

FOOD SCIENCE & HYGIENE

Chapter 4.... Food Sources and Protection

Food sources

Your responsibility for food safety starts when you receive it.

Do not accept food from unapproved sources, adulterated or out of temperature

Give special attention to the following;-

- Wholesome check... damaged containers, leaks, smells, dirt, or signs it is not fresh

Food source continued

- Packaged food... Commercially packaged food will be clearly labeled, never accept packaged food if it does not have a label
- Milk & milk products... Only pasteurized products can be received
- Eggs... Should only be bought from regulated sources, never accept cracked or dirty eggs
- Shellfish... Shellfish should be obtained in containers with proper labeling and certification number

Food source continued

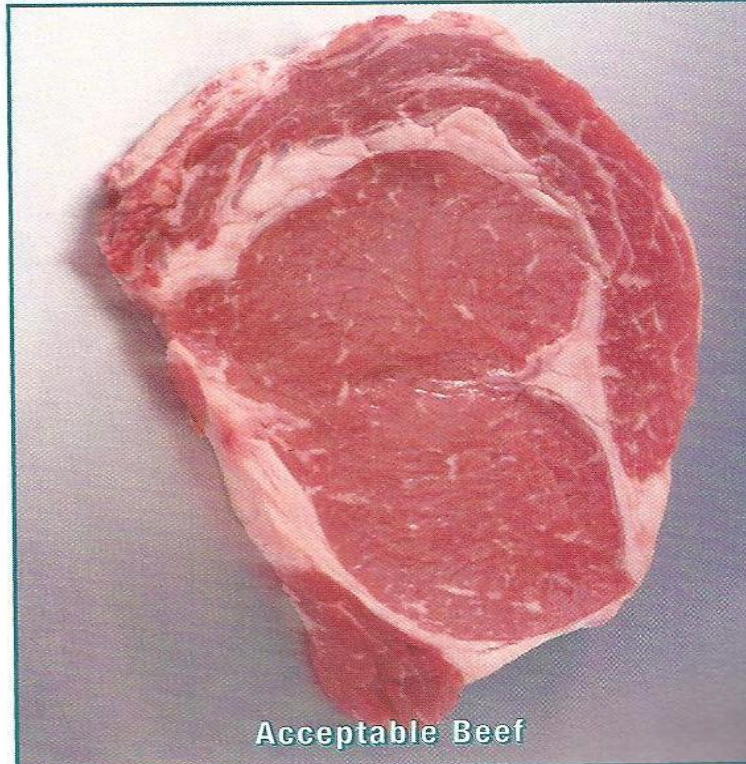
- Meat... All meat and meat products must be from a regulated meat supplier
- Produce... Fruit & vegetables usually come from approved suppliers, If obtained from local markets, or growers, care must be taken to ensure it is fresh and clean.
- Other foods... All other food must be from approved suppliers

Receiving Temperature

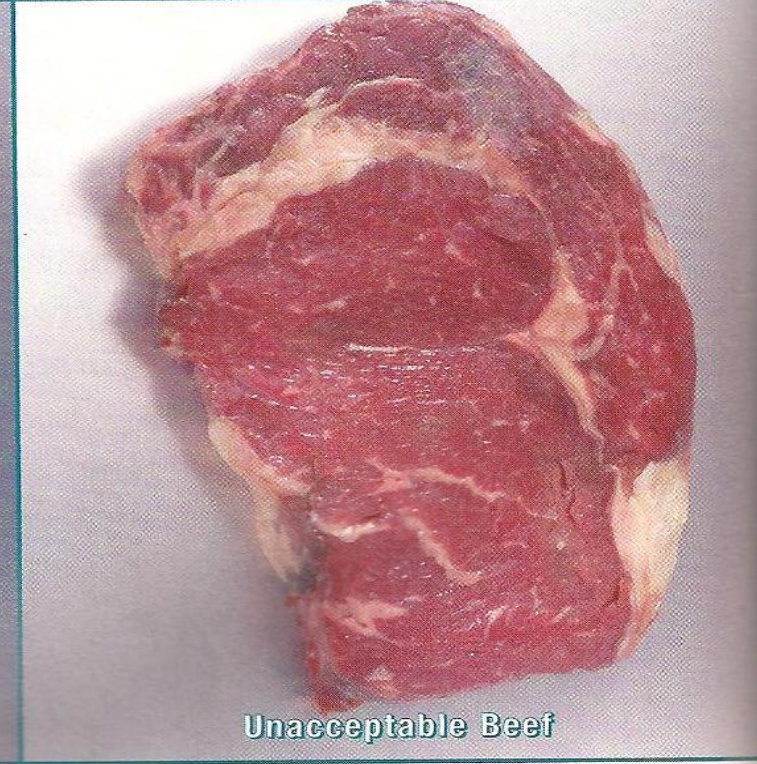
- Frozen food should be received at -18 degrees C
- Dairy foods should be received under 5 degrees C
- Raw meat and fish should be received under 5 degrees C
- Dry goods at normal room Temperature

Receiving meat

Product	Accept Criteria	Reject Criteria
Meat Receive at 41°F (5°C) or lower	Beef Color: bright cherry red Lamb Color: light red Pork Color: pink lean meat, white fat Texture: firm and springs back when touched	Color: brown or greenish; brown, green, or purple blotches; white or green spots Texture: slimy, sticky, or dry Packaging: broken cartons, dirty wrappers, or torn packaging Odor: sour odor



Acceptable Beef



Unacceptable Beef

Receiving poultry

Product

Accept Criteria

Reject Criteria

Poultry

Receive at 41°F (5°C)
or lower

Color: no discoloration

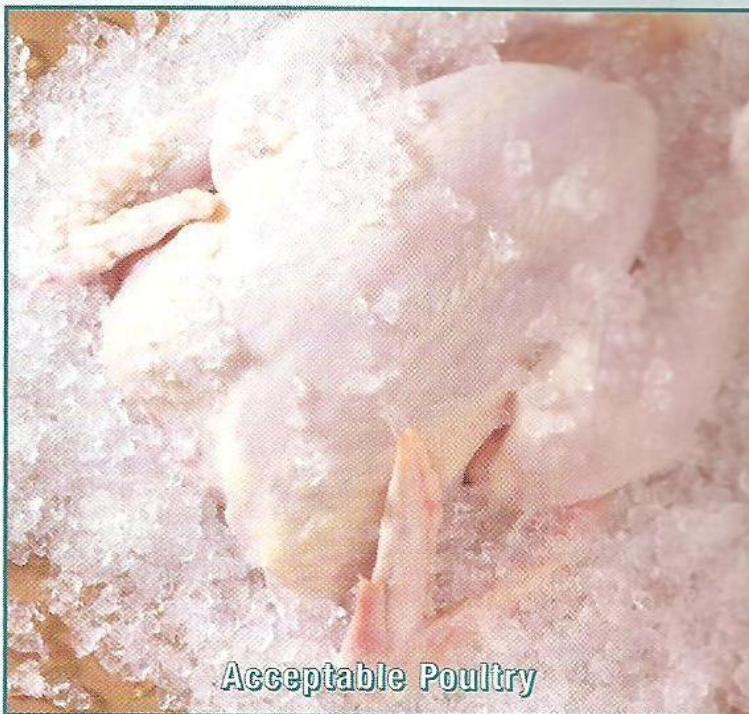
Texture: firm and springs back when touched

Odor: none

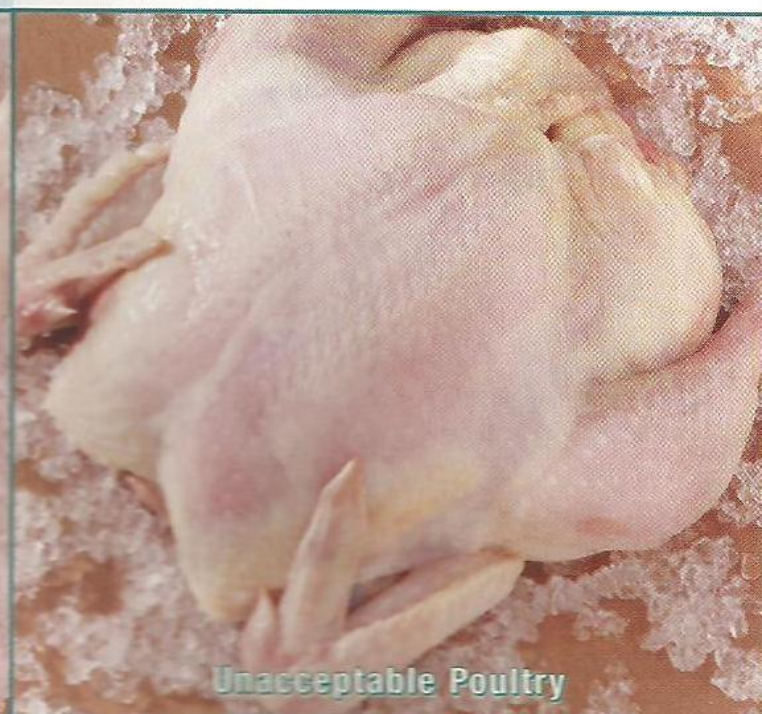
Color: purple or green discoloration around the neck;
dark wing tips (red tips are acceptable)

Texture: stickiness under the wings or around joints

Odor: abnormal, unpleasant odor





Acceptable Poultry



Unacceptable Poultry

Receiving fish & shellfish

Product	Accept Criteria	Reject Criteria
<p>Fish Receive at 41°F (5°C) or lower</p>	<p>Color: bright red gills; bright shiny skin Odor: mild ocean or seaweed smell Eyes: bright, clear, and full Texture: firm flesh that springs back when touched</p>	<p>Color: dull gray gills; dull dry skin Odor: strong fishy or ammonia smell Eyes: cloudy, red-rimmed, sunken Texture: soft, leaves an imprint when touched</p>
	 <p style="text-align: center;">Acceptable Fish</p>	 <p style="text-align: center;">Unacceptable Fish</p>

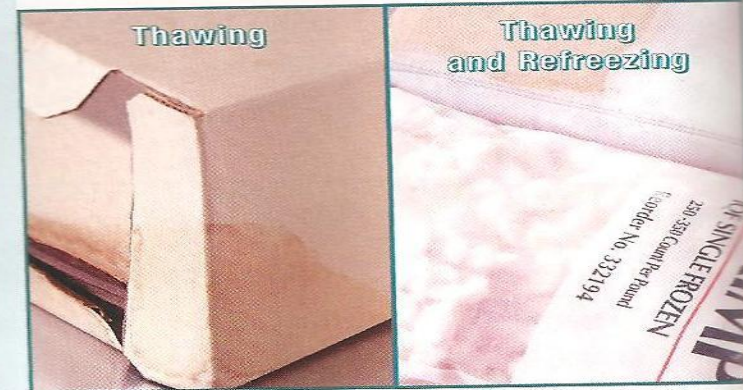
Other Criteria:

Fresh fish should be received packed on crushed or flaked self-draining ice

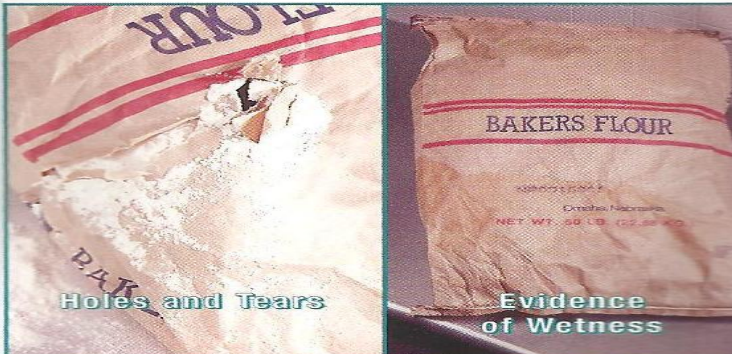
<p>Shellfish Clams, mussels, oysters Receive at 45°F (7°C) or lower</p>	<p>Odor: mild ocean or seaweed smell Shells: closed and unbroken (indicates shellfish are alive) Condition: if fresh, they are received alive</p>	<p>Odor: strong fishy smell Shells: open and broken (indicates shellfish are dead) Condition: dead on arrival Texture: slimy, sticky, or dry</p>
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Receiving packaged foods

Product	Accept Criteria	Reject Criteria
<p>Produce Receiving temperatures vary with each produce item</p>		<p>Insect infestation, mold, cuts, mushiness, discoloration, wilting, dull appearance, unpleasant odors and tastes</p>
<p>Other Criteria: Grounds for rejecting one produce item may not apply to another. Cut melon is a potentially hazardous food and must be received at 41°F (5°C).</p>		
<p>Refrigerated and Frozen Processed Foods Pre-cut meats, frozen or refrigerated entrées, fresh cut fruits and vegetables</p> <p>Refrigerated: receive at 41°F (5°C) or lower unless specified by the manufacturer</p> <p>Frozen: frozen foods should be received frozen</p>	<p>Package intact and in good condition</p>	<p>Both Refrigerated and Frozen Products Torn packages or packages with holes Expired use-by dates</p> <p>Frozen Processed Food Large ice crystals on the product or package (evidence of thawing and refreezing) Fluids or frozen liquids at the bottom of a case, or water stains on packaging (evidence of thawing and/or refreezing) Abnormal color Dry texture</p>



Receiving packaged foods 2

Product	Accept Criteria	Reject Criteria
<p>MAP, vacuum-packed and sous vide packaged foods Fresh-cut produce items, bacon, some frozen diet entrées</p> <p>Refrigerated: receive at 41°F (5°C) or lower unless specified by the manufacturer</p> <p>Frozen: frozen foods should be received frozen</p>	<p>Package intact and in good condition</p>	<p>Leaking package</p> <p>Expired code date</p> <p>Unacceptable product color</p> <p>Product appears slimy or has bubbles</p>
<p>Other Criteria: Follow receiving and storage temperatures from the manufacturer if provided.</p>		
<p>Canned Goods</p>	<p>Can and seal are in good condition</p>	<p>Swollen ends, leaks and flawed seals, rust, dents, no labels</p>
<p>Other Criteria: Spot-check contents of a canned goods shipment. Foods that are foamy or milky should be thrown out and never tasted.</p>		
<p>Dry Goods</p> <p>Received at room temperatures</p>	<p>Package intact and in good condition</p>	<p>Packaging</p> <p>Holes, tears, or punctures</p> <p>Dampness or moisture stains (indicates that it has been wet)</p> <p>Product</p> <p>Contains insects, insect eggs, or rodent droppings</p> <p>Has an abnormal color or odor, spots of mold, or a slimy appearance</p>
		 <p>Holes and Tears</p> <p>Evidence of Wetness</p>

Important storage principle

- **F I F O**

- (First In – First Out)

Dry Food storage

Dry goods should be stored in a cool well ventilated area

It should be well lit and vermin proof

It should be easy to clean

Shelves should be strong and raised from the floor to enable cleaning

Dry goods (Flour etc) should be kept in lidded bins, labeled, and never topped-up

Fruit and vegetable storage

Very few fruits and vegetables need refrigerated storage...some chefs prefer it

Store in the same conditions as dry goods

Store in original boxes, to reduce handling

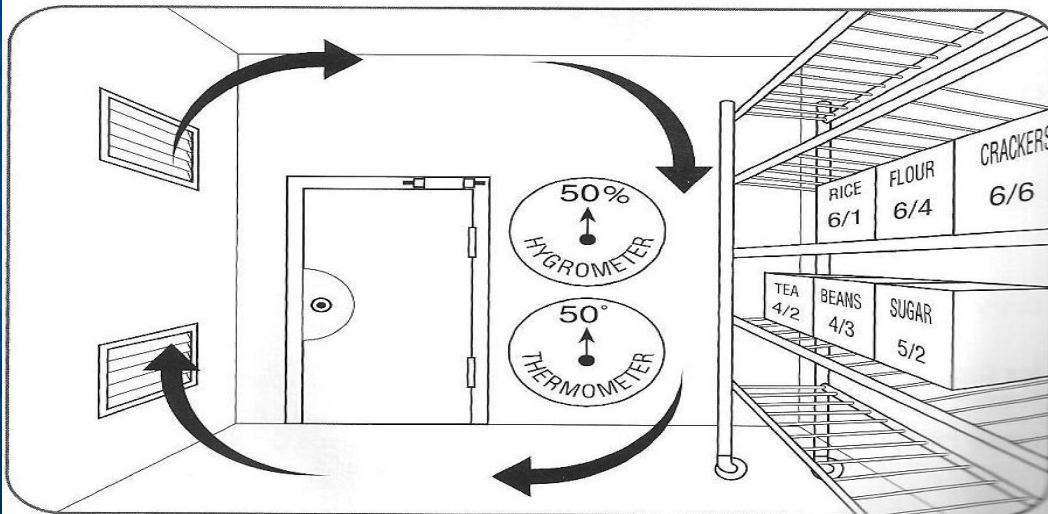
Remove any rotten fruit, vegetables, as it will spoil the rest of the batch

Beware of exotic insects (tarantulas etc)



Storing Foods Properly

Products should be stored wrapped in clean containers that are clearly marked.



An Acceptable Dry-Storage Facility

Dry-storage temperatures should be between 50°F to 70°F (10°C to 21°C), and the humidity should be between 50 and 60 percent if possible.

Refrigerated storage

Temperature control is the best way of preventing bacterial growth

- Keep refrigerator doors closed
- Position away from hot appliances, and sunlight
- Clean daily, and keep food tidy
- Refrigerators should keep food under 4 degrees Celsius (Dairy Temperature)

Refrigerated storage continued

- Never overload the refrigerator
- Never put hot food in a refrigerator as this will cause... the temperature to rise, warm the food inside, encourage bacterial growth, increase condensation that may drip onto other foods. cross contamination and increase the ice build-up on the cooling unit

Refrigerated storage continued

- Unused portions of canned food should be transferred into a clean container, labeled and dated
- Never put food that could drip above other foods
- Always keep cooked and uncooked food apart

Storage of Frozen foods

- Most commercial freezers run at about -18 degrees Celsius
- This temperature cannot keep food indefinitely
- Bacteria may be dormant but will become active once the food is thawed out
- Only thaw food as it is needed

Protection from cross-contamination

All food, while being stored, prepared, displayed, served, sold or transported must be protected from cross-contamination.

The following points should be remembered;-

- Separate Animal meats
- Separate Ready-to-eat Foods
- Separate Storage Areas for unusable foods

Protection from cross-contamination continued

- Re-serving Food Prohibited
- Avoid Egg pooling and contamination
- Proper handling of glassware and dishes
- Minimize bare hand contact with that is cooked, or ready to eat
- Avoid Contamination from Gloves
- Protect food in self-service areas

Cross-Contamination Examples

- Placing cooked food in a raw food area
- Utensils used for raw food used on cooked food
- Drips of blood onto ready-to-serve food
- Spillage of food in refrigerator
- Dirty towel, Oven cloth, or apron

Don't contaminate cooked food by mixing it with raw food