

Chapter 3 – Food Sources and Protection

Foods can be placed in two general classes depending upon their ability to cause foodborne illness. Those that require controls to prevent harmful bacterial growth are called **time/temperature control for safety (TCS) foods**. Foods that do not require controls for time or temperature are known as **non-TCS foods**.

These categories are sometimes referred to as potentially hazardous foods (PHFs) and non-potentially hazardous foods (non-PHF), respectively. It is very important to know which foods need to be controlled for time and/or temperature. It is also essential that foods are obtained from approved sources and stored properly to prevent cross-contamination.

TIME/TEMPERATURE CONTROL FOR SAFETY (TCS) FOODS

A TCS food is any food **or ingredient** that will support the rapid growth of harmful bacteria.

Some examples:

- Any food of animal origin - all meats (red meat, poultry, fish, shellfish, crustaceans, etc.), eggs, and dairy products.
- Any food of plant origin that has been heat-treated and has a history of causing foodborne illness - potatoes, squash, pumpkin, rice, refried beans, mushrooms, onions, tofu and any un-heat-treated food of plant origin with a history of causing foodborne illness - seed sprouts, cut melons, cut tomatoes, and tightly wrapped produce such as mushrooms and coleslaw.
- Synthetic foods (unless laboratory evidence proves otherwise) - artificial cream filling.

Exceptions to the above are as follows:

- Air-dried hard-boiled eggs with shells intact.
- Food with low water activity (0.85 or less) - jerky, powdered milk, hard cheeses.
- Food with a pH of 4.6 or less - some commercially prepared dressings, pickled meats, and vegetables.
- Unopened containers of food which have been processed to maintain commercial sterility, such as unopened pasteurized milk products.
- Foods, both natural and synthetic, for which laboratory evidence demonstrates that growth of harmful bacteria will not occur.

FOOD SOURCES

Food safety starts when food supplies are received at the door of the food establishment. **Do not accept foods from unapproved sources or are unsafe, adulterated, or out of temperature.**

Give special attention to the following:

Wholesomeness Check. Check all incoming foods for damaged containers, leaks, off-odors, filth, and other signs that suggest food might not be wholesome.

Packaged Foods. Generally, foods commercially packaged and properly labeled are from approved food processing establishments. Approved establishments are regulated by federal or state agencies to ensure the safety of the product. **Do not receive or use packaged food without labels.** Salvaged packaged foods must be marked "Salvage."

Milk and Milk Products. Only pasteurized milk and milk products can be received and used, with the exception of the retail sale of packaged raw milk products direct to consumers.

Eggs. Eggs and egg products must be from a regulated egg producing or processing establishment.

Do not accept or use cracked, checked or dirty eggs.

Ungraded eggs can be sold at retail to the consumer only.

Shellfish. Shellfish must be obtained in containers bearing proper labeling with a certification number. Shellstock tags must remain with the container holding the shellfish until it is empty; tags are then retained for 90 calendar days.

Meat. All meat and meat products must be from regulated meat processing establishments and inspected for wholesomeness (unless exempted by law). For example, beef must be USDA inspected.

Produce. Most produce from warehouses is from approved sources. Occasionally, produce from a local source is obtained. Care should be taken to ensure that produce from a local grower has not been mishandled or contaminated.

Other Foods. Crustaceans, wild mushrooms, wildlife, and other foods not mentioned above must also be from approved sources.

Home-canned and Home-prepared Food. Foods canned or prepared in a private home or unregulated food establishment are not considered approved sources. **Do not accept or use these foods.** Such foods could present a risk to public health.

RECEIVING TEMPERATURE

Food safety starts when foods are received.

- **Frozen foods must be received frozen with no signs of previous thawing.**
- **TCS foods must be received at 41°F or less if intended to be kept cold or 135°F or greater if kept hot.**
- **Shell eggs, milk, and molluscan shellfish may be received at 45°F or below, per Idaho Food code 3-202.11.**

PROTECTION FROM CROSS-CONTAMINATION

All food must be protected against cross-contamination, whether it is being stored, prepared, displayed, transported, served or sold in food establishments.

Cross-contamination is the process through which raw foods can contact other raw foods of a different species or foods that are already cooked. Examples of cross-contamination include the following:

- Raw hamburger being thawed on the same plate with raw chicken.
- Raw chicken being stored over a salad, allowing the potential for the raw chicken juices to drip into the salad.
- Raw beef being trimmed on a cutting board, then using the same cutting board to slice tomatoes without washing, rinsing, and sanitizing the cutting board.
- Placing a raw steak on the grill and then touching other foods without washing hands or utensils first.

The following provides vital information and requirements as applicable to critical items:

Separation of Animal Species. Raw meat of all types of animal products (beef, fish, lamb, pork, poultry, etc.) must be physically separated during transportation, storage, and processing. This is required as different meats have different bacteria and parasite types and numbers. Normally, beef and lamb have the least and poultry has the most. This requirement is particularly important considering different preparation methods and cooking temperatures. Also, where custom meat processing is done, these meats must be stored and processed separately from inspected meats.

Separation of Ready-To-Eat Foods. Ready-to-eat food, including cooked food, must be physically separated from unwashed produce and uncooked food during storage, preparation, holding, transportation, and service. Physical separation can be vertical with ready-to-eat food located above unwashed produce and uncooked food products.

Separate Storage Areas for Unusable Foods. Separate storage areas must be provided for spoiled, returned, damaged, or unwholesome food.

Ice Protection. Ice intended for human consumption cannot be used for other purposes.

Re-serving Food Prohibited. Food, once served to the consumer, must not be served again. Some exceptions include crackers sealed in plastic, individual ketchup packets, and similar items.

Preparation of Ready-To-Eat Foods. Ready-to-eat foods must not be prepared in areas where raw meat is processed or stored unless there is proper cleaning between operations.

Avoiding Unsafe Additives. Ready-to-eat foods must not be prepared in areas where raw meat is processed or stored unless there is proper cleaning between operations.

Avoid Egg Pooling and Contamination. Fresh eggs should not be cracked in quantity and pooled. Use of pasteurized eggs is strongly recommended. Do not use raw eggs in ready-to-eat food products.

Protection of Bulk Foods. Prepared food, once removed from the original package or container, regardless of the amount, must not be returned. This applies to consumer self-service displays, salad bars, and similar bulk foods.

Avoiding Contamination from Gloves. *Gloves provide no special protection against cross-contamination.* When using gloves, always handle ready-to-eat products, such as salad, before non-ready-to-eat products, such as raw meat. Then handle, if necessary, raw foods in descending order of potential contamination as specified in the *Idaho Food Code*. Never reverse the food handling procedure.

CROSS-CONTAMINATION EXAMPLES

Some real examples of potential cross-contamination in Idaho food establishments are as follows:

- During the process of cutting chickens on a meat band saw, the operator cut a bologna to order on the same equipment.
- A food handler placed a cooked turkey for carving on the unclean surface where the turkey was previously placed during preparation when raw.
- Blood from thawing liver that dripped into a container of strawberry gelatin salad that was stored below it.
- Spoiled dairy products for salesperson pickup placed over ready-to-eat foods in a walk-in refrigeration unit.
- Ready-to-eat crab salad located in refrigerated display case next to raw sausage.
- A school kitchen worker used the same spoon to stir food being prepared for cooking and then without cleaning the spoon used it to stir ready-to-eat food being prepared for the serving line.

SUMMARY

- Time/temperature control for safety (TCS) foods are those foods or ingredients that will support rapid growth of harmful bacteria that cause foodborne disease.
- Many foods used by food establishments are potentially hazardous if not controlled for time and/or temperature. Most foods require cold holding.
- All foods must be obtained from approved sources. Home-canned and home-prepared foods are not approved.
- All incoming foods should be checked for wholesomeness.
- Frozen foods must be received frozen and time/temperature control for safety (TCS) foods must be received at 41°F or below or 135°F or above. (Look for signs of large ice crystals in the packages of frozen products). If you see these, do not accept the food if you suspect temperature abuse.
- All foods, while being stored, prepared, displayed, served or sold in food establishments or transported need to be protected against cross-contamination.
- Cross-contamination occurs when raw TCS foods or soiled or adulterated foods contact or drip on other foods. Food in transport should be covered and protected.
- Gloves do not provide special protection against cross-contamination.

Reference: *Idaho Food Code*, Chapter 3