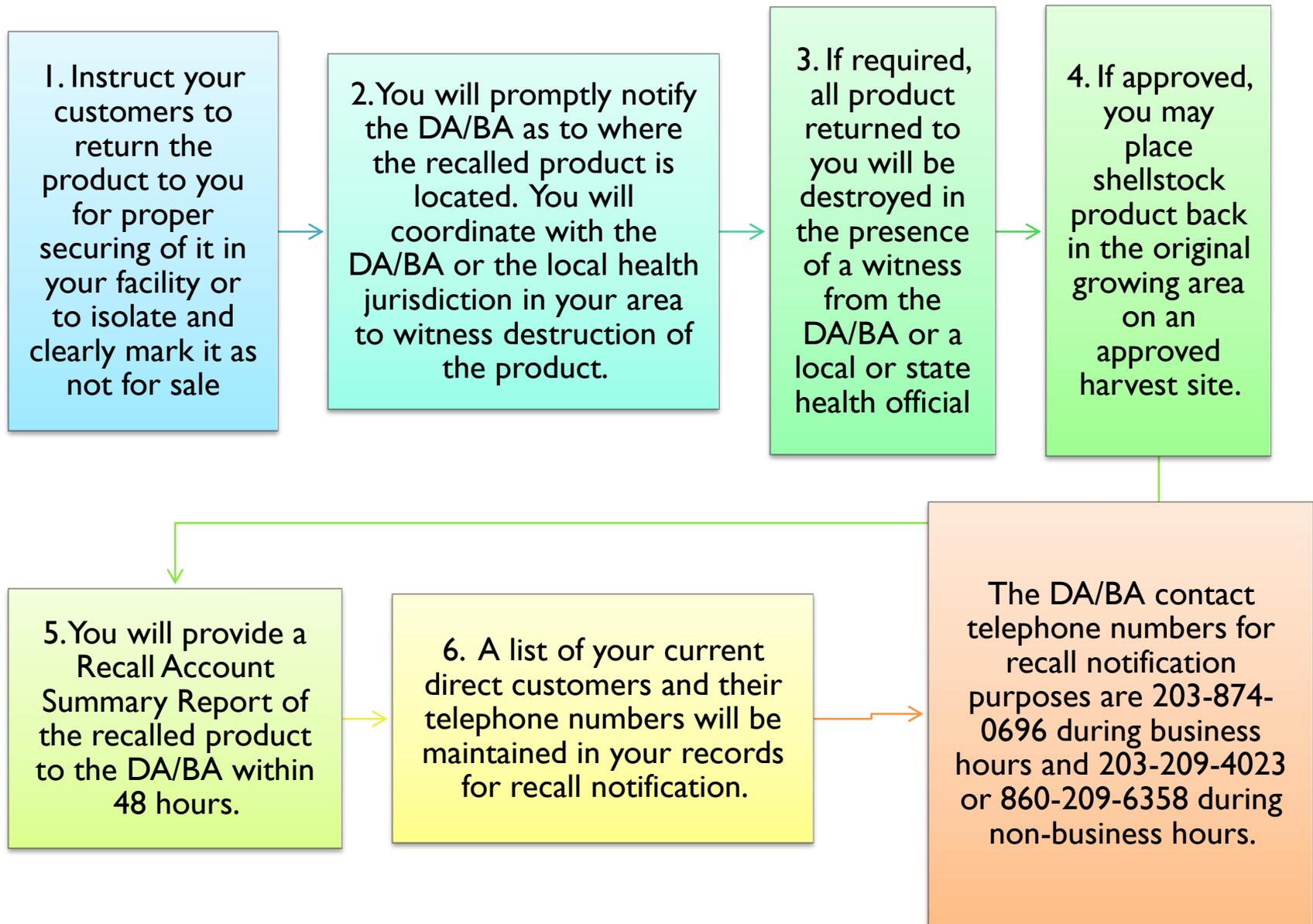
Recalls: New NSSP MO Guidance

The DA/BA will monitor the progress and success of all recalls within CT. Should there be a need to initiate a recall either by direction of the DA/BA or by a licensed shellfish company, you are required to adhere to the following:

1) Promptly follow the directions of the DA/BA in reacting to a recall and/or promptly notify the DA/BA by telephone when any situations come to your attention which could warrant initiating a recall. These situations could be any reports of illness, biotoxin closures, sewage spills, petroleum products spills, etc.

2) Once informed that a DA/BA directed recall or a Firm-initiated recall is implemented, promptly contact each of your customers by telephone or in person and notify them about the recall. Direct your customers to stop all sales and secure any products involved in the recall that may still be on hand.

3) Properly identify each bag/container of shellstock or shucked meat involved in the recall with an On-Hold for Recall placard or marker with date and separate them from other products not involved in the recall. These recall products must be properly secured.



1) Request that your customers report back to you as soon as possible, but no later than 24 hours:

- Where the recalled products were distributed and
- Whether your customers still have any product on hand.

2) Maintain an accurate Recall Account Summary Report of products sold to each of your customers and the current disposition of the products:

- Amount sold to each customer during the recall period
- Amount still on hand at your facility
- Amount still on hand at each of your customers facilities
- Amount already sold and consumed and not returnable by each of your customers

F A X

To: CT Department of Agriculture Bureau of Aquaculture
 Attention: Recall Coordinator
 Fax number: 203-873-9976

From:
 Shellstock Shippers #:
 Fax number:

Date:

Regarding:
 Recall Summary Account Report for Harvest Location and Date:

Phone number for follow-up:

Comments:

Any questions should be directed to:

Name: _____ Phone: _____
 Email: _____ Fax: _____

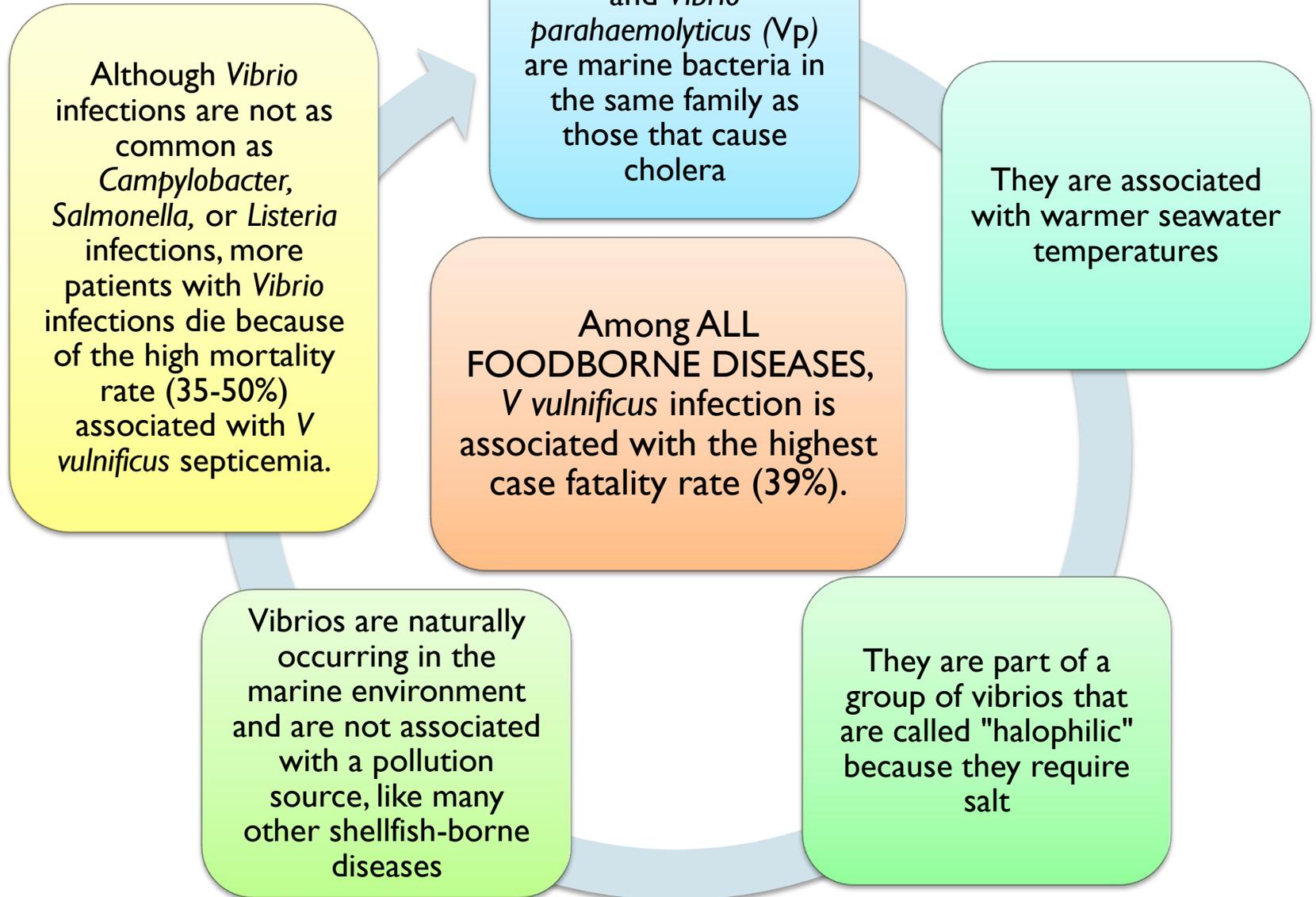
Attached is the final Recall Summary Accounting Report for _____ providing the final disposition of all shellfish products involved and distributed in the recall of harvest location _____ and date _____.

Signature of Company Owner/Manager _____

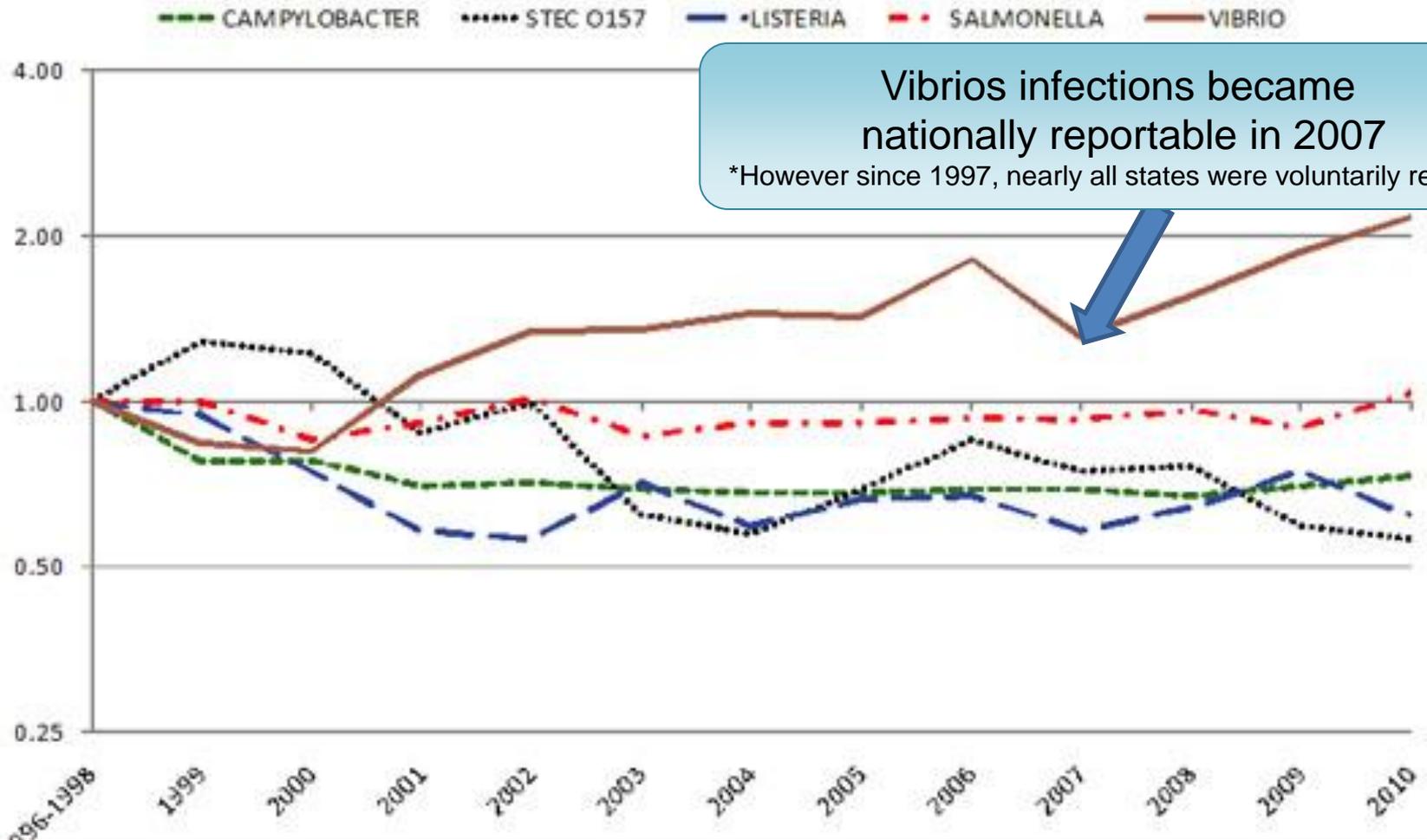
Sample Recall Summary Account Report For
 (Harvest Location and Date)

Product	Customer Shipped To	Quantity Shipped to Customer's Location	Quantity Still On Hand at Customer's Location	Quantity Returned or Destroyed	% Returned or Destroyed
EXAMPLE: Eastern Oyster (<i>Crassostrea virginica</i>) 100 count					

Vibrios



Foodborne Illness Rates 1996-2010



Vibrios infections became nationally reportable in 2007
 *However since 1997, nearly all states were voluntarily reporting

Figure I. Relative rates of laboratory-confirmed infections with *Campylobacter*, *E. coli* O157, *Listeria*, *Salmonella*, and *Vibrio*, compared with 1996--1998 rates, by year --- Foodborne Diseases Active Surveillance Network, United States, 1996--2010*

<http://www.cdc.gov/foodborneburden/trends-in-foodborne-illness.html>

Changes in Confirmed
Bacterial Infections
1996 vs. 2010

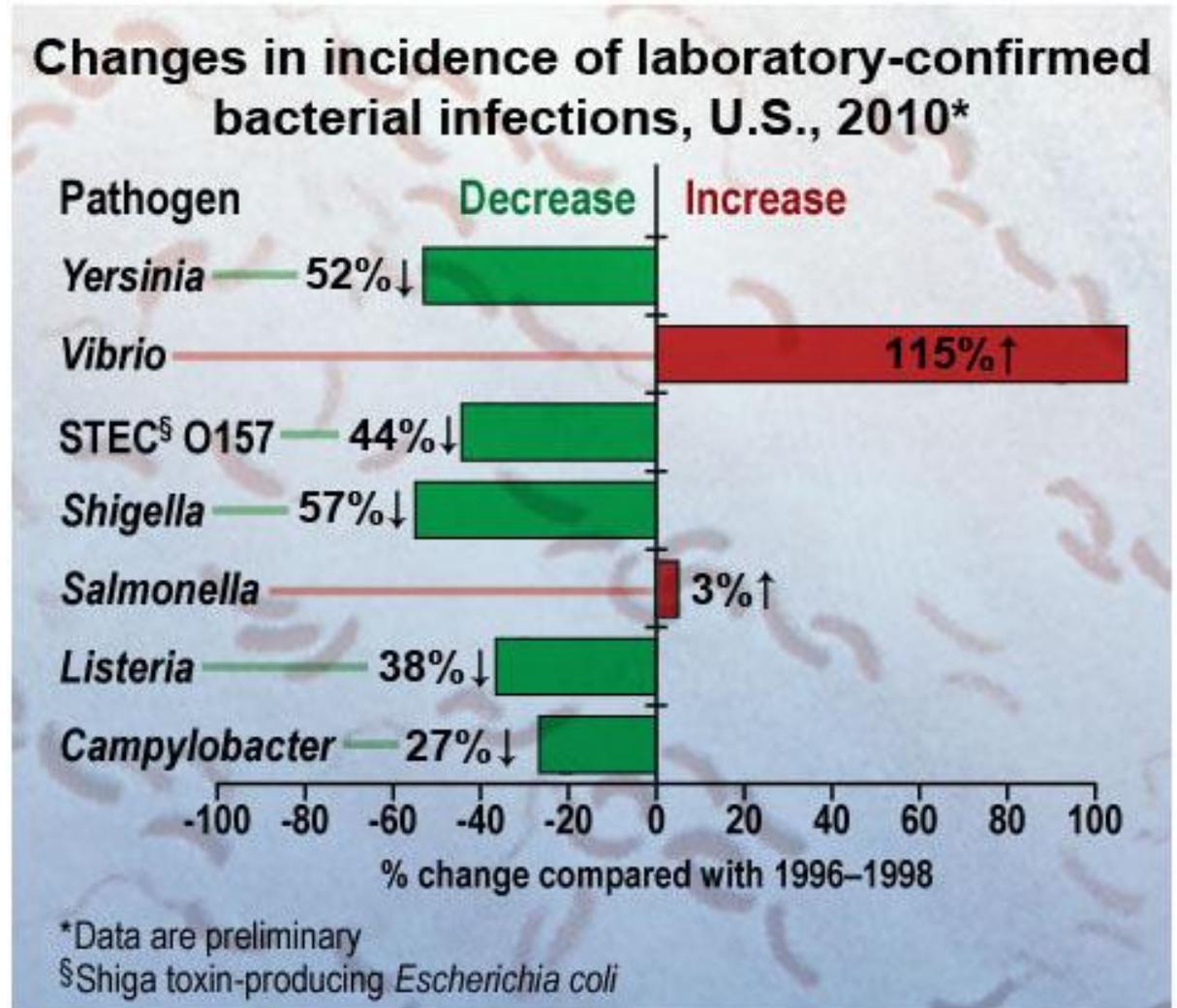


Figure 2. Changes in incidence of laboratory-confirmed bacterial infections, United States, 2010 compared with 1996–1998

<http://www.cdc.gov/foodborneburden/trends-in-foodborne-illness.html>

What type of illness does *V. vulnificus* cause?

Among healthy people, ingestion of *V. vulnificus* can cause vomiting, diarrhea, and abdominal pain

Persons who are immunocompromised are at higher risk for invasion of the organism into the bloodstream and potentially fatal complications

In immunocompromised persons, particularly those with chronic liver disease, *V. vulnificus* can infect the bloodstream, causing a severe and life-threatening illness characterized by fever and chills, decreased blood pressure (septic shock), and blistering skin lesions

V. vulnificus can cause an infection of the skin when open wounds are exposed to warm seawater; these infections may lead to skin breakdown and ulceration

V. vulnificus bloodstream infections are fatal about 50% of the time

Vibrio vulnificus
Lesions



Vibrio vulnificus
Necrotizing
fasciitis



A

B

What type of illness does *V. parahaemolyticus* cause?

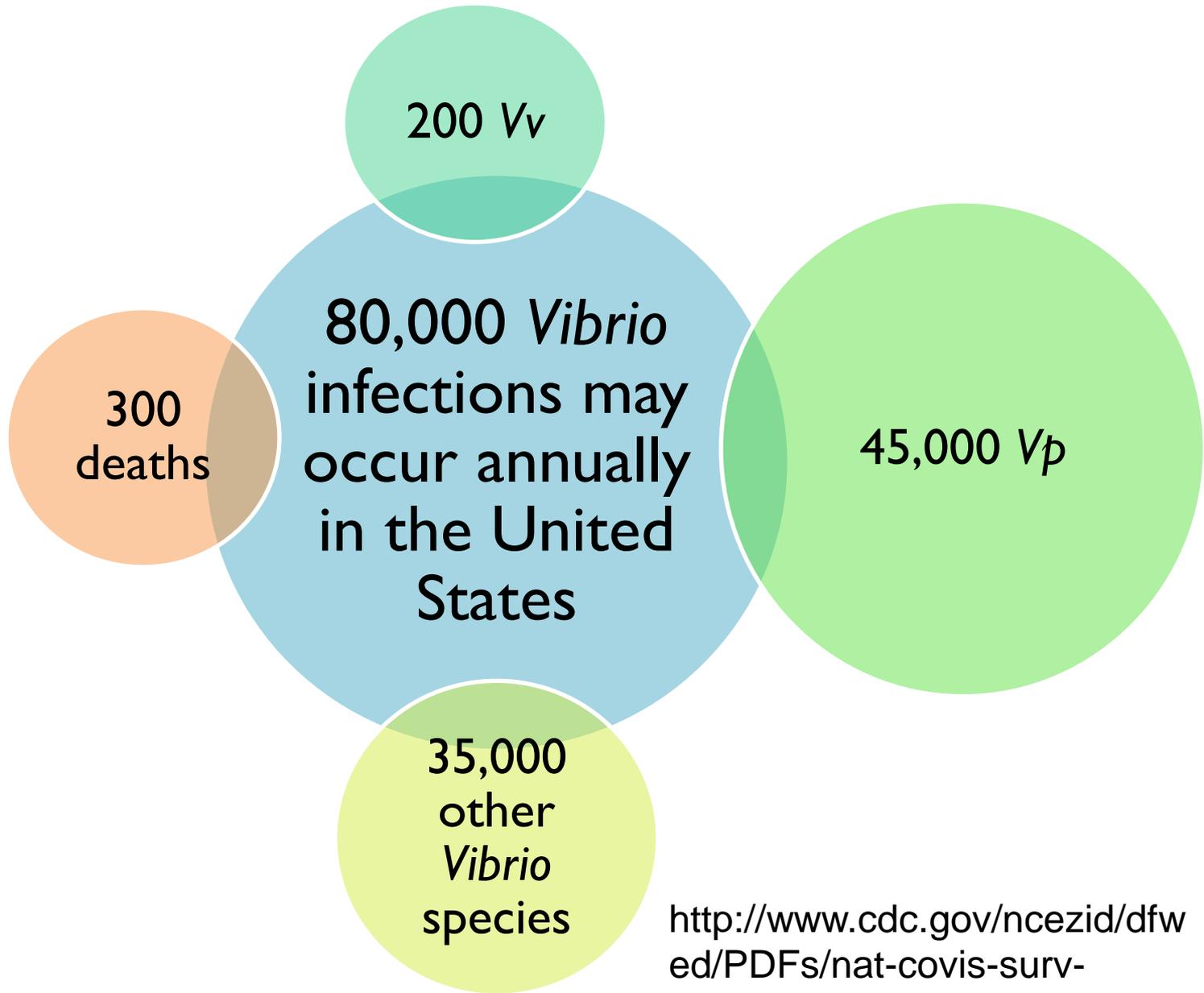
V.p. can also cause an infection of the skin when an open wound is exposed to warm seawater

When ingested, *V.p.* causes watery diarrhea often with abdominal cramping, nausea, vomiting, fever and chills.

Usually these symptoms occur within 24 hours of ingestion.

Severe disease is rare and occurs more commonly in persons with weakened immune systems.

Illness is usually self-limiting and lasts 3 days.



<http://www.cdc.gov/ncezid/dfwed/PDFs/nat-covis-surv-overview-508c.pdf>

How do persons get infected with *V. vulnificus* or *V. parahaemolyticus*?

Raw or undercooked seafood consumption, particularly oysters

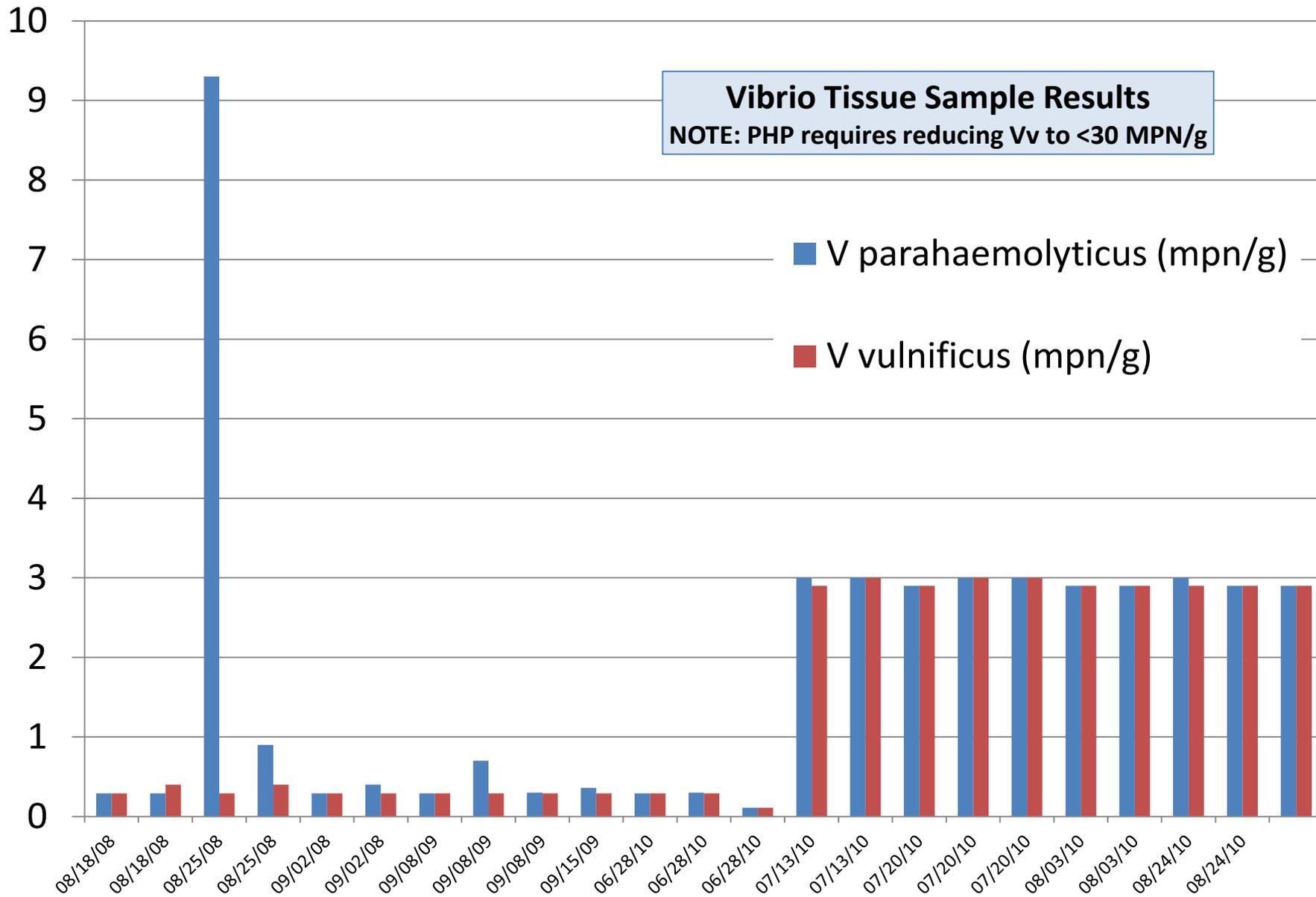
Most at risk for Vv are the immunocompromised, especially those with chronic liver disease (including hepatitis, cirrhosis and liver cancer) and also HIV/AIDS and cancer

A recent study showed that people with these pre-existing medical conditions were 80 times more likely to develop *V. vulnificus* bloodstream infections than were healthy people

Since it is naturally found in warm marine waters, people with open wounds can be exposed to Vv and Vp through direct contact with seawater

Vibrio Illness Investigations in CT

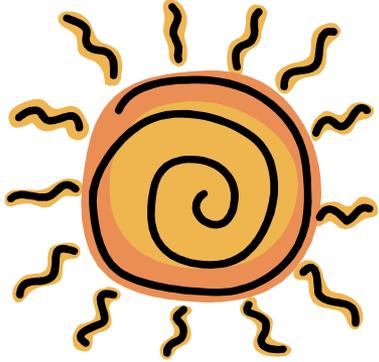
Year	Number of Cases	Source States
2009	7 (5 CT)	1 MA 1 CT or RI 1 CT or NY 1 Unknown 3 Definitely CT
2010	5 (3 CT)	1 ME, MD or VA 1 CT, ME, or WA 1 NY, WA, ME, MA 2 Definitely CT
2011	6 (5 CT)	1 CT, PE, NY 1 Unknown 3 Definitely CT 1 CT or WA



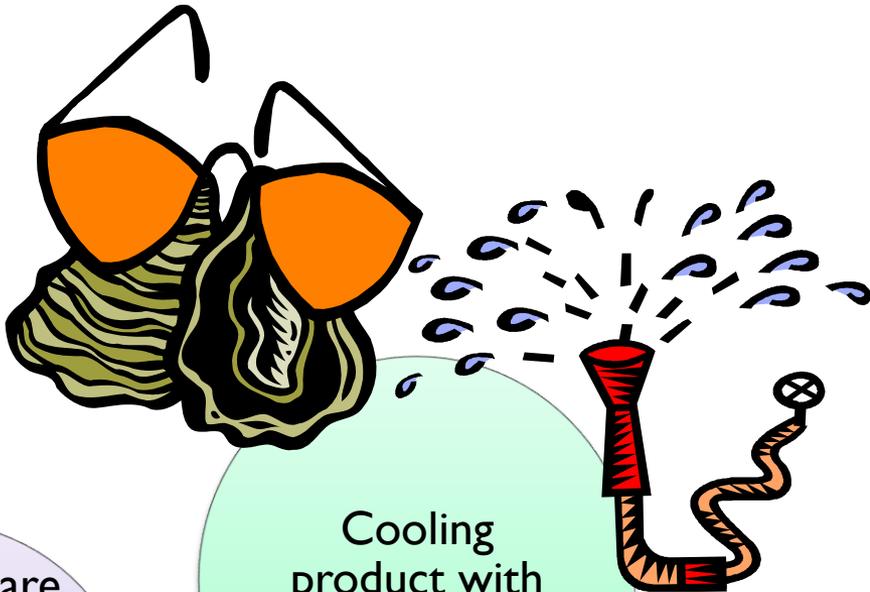
Vp Bacteria Doubling Times

Temperature specific Vp Growth rates and Doubling times for calculating cumulative growth based on hourly temperature observations

Oyster Temperature	Doubling Time	Oyster Temperature	Doubling Time
(degree F)	(hrs)	(degree F)	(hrs)
50	35.8		
55	13.8	80	1.64
60	7.24	85	1.28
65	4.45	90	1.03
70	3.01	95	0.85
75	2.17	100	0.71



Shading product onboard vessel (can reduce temps by 10°F)



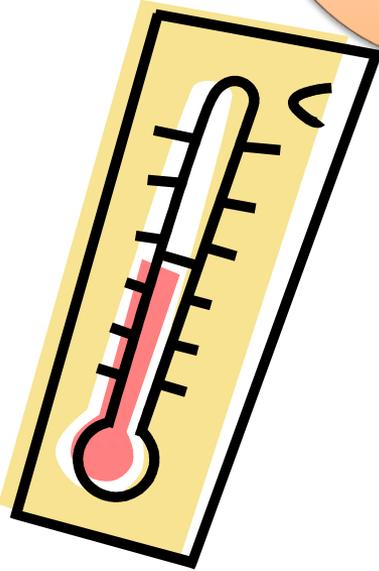
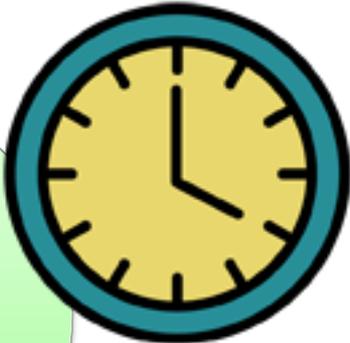
Cooling product with harvest water

Monitor cooling of shellstock to ensure that temperature brought down to 50°F within 10 hours

In CT we are asking harvesters to abide by voluntary Vibrio Control Plans

Monitor temperatures of shellstock while onboard vessel

Minimize time from first harvest to refrigeration





Time to Temperature Model Ordinance
Harvester to Original Dealer

NEW REQUIREMENT: Document time of first harvest and time to dock on harvest log and add this information to sales invoice (many of you are doing this already)

From NSSP MO: The Authority shall ensure that harvesters document and provide *trip records* to the initial dealer demonstrating compliance with the time to temp requirements

In CT trip records = harvest logs but INVOICE will have info

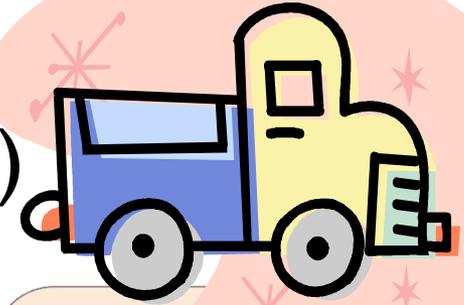
Since according to CT statutes, harvest is limited to hours between sunrise and sunset, CT harvesters will have **12 hours total from time of first Harvest to Refrigeration. Once docked, have up to 2 hours to refrigeration.**

NOTE: 12 Hour Requirement is only for months *OUTSIDE* of Vibrio Management months

(for CT likely to be July, August, September)

Chapter IX. Transportation

Harvester to Original Dealer (.01.A.)



Temp inside the truck cannot exceed the outside air temp when the outside air temp is above 50 °F

Pick up with Cap,
NO

Non-refrigerated Box Truck
NO

Open pick up or flat bed truck
OK

Refrigerated van running and cold at ≤ 45 °F
GREAT!

Product must be refrigerated within 2 hours of reaching dock and within 12 hours from time of first harvest

Original Dealer/Harvester to Dealer 2

NEW Chapter XIII Shellstock Shipping

RECEIVING Critical Control Point

CRITICAL LIMIT 1

@01.A.(1)(c). Harvested the shellstock in accordance with the time temperature requirements of Chapter VIII .01 A. (1),(2), or (3) **[C]**

(1) Vv Control Plan
(NOT YET in CT)

(3) 12 hours harvest to
refrigeration in CT

(outside of Vibrio months)

This means that in order for the Dealer 2 to accept the product, Dealer 2 must know time the product was first harvested

(2) Vp Control
Plan (NOT YET
in CT)

Dealer to Dealer

NEW Chapter XIII Shellstock Shipping

RECEIVING Critical Control Point

CRITICAL LIMIT 2:

@01.A.(2) The dealer shall ship or repack only shellstock obtained and transported from dealer:

(a) Adequately iced, or (b) In a conveyance at or below 45°F ambient air temperature;

AND

(c) At an internal temperature of 50°F or less

Original Dealer to Dealer 2

NEW Chapter XIII Shellstock Shipping

RECEIVING Critical Control Point

CRITICAL LIMIT 3:

(3) Should a dealer receive shellstock from the original dealer which does not meet the requirements of A. 2. (a), (b), or (c) above, the shellstock shipment must be:

accompanied by time-temperature recording device indicating continuous cooling has occurred. Shipments of 4 hrs or less will not be required to have a time/temperature device. **[C]**

Original Dealer to Dealer 2

Harvesters that are also purchasing product from multiple harvesters are considered in CT to be *Original Dealers*

Product must be shipped adequately iced **OR**

In a conveyance prechilled at or below 45°F ambient air temp **AND**

This product can be shipped even though it may be >50°F internal temperature, but shipment must be accompanied by time-temperature recording device indicating continuous cooling has occurred

Original Dealer

You must receive shellstock within time/temp requirements
12 Hours from time of Harvest

You must place into Refrigeration within **12 Hours from time of Harvest**
AND
within **2 hours of time to Dock**

Hold product until Temp reaches an internal temperature of 50°F or less within 10 hours of being placed under refrigeration

You can ship >50°F product:
With Continuous Time/Temp recording device

Original Dealers

Please be very clear:

Although you **MAY** ship shellfish before it has reached 50°F, we are ***STRONGLY ENCOURAGING*** you to hold product until it reaches 50°F to ***BEST*** prevent growth of bacteria

Original Dealers

Trucks are not going to be as effective as a cooler in getting internal temperatures down

Trucks are designed to maintain the temperature of previously refrigerated product

There are additional requirements for shipping if you do not get temp down

More work on the part of your customers to verify that product has been handled correctly

Dealer 2+

You must receive shellstock at an internal temperature of 50°F or less

If shellstock is > 50°F internal temperature you must receive the shellstock with the Time/Temp Recording Device and assure that continuous cooling has occurred

If not received with Time/Temp recording device must verify time placed into refrigeration and shipment time

Original Dealer or Dealer 2+

NEW Chapter XIII Shellstock Shipping

RECEIVING Critical Control Point

CRITICAL LIMIT 4: NO CHANGE

(4) The dealer shall ship or repack only in shell product obtained from a dealer who has;

(a) Shipped the in-shell product adequately iced; or in a conveyance at or below 45°F ambient air temperature; or 50°F internal temperature or less;

AND

(b) Identified the in-shell product with a tag on each container

Original Dealer or Dealer 2+

Chapter XIII Shellstock Shipping

Shellstock Storage Critical Control Point –

CRITICAL LIMIT 2: NO CHANGE

(2) Once placed under temperature control and until sale to the processor or final consumer, shellstock shall be:

(a) Iced; or **[C]**

(b) Placed in a storage area or conveyance maintained at 45° F (7.2° C) or less; and **[C]**

(c) Not permitted to remain without ice, mechanical refrigeration or other approved methods of refrigeration, as required in B(2) (a) or (b), for more than **2 hours** at points of processing or transfer such as loading docks. **[C]**

Original Dealer or Dealer 2+

NEW Chapter XIII Shellstock Shipping

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graph TD; A[NEW Chapter XIII Shellstock Shipping] --> B[Shellstock Storage Critical Control Point –]; B --> C[CRITICAL LIMIT 4:]; C --> D["@01. B. (4) All other shellstock obtained from a licensed harvester shall be placed in a storage area or conveyance prechilled or maintained at 45°F within 2 hours of receipt and cooled to an internal temperature of 50°F within 10 Hours of receipt."];
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Shellstock Storage Critical Control Point –

CRITICAL LIMIT 4:

@01. B. (4) All other shellstock obtained from a licensed harvester shall be placed in a storage area or conveyance prechilled or maintained at 45°F within 2 hours of receipt and cooled to an internal temperature of 50°F within 10 Hours of receipt.

Dealer 2+

You must receive shellstock at an internal temperature of 50°F or less

If shellstock is > 50°F internal temperature you must receive the shellstock with the Time/Temp Recording Device and assure that continuous cooling has occurred

We recommend that you hold product until Temp reaches an internal temperature of 50°F or less within 10 hours of being placed under refrigeration

You may ship product that is >50°F, however it must be accompanied by a Time/Temp Recording Device and temp **MUST** reach 50°F or less within 10 hours of being placed under refrigeration

Original Dealer or Dealer 2+

NEW Chapter IX. Transportation

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graph TD; A[NEW Chapter IX. Transportation] --> B[.04. Shipping Temperatures]; B --> C[Shellfish dealers shall ship shellstock adequately iced; or in a conveyance pre-chilled at or below 45°F (7.2°C) ambient air temperature.]; C --> D[.05. Transportation Records]; D --> E[All shipments of shellstock shall be accompanied with documentation indicating that at the time of shipment all shipping conveyances comply with the requirements of Chapter IX.04.];
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.04. Shipping Temperatures

Shellfish dealers shall ship shellstock adequately iced; or in a conveyance pre-chilled at or below 45°F (7.2°C) ambient air temperature.

.05. Transportation Records

All shipments of shellstock shall be accompanied with documentation indicating that at the time of shipment all shipping conveyances comply with the requirements of Chapter IX.04.

Chapter IX. Transportation

ALL Other Shipments (.04 and .05)

Original Dealer:
<50°F product:
Add Temp of Truck
at time of
Shipment to
invoice or Bill of
Lading

Original Dealer:
If shipping
shellstock >50°F
Add Temp of Truck
at time of
Shipment to
invoice or Bill of
Lading

Original Dealer:
If shipping
shellstock >50°F
Shipments
Accompanied by
Time/Temp
Recording Device

Dealer 2+:
We recommend
that you only
ship product that
has been cooled
to an internal
temperature of
50°F or less
Add Temp of
Truck at time of
Shipment to
invoice or Bill of
Lading and
Accompany with
Time/Temp
Recording
Device