



## Section C Specialty Foods

Much of our everyday food supply comes from the world market. In addition, immigrants from all over the world continue to come to America in large numbers. As their communities grow, so do the number of restaurants that serve those populations.

At the same time, mainstream America is discovering the interesting and unique cuisines of the many countries that are represented here, and in turn, restaurants that were once limited to neighborhoods heavily populated by a particular ethnic group can now be found side by side with more traditional American restaurants.

The more the Environmental Health Specialist (EHS) knows about ethnic foods, the more confident and better equipped you will be to fulfill your responsibility of keeping the foods we eat safe, and the establishments that serve them in compliance with the current Georgia Food Service Rules and Regulations Chapter 290-5-14.

Environmentalists are encouraged to review information within the Training CD entitled, “Ethnic Foods Meeting the Challenge” which is an information and training tool for U.S. food inspectors and regulators of food markets, restaurants, food service or food sales establishments. This Training CD was created through a cooperative agreement between the USDA and the Georgia Food Safety Task Force. The following excerpts from the Training CD will help EHS to become familiar with ethnic foods of which they may encounter during food service inspections:

### **A. African:**

Traditional African cuisine is broad and varied by region. Most countries rely heavily upon the use of starches such as corn meal, teff (a flour made from millet) or cassava flour. Stews and soups both with and without meat are popular, as well as roasted meats and seafood, native fruits and vegetable dishes. African immigrants who have settled in the U.S. come from all over the continent. However, the majority of restaurants featuring native African food tend to be of Nigerian or East African origin, particularly Ethiopian and Somalian. According to the 2000 Census, over 881,000 African-born immigrants live in the U.S.

#### **1. African – Bushmeat:**

##### **Background:**

Bushmeat is a popular food in many parts of Africa. It is also commonly eaten in rural communities in Asia, South America and the Middle East. The term “bushmeat” refers to any wild animal that is killed for food and includes



antelope, snake, crocodile, mongoose, squirrel, porcupine, monkey, elephant, fish, rodents, gorillas and other animals. It is reported that 5 million tons of bushmeat is removed annually from the Congo and the Central African Republic. The import of bushmeat is banned in the United States, but is often illegally smuggled in baggage and as freight on air flights that originate in African countries. Airport inspectors across the U.S. have reported finding bushmeat as the demand for this commodity increases. At retail, illegally imported bushmeat has been found in African and exotic food markets. It has not been seen as often in restaurants, but inspectors should be familiar with its appearance and the regulatory concerns in the event that the trend continues to grow in this country. Bushmeat is also a problem in the United Kingdom (U.K.). They estimate that 200,000 tons are brought into the country each year.

Preparation Procedure:

Bushmeat is usually prepared by skinning and roasting or smoking the meat over an open fire. In most cases the animals are gutted, but uneviscerated fish has been found in the U.S. Many in the African community believe that the smoking process preserves the meat and renders it safe for overseas shipment. While some bushmeat is processed in plants approved by local governments in Africa, much of it is processed in rural areas by methods considered unsafe by American regulatory standards.

Foodborne Illness Risk Factor – Food from Unsafe Sources:

It is illegal to import bushmeat into the U.S. According to the CDC, the illegal importation of bushmeat presents considerable risks to human, wildlife and livestock health. Preparation methods such as smoking, salting, or brining may slow down bushmeat's decay, but may not render bushmeat free of infectious agents that could cause illness, disease and even epidemics in humans.

Many agencies may have jurisdiction over this product. The Animal and Plant Health Inspection Service (APHIS) can detain a product if the animal or meat threatens domestic livestock and poultry. U.S. Fish and Wildlife has regulatory authority under the Endangered Species Act to prohibit the importation of bushmeat that comes from an endangered species. Furthermore, the Lacey Act gives U.S. Fish and Wildlife the authority to prohibit importation of species that are injurious to U.S. Wildlife. CDC has authority under the Public Health Service Act to prohibit the importation of animals and animal products and to regulate foreign quarantine to prevent the introduction of communicable diseases that threaten public health.

Currently, CDC bans the importation of primates, African rodents, civets and Asian birds to protect against Ebola, Simian Immunodeficiency Virus (SIV), Monkeypox, Severe Acute Respiratory Syndrome (SARS) and Avian Influenza.

Control Measures:

- Recognize that bush meat is a growing problem and be on the alert for its presence in retail food stores and food service establishments.
- Verify that suspicious meats are from approved sources through labeling and invoices.
- If the source cannot be ascertained, discard the product and notify the appropriate agency that may also have jurisdiction.

**2. African - Enjera (also known as “Injera”):**

Background:

Enjera or Injera is a pancake-like bread made out of teff (an Ethiopian grain) flour. It is typically eaten in Ethiopia, Somalia and Eritrea. Enjera is not only a type of bread, but is also an eating utensil, since traditional Ethiopian dining does not include the use of spoons, knives or forks. Prepared foods are served on top of a large, round piece of enjera. Additional pieces of enjera are served on the side. Small pieces of the bread are torn and used to scoop up the food for eating.

Preparation Procedure:

The preparation of enjera takes place over several days because it involves a fermentation process. Once the teff flour is mixed with water, it is placed in a bowl covered with a dishtowel and left at room temperature until it bubbles and turns slightly sour. This may take as long as 3 days. The finished, fermented mixture has the consistency of a very thin pancake batter.

Once the batter is ready, it is poured into a hot, large, round skillet and cooked briefly until air holes form and the edges lift from the pan. It is only cooked on one side. A variety of stews (both meat and vegetable), side vegetables and salads are ladled onto the enjera for serving. After the foods are eaten with the Enjera that is served on the side, the enjera bread that lines the tray is eaten.

This is the tastiest part, because the enjera on the plate has soaked up the juice and flavor of each dish.



Enjera may also be cut or torn into small pieces and added to soups.

Foodborne Illness Risk Factor – Improper Holding Temperatures:

After preparation, enjera is moist and has a lemony smell. Since it is made from flour, *Bacillus cereus* is a possible hazard with this product. If operators choose to hold this product at room temperature, they must provide documentation that shows that the water activity is below .85, or the pH is 4.6 or below or that the combination of the two factors renders the product non-potentially hazardous. They also have the option to use time only and serve or discard the product within 4 hours.

Control Measures

- Verify that enjera is held at 41°F or below or that time as a public health control is implemented with the proper documentation.

**3. African – Goat:**

Background:

Goat is a common meat popular among many ethnicities, including African, Caribbean, Hispanic, Greek and Indian populations. Meat and Poultry inspection falls under the purview of the United States Department of Agriculture (USDA). Through cooperative agreements, this responsibility may be transferred to States but any meat processed under State inspection is limited to intrastate commerce.

Preparation Procedure:

Goat is prepared in a variety of ways, including roasted, braised, curried and in soups and stews.

Foodborne Illness Risk Factor – Food from Unsafe Sources:

While most goat meat is purchased from state or USDA approved plants, some restaurants and markets purchase goat meat from unapproved sources. Others may purchase a live goat from an unapproved source and process it themselves. Still others raise their own goats at home and slaughter and process them as needed. There have been cases in which inspectors have discovered whole animals, frozen with fur and hooves intact.

Any goat meat that is not from a USDA or state approved source is illegal and cannot be served in restaurants or sold in markets.



Control Measures:

- If goat is on the menu or in a meat display case, ask to see the packaging or invoice in order to ascertain that it comes from an approved source.
- If the whole skinned goat carcass is in the facility, check for the USDA stamp to verify that it is from an approved source.
- Verify that time/temperature controls appropriate for goat are used.

**4. African – Halal:**

Background:

Halal is a term from the Quran, the holy book of the religion of Islam. It refers to anything which is lawful or allowed according to Allah, or God. It also refers to the Islamic set of dietary laws which regulate the preparation of food. Devout Muslims are only allowed to eat Halal food.

Foods that are considered naturally halal and permissible to eat without special preparation include:

- Milk (from cows, sheep, camels, and goats)
- Honey
- Fish
- Plants which are not intoxicants
- Fresh or naturally frozen vegetables
- Fresh or dried fruits
- Legumes and nuts like peanuts, cashew nuts, hazel nuts, walnuts, etc.
- Grains such as wheat, rice, rye, barley, oats, etc.

Animals such as cows, sheep, goats, deer, moose, chickens, ducks, and game birds are also Halal, but they must be slaughtered according to Islamic rites in order to be suitable for consumption.

The primary halal concern for U.S. food inspectors relates to meats.

Preparation:

Halal laws require that animals be slaughtered in a precise manner by individuals who are authorized to do so. The procedure involves slitting the animal's throat in such a way that the three main blood vessels are cut, while pronouncing the name of Allah or reciting a blessing which contains the name of Allah.



Regulatory Concern – Honest Presentation:

(Food safety concerns for halal foods are the same as they are for non-halal foods. The following concerns relate to economic fraud.)

Source - Markets that sell halal meats purchase their products only from processing sources that have been sanctioned by an official halal accreditation source. The processor is issued a certificate by the accreditation organization in the region or state. Only products that meet the strict halal standard can be labeled as such.

Storage Practices - No halal food can be stored with non-halal foods. The primary concern is whether or not markets and restaurants selling or serving halal foods are honestly presenting them. In other words, establishments that are not exclusively halal may be storing halal meats with meats that have not been processed according to halal methods.

Control Measures:

- Look for the halal certificate in markets that indicate they are a halal market (usually posted on a wall or other visible location).
- If the facility indicates that only halal foods are sold there, then ask to see copies of the invoices, which should indicate the distributor or processor who sold the products to them. A traceback can be done to determine if the meats came from an approved halal source.
- Check packaging for halal labels indicating approved source.
- Check to be sure that halal products are not being stored with non-halal products.

Additional Concern – Thermometer Use:

When testing the temperature of halal food items, a thermometer that has not been used on non-halal products must be utilized. Using a thermometer that has been used for non-halal products would be considered contamination (economic adulteration) and the establishment would be required by Islamic law to throw it away. Some regulatory agencies require halal establishments to provide their own thermometers which must be approved by the regulatory authority. Each inspector should be aware of their agency's protocol for halal foods and act accordingly.



**5. African – Kitfo:**

Background:

Kitfo is a traditional Ethiopian dish consisting of finely minced lean beef mixed with seasonings and served raw or undercooked.

Preparation Procedure:

Kitfo is prepared by melting butter and adding spices such as cardamom, fenugreek, ginger, cayenne pepper, chili pepper, and salt. The spice mixture is then stirred into the minced, raw, lean beef and served with additional powdered seasonings or sauces.

Typical side dishes served with kitfo include yogurt, ayeb (a mild cheese similar to cottage cheese), and fitfit (enjera bread soaked in a sauce made from beef juices).

Foodborne Illness Risk Factor – Inadequate Cooking:

Kitfo is raw or undercooked beef and therefore has not been processed to eliminate pathogens such as E. coli or salmonella. Any establishment serving raw, undercooked or not otherwise processed meats must inform customers of the increased risk associated with eating such foods. This is usually done through a consumer advisory in the form of a brochure, deli case sign, wall sign, table placard or menu advisory.

Control Measures:

- Confirm that the establishment has a consumer advisory that discloses to consumers that the menu item is raw and warns the consumer of the risk of consuming this product.

**B. Caribbean:**

According to the 2000 U.S. Census, over 3 million Caribbean-born people live in the U.S. They come from Jamaica, Barbados, Aruba, Antigua, the U.S. Virgin Islands, Grand Cayman, St. Marten, St. Croix and other islands. Caribbean cuisine is a combination of African, Spanish and French cooking influences. These traditions were brought from the many homelands of the region's population. In addition, the Caribbean people have created a wealth of unique dishes based on native foods.



## 1. Caribbean – Ackee:

### Background:

Ackee is the national fruit of Jamaica and is enjoyed as a prepared breakfast dish or as a lunch or dinner entrée. When the fruit turns ripe on the tree, it opens to reveal three large black shiny seeds surrounded by a bright yellow flesh. The yellow flesh around the seed is edible, but only after the fruit has opened naturally and has not yet become overripe.

Except for the yellow flesh surrounding the ackee seeds, the rest of the fruit contains toxic levels of hypoglycin A and B, which can cause mild to severe vomiting, convulsions, coma and even death in some cases. The yellow flesh itself is also toxic prior to ripening. Once the fruit is ripe and has opened, the levels of hypoglycin in the flesh rapidly diminish to non-detectable levels, making it safe for consumption.

### Preparation Procedure:

When traditionally prepared, the ackee is boiled, drained and simmered in oil with salted dried codfish, onions, peppers and spices. It is considered a delicacy by many, and has the look and consistency of scrambled eggs.

### Foodborne Illness Risk Factor – Food From Unsafe Sources:

Ackee imports were banned in the U.S. for nearly 30 years before the FDA lifted the ban in 2000, after determining that safe processing methods had been developed by several companies. Imports of canned ackee are now allowed, but only from approved processing companies. It remains illegal to import fresh ackee. It is also illegal to sell or commercially serve ackee grown in the U.S.

In a number of cases, it has been discovered that unapproved companies are illegally exporting ackee into the U.S. by falsely labeling canned ackee as callaloo, breadfruit or ginger beer. Specific examples of false branding are canned ackee labeled as:

- Montego Brand Jamaican Callaloo in Brine
- Tropic Ginger Beer, Product of Jamaica
- Tropic Banana Fruit



Control Measures:

- Confirm the source of the ackee by checking labels to be sure the canned ackee is from one of the processing companies approved by the FDA. For a current list of approved companies, go to [www.accessdata.fda.gov/cms\\_ia/country\\_JM.html](http://www.accessdata.fda.gov/cms_ia/country_JM.html)
- Periodically check FDA import alerts for any change in the import status of ackee.
- If there is product that is suspicious for misbranding, have the operator randomly open cans to confirm that the product label matches the contents of the can.

**2. Caribbean – Bammy:**

Background:

Bammy is a pancake shaped bread made with cassava flour. It may be eaten at any meal, and is commonly served with fried fish. Because it is very labor intensive, most restaurants or markets serving bammy purchase pre-processed cassava flour or the finished product from distributors. However, some establishments still make bammy from scratch, making the flour from fresh, grated cassava root, which poses a potential health risk.

Preparation Procedure:

To prepare bammy from scratch, the cassava root is grated, dried and then ground into flour. The cassava flour is then mixed with water and salt to form a thick mixture. The mixture is formed into cakes and then grilled or deep-fried. In some instances, the cooked bammy is lightly grilled, soaked in coconut milk and then re-grilled or fried until golden brown.

Regulatory Concern – Chemicals (Toxins):

The cassava root contains toxins that produce cyanide. If not properly processed, the cassava flour can be severely toxic. The process for making flour from cassava root is as follows:

1. Finely grate the cassava root
2. Press all of the liquid out of the pulp
3. Air or heat dry the pulp until it is completely dry
4. Sift into flour



Control Measures:

- Ask the establishment how the bammy is prepared.
- For commercially processed bammy, confirm that it is from an approved source by checking packaging and invoices.
- If the establishment makes the bammy completely from scratch, ask them to describe the flour-making process from start to finish to ascertain that they are following the proper procedure listed above.

**3. Caribbean – Boiled Bananas, Yams & Dumplings:**

Background:

Boiled bananas, yams and flour dumplings are a common side dish in Caribbean restaurants. The yams, while similar in size and color to a potato, are nuttier in flavor and should not be confused with the Southern sweet yam or sweet potato. The trio is often served at breakfast but may also be served as side dishes at any meal.

Food Preparation Procedure:

Green bananas and yams are simply boiled in water and served as is. Dumpling preparation is also very simple. The dough is made from flour, salt and water, shaped into flat ovals about 1” thick and 3” wide and boiled for about 25 minutes.

Foodborne Illness Risk Factor– Improper Holding Temperatures:

When bananas and yams are cooked, the chemical make-up changes, resulting in products that are potentially hazardous, meaning that they need time and temperature control for safety. Because the dumplings are a flour-based product, they too must be properly held to prevent microbial growth and toxin formation. In many Caribbean facilities, these products are often cooked and allowed to sit at room temperature, which poses a health risk.

Control Measures:

- Verify that dumplings, yams and bananas are cooked and served immediately, hot held at 135°F or above or held for four hours or less, using time as a public health control with the proper documentation.

#### 4. **Caribbean – Beverages:**

##### Background:

Many Caribbean food establishments carry a variety of traditional drinks. Among them are Irish moss, sorrell, ginger beer, coconut water and carrot juice. Some establishments may sell commercially produced drinks, but many proprietors prefer to make their own in-house.

##### Preparation Procedure:

**Irish Moss** – A cold beverage made by mixing milk, limejuice, dried seaweed, sugar, gum arabic, isinglass (a gelatin made from dried fish bladders), linseed, spices that may include cinnamon, nutmeg, rosewater, vanilla and sometimes ginger. All of the ingredients except milk are boiled to a thick consistency. Then the milk (usually condensed) is added.

**Sorrell** – A cold beverage made with water, sorrell (a dried flower petal), ginger root and sugar. It is dark in appearance and is prepared by boiling water with ginger root, pouring it over the sorrell petals, allowing it to steep, and then adding sugar.

**Ginger Beer** – A cold beverage made by mixing boiling water, limejuice, ground ginger and sugar. It has a clear-like appearance with a light brown residue at the bottom.

**Coconut Water** – Liquid compressed from the meat of the nut; not to be confused with coconut milk or coconut cream.

**Carrot Juice** – A cold beverage made by mixing water, carrot juice and sometimes sugar.

##### Foodborne Illness Risk Factor – Food From Unsafe Sources:

These beverages pose no health risk if kept refrigerated. However, once a product is packaged and placed into a display cooler, it must be labeled according to the Food and Drug Administration (FDA) standards. Many Caribbean food establishments that make the beverages in-house do not label them.

In addition, if the proprietor is using natural sorrel or natural Irish moss as a beverage ingredient, it must be confirmed that they are being obtained from a reputable source. Some establishments purchase these ingredients in bulk in packages with no labeling.



Additional Regulatory Concern - False Health Claims:

Some establishments may have signage that advertises the beverages as providing certain health benefits such as energy boosting, immune system enhancement, virility inducing, etc. If claims are made that the drink can be used in the diagnosis, cure, mitigation, treatment or prevention of disease in man or animals, it may fall under the definition of drug or health claims under the Nutrition Labeling and Education Act (NLEA), and the Food and Drug Administration (FDA) should be contacted for verification.

Control Measures:

- Check display coolers to make sure each beverage is labeled with the following information:
  - Name of beverage
  - Ingredients Quantity
  - Nutritional information
  - Manufacturer's name and address (if made on the premises, the name and address of the manufacturer should be that of the restaurant or store)
- If beverages are prepared in-house using natural sorrell or Irish moss, check packaging or labeling to ascertain whether the ingredients are obtained from a reputable source. If they have purchased it in bulk with no labeling, verify where they purchased it through invoices or receipts. If there is concern that the vendor may not have obtained the products from a reputable source, consult the agency that has jurisdiction over the product.
- Check beverages and in-store signage to be sure unsubstantiated health claims are not being made.

**5. Caribbean – Cassava:**

Background:

Cassava is a tropical root vegetable, also known as manioc, yuca and yucca. It should not be confused with another plant called yucca, which has spiky leaves and is not eaten. The tuber is long, irregularly shaped, about 2-3 inches in diameter and 6-12 inches in length. A brownish layer that resembles bark covers its white flesh. There are two main varieties – sweet cassava and bitter cassava.

In addition to wide use in the Caribbean and South America, the cassava is also used as a staple food in Africa and Asia and may be found on the menus of those types of restaurants.



Preparation Procedure:

Sweet -- This variety is the most widely used in cooking. Like a potato, it can be boiled, baked or fried.

Bitter – The bitter variety is poisonous when raw and must undergo a purification process before it can be used. It is used mostly for making flour, tapioca and starch. The flour is called farofa and is bland much like corn meal and wheat flour. The flour can be mixed with water and the dough cooked on a large griddle to make large cassava flat breads. Gelatinized pellets of cassava are called tapioca, which is mixed with sugar and vanilla flavoring and used in desserts. The purified starch can be used as a thickening agent.

The proper process for making flour from bitter cassava root is as follows:

1. Finely grate the cassava root
2. Press all of the liquid out of the pulp
3. Air or heat-dry the pulp until it is completely dry
4. Sift into flour

Regulatory Concern – Preparation Methodology / Food From Unsafe Sources:

Preparation Methodology:

The bitter cassava root contains linamarin and lotaustralin, which are toxic glucosides that form cyanide. If not completely removed, these toxins can cause severe illness and even death.

Food From Unsafe Sources:

Most establishments purchase cassava in a prepackaged, commercially produced form. It is important that if purchased prepackaged, it comes from an approved source that has properly removed the toxins.

Control Measures:

- If a menu item lists cassava as an ingredient, ascertain the type of cassava used and verify that it is from an approved source.
- If bitter cassava is being utilized, verify the preparation methodology to ensure toxin removal.



## **6. Caribbean – Conch:**

### Background:

A conch is a large marine snail and has been a popular Caribbean staple for centuries. Its shell has a brightly colored pink lip, which can reach a length of 12 inches. Its taste is somewhat sweet and its flavor has been compared to that of clams.

Conch is served as an appetizer, in soups and stews, as a side dish and as a main course.

### Preparation Procedure:

Conch may be prepared in a variety of ways, including conch chowder, conch Creole, fried conch, conch fritters, in salads and grilled or boiled.

Regardless of the type of preparation, the meat must first be tenderized, as its tough connective tissue is very difficult to chew. The best way to do this is with a heavy meat mallet or a commercial meat tenderizer.

### Foodborne Illness Risk Factors – Contamination / Cross Contamination:

A significant number of restaurants use improper methods for tenderizing conch, such as using an ordinary steel claw hammer to pound the meat, thus putting it at risk for contamination. There have even been cases in which inspectors have observed workers taking the conch outside behind the restaurant and pounding it with a hammer with no sanitary precautions.

The proper way to tenderize conch is with a meat mallet or specially designed conch mallet on a restaurant-grade cutting board. Some restaurants use mechanical tenderizers such as those found in fish markets. In addition, powdered tenderizers similar to those used for other meats are now commercially available. Operators also have the option of buying conch already tenderized.

### Control Measures:

- Check to ascertain the method for tenderizing the conch.

If the establishment is using an improper method of tenderization, advise them on proper ways to do so.



## **7. Caribbean - Escovitch Fish:**

### Background:

In traditional Caribbean food establishments, escovitch fish is often prepared and left at room temperature for long periods of time. The practice most likely evolved because many food establishments in the Caribbean lacked electricity to hot hold or refrigerate food items. In native countries the dish may be left at room temperature for days or even weeks. It is believed that the inclusion of vinegar in its preparation prevents spoilage.

### Preparation Procedure:

Escovitch fish is a main course dish made with red snapper, onions, peppers, spices, oil and vinegar. Prior to preparation, the fish is generally kept frozen or placed in a refrigerated container of vinegar and ice. To begin preparation, the fish is washed in a fresh vinegar solution, then scaled, gutted and trimmed. It is then fried in hot oil until done. The other ingredients are sautéed in hot oil and vinegar. Once cooked, the mixture is poured over the fish and the dish is held until served.

### Foodborne Illness Risk Factor – Improper Holding Temperatures:

Escovitch fish is typically held at room temperature after preparation. Although regulations require hot holding for this type of food, native proprietors are reluctant to do so. Patrons generally prefer to eat it at room temperature, and operators assert that hot holding can result in the dish becoming dry and tough.

In addition, because the dish is traditionally held at room temperature in Caribbean countries, proprietors don't understand why it is not allowed under U.S. regulations. Some contend that the vinegar added during the preparation of the fish preserves it. Because the dish is very popular, improper holding is an extremely common regulatory issue in facilities serving this product.

### Control Measures:

There are a number of options available to an operator to manage escovitch fish safely. Ensure that the facility handles the product in one of the following ways:

- Hot held at 135°F or above;
- Held for four hours or less using time as a public health control with the proper documentation; or



- Documentation that the preparation renders the product non-potentially hazardous because it results in the escovitch fish having a pH of < 4.2 or a water activity (Aw) of .85 or below. A variance must be in place and the food product prepared under a HACCP plan.

Additional Considerations:

Food establishments often take leftover escovitch fish and use it to prepare a dish called brown stew fish. If the original dish wasn't held at the proper temperature, the new dish may contain harmful pathogens or toxins. Therefore, if escovitch fish was not properly hot held or there is no documentation to verify that the fish is not potentially hazardous, it cannot be reused in the brown stew fish.

If previously hot held escovitch fish is reused for brown stew fish, it must be cooled from 135°F to 41°F within a total of six hours, provided that it is cooled from 135°F to 70°F within the first two hours.

**8. Caribbean – Patties:**

Background:

The Jamaican patty, similar to an English meat-pie or a Spanish empanada, contains a tasty chicken or beef filling seasoned with island spices and baked within a flaky crust. In Jamaica, patties are the fast food of choice, outselling hamburgers and pizzas because they are tasty, filling and easy to prepare and eat. It is commonly eaten at lunch but may be served at any meal.

Preparation Procedure:

The ground meat is sautéed with special seasonings and then baked in a firm, flaky pastry crust. Some restaurants add the meat to a mixture of mashed cooked vegetables (potatoes, onions, carrots) before filling the pastry shell.

Foodborne Illness Risk Factors – Food From Unsafe Sources / Improper Holding Temperatures:

Food From Unsafe Sources:

Most Jamaican food establishments don't make their own patties because it is too labor intensive. Many establishments order them from commercial processors, but a significant number have been found to purchase them locally from unlicensed vendors, so it's important to check the source.





A restaurant is permitted to make and serve its own patties, but in order to sell patties to other restaurants; it must have a permit to be a wholesale processor of the product.

Even if a local processing plant is licensed, it is important to make sure the patties are transported in approved containers and in an approved manner. Local producers have been known to package patties in reused cardboard boxes. Since local processors of meat products are not required to use refrigerated trucks to transport their products to retailers, the temperature of the patties should be carefully checked at the time of delivery and rejected if above the required cold holding temperature of 41°F or below.

#### Improper Holding Temperatures:

Another concern with patties is holding temperatures. Patties, whether vegetarian or containing meat, must be properly held after preparation. Operators will sometimes place patties in cases that are designed to hot hold foods, but will not have the units turned on, or have the units' temperature high enough to safely maintain the product.

#### Control Measures:

- Determine the origin of the patties being used in the establishment, whether they are commercially processed or made in-house.
- If they purchase them commercially, ascertain that they are from an approved vendor by reviewing the invoice and examining the product and packaging.
- Patties containing meat shall have a USDA or State Department of Agriculture emblem on the package. State inspected meat or poultry cannot be shipped across state lines.
- If the patties are being purchased from a local processor, you may need to follow up with the processor to be sure the patties are being prepared in an approved, licensed processing plant and that they are being properly shipped.
- Make sure any cooked patties that are not being served immediately are continuously hot held at 135°F or above.
- If the filling for patties has been pre-cooked in-house, the patties must be reheated to 165°F for hot holding and then held continuously at 135 °F, or held for no more than 4 hours with the proper documentation. After 4 hours, any remaining patties must be discarded.



- If packaged, commercially processed pre-cooked patties are used, they must be reheated to 135°F for hot holding, or reheated to any temperature if they are for immediate service.

## 9. **Caribbean - Pickled Products:**

### Background:

Many Caribbean restaurants use pickled meats in a variety of dishes. The meats include fish, pork (feet, tails, ears, knuckles) and beef. The beef and pork products usually come in five-gallon plastic buckets. Pickled fish may come in a five-gallon bucket or sealed, plastic packaging.

### Preparation Procedure:

Most pickled meat and fish products are used in soups or as ingredients in sauces and other recipes.

### Foodborne Illness Risk Factor – Improper Holding Temperatures:

Many restaurants store pickled meat and fish products at room temperature, believing them to be safe because the product is pickled. The amount of salinity determines whether it can be held at room temperature. Some pickled products need to be refrigerated, so it is important to check each product.

All pickled meat product containers must bear a label that specifies that the product is packed in brine. If there is a question of whether the product is shelf stable, the manufacturer should be contacted for verification that the product does not require refrigeration.

Some facilities may attempt to pickle their own products in-house. Due to the lack of strict control at retail, any pickling of potentially hazardous products requires a variance and must be performed under a HACCP plan if they are to be held at room temperature. If the pickled products are maintained at 41°F or below, then there are no additional regulatory requirements for these products.

### Control Measures:

- Check label instructions on all pickled meats and fish to determine whether the product needs to be refrigerated.
- If unsure whether the product should be refrigerated, require the product to be refrigerated until its status can be verified with the manufacturer or the facility can provide documentation from the manufacturer stating otherwise.



- For potentially hazardous products pickled in-house, verify that a variance has been obtained from the Health Authority and the facility is operating under a validated HACCP plan.

## 10. **Caribbean – Saltfish:**

### Background:

Saltfish is a popular ingredient in a variety of Caribbean dishes. Quite simply, it is a salted, dried fish, usually cod.

### Preparation Procedure:

The most popular dish in which saltfish is used is Jamaica’s national dish “ackee and saltfish”, but you may also find the following saltfish dishes on a Caribbean menu: saltfish pie, saltfish cakes, fried saltfish, saltfish with pigtails, saltfish stew, saltfish patties and more.

Saltfish is always rehydrated before it is used. This is done by soaking the fish in water, usually for a period of hours or even days, or boiled for a period of hours so that the fish becomes a moist product again. Only after it has been rehydrated is it added as an ingredient to menu items. It may be used immediately after rehydrating or held for a period of time before use.

### Foodborne Illness Risk Factor – Improper Holding Temperatures:

Saltfish in its dehydrated form is usually not held in refrigeration because its water activity is below .85. It is a salted product that has been soaked in a brine solution and then completely air-dried. As long as it remains in a dried state, it is not potentially hazardous.

Many food establishment proprietors believe that, because it is soaked in a brine solution and dried, saltfish is not hazardous during any part of the prep process, including after rehydration and use in dishes. This is a false assumption. Once saltfish is rehydrated, it is subject to the same handling and holding requirements as non-dehydrated fish.

### Control Measures:

- Fish must be cooled from ambient temperature to 41°F within four hours of rehydrating.
- Verify that the rehydrated saltfish is maintained at 41°F prior to cooking.

- Once cooked, saltfish dishes may be handled in one of the following ways:
  - o Hot held at 135°F or above;
  - o Held for four hours or less using time as a public health control with the proper documentation, then discarded if not consumed; or
  - o Cooked to order and immediately served, or properly cooled from 135°F to 70°F within two hours and then from 70°F to 41°F in the remaining time, not to exceed a total of six hours for the entire cooling procedure. Once the product is cooled, it must be held at 41°F or below until ordered, at which time the product can be reheated and served immediately to the customer.

### **C. Chinese:**

Chinese food is one of the most popular ethnic cuisines in America. It can be found in every part of the country, in urban centers as well as rural areas. There are several different styles of Chinese cooking, based on the regions from which they come. They include Cantonese, Hunan, Mongolian, Szechuan and Fukien. With over 1.5 million native-born Chinese people living in the United States, there are many restaurants that cater almost exclusively to immigrant populations.

#### **1. Chinese - 1000 Year Old Eggs:**

##### Background:

The 1000 year old egg is a duck or chicken egg that has been preserved by soaking the egg in a brine of salt and lye. Also known as ‘century egg’ or ‘pidan’, it is considered a delicacy in China and among Asian populations in the U.S.

Although the egg is not 1000 years old, it looks as though it might be. Once peeled, the egg white has a gelatinous consistency, is dark brown, somewhat translucent and has very little taste. The yolk is pale to dark green, has a creamy consistency and is said to have a cheese-like taste.

##### Preparation Procedure:

The most common method for preserving a 1000 year old egg is by soaking it in a brine and lye solution for about 10 days and then wrapping it in plastic and allowing it to age from several weeks up to several months. The



preserving process is accomplished by introducing alkaline hydroxide ions and sodium into the egg, thus changing its consistency.

For centuries, the traditional way of preparing the eggs involved packing them in a mixture of clay, ash, salt, lime and rice straw and burying them anywhere from 100 days to several years. Modern variations on the process include tea and lime as ingredients in the soaking solution.

Asian restaurants and markets in the U.S. do not make their own 1000 year old eggs. Instead, they are imported ready-to-eat from Asia, namely China and Hong Kong. While some establishments boil the eggs before serving, most people prefer to eat them uncooked. The eggs are usually served with soy sauce, salt, pickled ginger and/or tofu. They can be eaten as an hors d'oeuvre or as a side dish.

#### Foodborne Illness Risk Factors – Improper Holding Temperatures / Food From Unsafe Sources:

##### Improper Holding Temperatures:

Laboratory testing has found that the water activity of 1000 year old eggs is above .92 and that the pH is above 9.0. Based on these factors, if an operator wants to hold this product at room temperature, he must have a product assessment performed on the eggs to prove that they are safe to hold above 41°F.

##### Food from Unsafe Sources:

Some Chinese companies package their 1000 year old eggs with labeling in Chinese only. Food items imported into the U.S. must either be labeled in English or in English and Chinese and must contain the name of the food, ingredients, quantity, nutritional information (unless exempted) and the manufacturer's name and address.

##### Control Measures

- Verify that 1000 year old eggs are held at 41°F or below or documentation is provided that proves that the product is safe to hold at room temperature.



- Confirm that the product label is in English or in English and Chinese and includes the following information:

Name of food  
Ingredients Quantity  
Nutritional information (unless exempted)  
Manufacturer's name and address

## **2. Chinese - Animal Penises and Testicles:**

### Background:

The Chinese have a long tradition of making sure no part of an animal goes to waste. In the case of animal penises and testicles, they are not only served as food, but are highly prized by many as a virility enhancement. Types of animal penises or testicles that may be found on Chinese menus include cow, deer, goat or pig.

### Preparation Procedure:

Penises and testicles are prepared in a variety of ways, including pickled, baked, fried, boiled, grilled, in soups and with noodle dishes.

### Foodborne Illness Risk Factor and Regulatory Concern – Food From Unsafe Sources / Improper Holding Temperatures:

Like any meat item, penises and testicles are USDA regulated. They are not prohibited from sale as long as they come from a USDA approved source. In addition, they must be stored and held before, during and after preparation at required temperatures to prevent bacterial growth and in a manner to prevent cross contamination.

### Control Measures:

- Ask to see the invoice or receipt to ascertain that the food item is from an approved source.
- Ensure that the items are being properly stored and held at 41°F or below.

## **3. Chinese – Barbecue:**

### Background:

Chinese barbecue is very different from what most Americans think of as barbecue. First, the meats are hung on hooks and roasted, as opposed to



being grilled or smoked. Secondly, Chinese barbecue sauce is very different from western barbecue sauces, which are often tomato or mustard-based. There are many variations of Chinese barbecue sauce, but the basic ingredients are soy sauce, vinegar, hoisin sauce, sesame oil and spices such as garlic, ginger and chile peppers. Sauces range from sweet to spicy. The main types of meats used in Chinese barbecue are pork (spareribs and side meat), duck and chicken, although some restaurants have been known to offer barbecued fish, squid, quail and intestines.

Preparation Procedure:

Prior to cooking, the meats are rubbed with spices, placed on hooks and then basted with a boiled mixture (salt and vinegar for pigs; honey and vinegar for poultry). For ducks, the bottom of the carcass is pinned to hold the seasonings inside of it. Next, the products are left to dry at room temperature for anywhere from several hours to several days. The purpose of this is to dry the skin so that it is crispy when cooked.

For cooking, the meats are placed in a roaster or oven. Poultry is usually cooked whole. Pork is cooked whole and in pieces, depending on the cut of meat being prepared. Prior to cooking, pork pieces are basted in a tomato sauce and sugar mixture, which gives it a red color. Once the meat is cooked, it is usually displayed on hooks in a glass case where customers can see the available meats.

Foodborne Illness Risk Factor – Contamination / Cross Contamination / Improper Holding Temperatures / Food From Unsafe Sources:

Contamination:

Most establishments receive ducks, chickens and pigs to be used for barbecuing as whole carcasses that are eviscerated but with heads and feet intact. The carcasses are often hung in the refrigerator until ready to be cooked. Establishments must hang the meats away from other products to avoid contamination from dripping blood.

In addition, establishments will often hang various types of meat carcasses together because of limited space. The required cook temperature is higher for poultry than it is for pork. Because of this, ducks/chickens must be stored separately from pork to avoid cross-contamination.

Cross Contamination:

Barbecued duck is served whole, halved or in quarters. It is essential that any cutting board used to cut poultry and other meats is of an approved grade such as hard maple or plastic. Some establishments make their own cutting

boards out of porous wood such as pine. These cutting boards may not be used because they cannot be properly cleaned, and can harbor pathogens that may contaminate food when it is placed on its surface. In addition, employees must wear gloves while chopping or otherwise handling meats.

#### Improper Holding Temperatures:

Some establishments have a tendency to hold raw, marinated meats at room temperature for long periods of time in order to dry the skin before cooking. It has been observed by regulators that establishments can successfully dry the meats in the refrigerator, thus invalidating any argument that the only way to dry the meats is by leaving them at room temperature for long periods of time.

A more serious problem lies in holding cooked barbecued meats at room temperature. Most Chinese establishments that serve barbecue have a special display case where customers can see the prepared meats. Proprietors generally prefer to hold the meats at room temperature, which would allow microbial growth on the products. Any establishment that chooses to hold the meats at a temperature lower than 135 °F must use time as a public health control or provide documentation that shows that the products are safe to hold at room temperature.

#### Food From Unsafe Sources:

Some establishments may purchase animals for barbecuing from unapproved sources. All pig carcasses must have a USDA or state stamp on the carcass. Poultry must have USDA labeling or equivalent state labeling on the box or package in which they are delivered.

#### Control Measures:

- Check to ascertain that all refrigerated raw meat products are being hung in an area where other products cannot be contaminated by dripping blood or other contact.
- Verify that raw pigs and poultry are being held separately in the refrigerator.
- Observe that cutting boards are made from an approved material such as maple or hard plastic.



- Confirm that cooked barbeque is maintained in one of the following ways:
  - o Hot held at 135°F or above, (*Note: Some establishments may want to hold a sample of each food item in the display case **for display only** so customers can see what they have, but hold the foods that are to be served in a hot holding case at the required temperature.*)
  - o Held for four hours or less using time as a public health control with the proper documentation, which would allow the meat to be held out of temperature control for no more than 4 hours during which time the product must be served, sold or discarded,
  - o Properly cooled and then held at 41°F or below until ordered, at which time the product is reheated to any temperature and served immediately to the customer, or
  - o Held at room temperature based on laboratory analysis that shows that the product (whole and cut carcasses) after cooking no longer require time/temperature control for safety. A variance must be in place and the products must be prepared under an approved HACCP plan.
- Verify that products have been obtained from an approved source.

#### 4. Chinese – Chitterlings:

##### Background:

Chinese cuisine is well-known for not wasting any part of an animal. It is not considered unusual to prepare feet, tails, ears, tongue, head and most of the internal organs of a variety of animals. While most Americans associate the term ‘chitterlings’ with Soul Food, chitterlings (pig small intestines) are a very popular Chinese dish as well and can be found on the menu of many Chinese restaurants in the U.S.

In Chinese restaurants, chitterlings may be cooked in soy sauce, barbecued, used in soups or stir-fried.

##### Preparation Procedure:

As with the Soul Food preparation for chitterlings, most Chinese establishments begin by cleaning and then boiling the intestines until they become soft and tender. The chitterlings are then used in a variety of dishes.



For stir-frying, intestines are drained and cut into thin slices and then stir-fried in a wok with ingredients such as green onions, garlic, ginger, chili peppers, soy sauce and salt.

Another way of preparing chitterlings is to drain them and then place them in soy sauce. They are normally held on a steam table until ordered, and then served with rice.

Soup recipes add drained chitterlings to a soup mixture, which also usually includes pork blood cubes, garlic and preserved vegetables such as nappa cabbage.

#### Contamination / Cross Contamination:

Care must be taken when preparing chitterlings, due to the prevalence of *Yersinia enterocolitica* and other bacteria on the product. *Yersinia enterocolitica* is of particular concern because freezing does not destroy it, it grows at refrigerated temperatures and the infective dose is not known. However, heat and sanitizers destroy the pathogen. It is important that proper hygiene is followed to prevent employees from spreading the bacteria to food, equipment and utensils.

#### Poor Personal Hygiene:

Cleaning raw chitterlings can transfer *Yersinia enterocolitica* bacteria to hands and surfaces throughout the kitchen. Therefore, to avoid possible contamination of food contact surfaces and cross contamination of ready-to-eat foods, it is recommended that chitterlings be parboiled to destroy *Yersinia enterocolitica* as a first step before any cleaning or preparation takes place. If frozen, chitterlings should be thawed in the cooler and then placed into boiling water, dispersed by stirring and then brought back to a boil for 5 minutes. Parboiling for 5 minutes and then cooling before cleaning should reduce the risk of yersiniosis. Placing the intestines under cold running water or covering the product with ice may accomplish cooling.

#### Improper Holding Temperatures:

With regard to holding, some Chinese establishments boil whole intestines and then hold them on the steam table either whole or sliced until ordered, at which time they will slice and stir-fry the intestines with other ingredients. In many cases, the steam table is turned off or the chitterlings left in a pan away from the steam table to keep food items from drying out. This isn't as much of a concern for intestines that are in a soy sauce mixture or soup, as they tend to stay hot in liquid. Plain intestines, however, can lose heat quickly when left at room temperature. All chitterlings/intestines must be held at proper holding temperatures to ensure their safety.



Control Measures:

- Observe or confirm the prep procedure for chitterlings. Be on the lookout for possible contamination of utensils, prep surfaces and other areas of the kitchen.
- As needed, advise the establishment on safe handling procedures for cleaning and prepping chitterlings/intestines to avoid cross-contamination.
- Observe the holding procedures for chitterlings/intestines. Regardless of the type of dish being served, intestines must be cooked to 145°F and then held at 135°F or above or 41°F or below.

**5. Chinese - Dim Sum:**

Background:

Travelers in the ancient Canton region of China often journeyed very long distances and needed places to stop and rest throughout the day. Over time, teahouses began to appear along the road. In addition to tea, the teahouses began to offer small, bite-sized snacks (usually baked, steamed or fried) to sustain customers for the next leg of their journey. Called ‘dim sum’ which means ‘touch the heart’, the cuisine evolved over several centuries and is very popular today, with some Chinese establishments in the U.S. serving over 100 different types of dim sum.

Dim sum is usually eaten as brunch or lunch, but in the U.S. it is also popular as an evening meal. It contains combinations of meat, vegetables, seafood, and fruit, and is usually served in a small metal container with a perforated bottom or on a small dish, depending on the type of dim sum and how it is prepared.

Most Chinese restaurants serve dim sum in one of two ways: 1) Using a menu to order items a la carte; or 2) Having a server bring a cart filled with various types of dim sum to the table, where customers make selections straight from the cart.

Individual dim sum items tend to be small in size and are often served with two to four pieces of each item on one dish. It is customary to order family style, sharing dishes among the table. Hot tea is always served with dim sum.

Preparation Procedure:

Traditional dim sum uses a wide variety of ingredients. Depending upon the type of dim sum ordered, ingredients may include shrimp, fish, pork, beef,



poultry, onions, taro, turnips, Chinese greens, bamboo shoots, mushrooms, eggs and fruit. Some items are ground into a paste-like mixture, which is then wrapped in a thin flour ‘skin’ before cooking. After preparation, dim sum may be refrigerated in a stackable pan in which it is cooked, reheated and also served.

Dim sum is typically prepared by steaming, baking or frying. Some items are prepared as soups, also known as ‘congee’. The steamed food items are heated using a wok or in a steamer. Steamed items heated using a wok are often prepared in stackable, perforated metal containers that allow the steam to flow through the perforations to heat the food items. There are two methods for steaming foods using the wok. One method is to place a large metal plate with cut-outs on top of a wok of boiling water. Food items in individual perforated pans are then stacked and placed over the cut-outs to heat the foods. A lid is placed over the pan to retain the heat. The other method is to use large, stackable metal pans with openings that allow steam to reach the food items. A large, metal perforated pan is placed in the wok and the stackable pans are then placed on top of it with the last pan being covered. Food items may be placed on saucers, in bowls, or directly on the pans for cooking or reheating. Steamers used for dim sum are not designed like typical steamers seen in most restaurants; they are specially-designed pieces of equipment. Baked dim sum is prepared in ovens containing multiple racks for cooking large quantities at a time. Fried dim sum is usually prepared in a wok or in a deep fryer.

After cooking or reheating, restaurants may store dim sum in hot holding cabinets, steamers, ovens or on heated carts to maintain the product hot prior to service. For establishments that serve dim sum from unheated metal carts, the food items may be placed back in hot holding in an attempt to maintain product temperature, when they are returned to the kitchen. Upon being returned to the kitchen, some of the unserved cart items may be reheated and held in steamers until they are placed back on the cart for service, because they tend to quickly drop in temperature.

Following are descriptions of some of the most popular dim sum items:

Popular Types of Dim Sum:

**Ha Gao** - Steamed dumpling made of thin rice-flour skin and stuffed with filling made of shrimp, chives and other ingredients.

**Woo Kok** - A light, crispy dumpling made with mashed taro and stuffed with diced shitake mushrooms, onions, vegetables and shrimp, pork or chicken.

**Cheong Fan** - A large, wide rice noodle that is steamed, filled with different



types of cooked pork, shrimp, beef and/or vegetables and then rolled and steamed again.

**Cheon** - A spring roll containing vegetables such as sliced cabbage, mushrooms, carrots, bamboo and sometimes meat such as pork or shrimp and deep-fried.

**Cha Siu Baau** - A fluffy, pastry-like bun filled with barbeque pork, onions and spices. It may be either steamed or baked.

**Siu Maai** - A round steamed dumpling with pork filling inside a thin flour skin that is open on top.

**Lo Mai Gai** - Sticky rice wrapped in a lotus leaf and steamed. It may contain a variety of other ingredients, including mushrooms, chestnuts, egg yolk, pork or chicken.

**Fung Zao** - Chicken feet that are blanched, deep-fried, boiled, marinated in black bean sauce and then steamed or stir-fried.

**Lo Bak Go** - A square cake made with mashed daikon radish mixed with finely minced pieces of pork and shrimp. The cakes are first steamed and then sautéed.

**Mátuǎn** - Sesame seed balls made of dough filled with red bean or lotus paste, rolled in sesame seeds and deep-fried.

**Dan Tat** - A baked dessert tart made with a flaky outer pastry crust and an egg custard filling.

**Mong Guo Bo Din** - Mango pudding with chunks of mango and served as dessert, often topped with condensed milk.

Foodborne Illness Risk Factors – Inadequate Cooking / Improper Holding Temperatures / Contamination / Cross Contamination:

Inadequate Cooking:

The method for steaming dim sum in stacked containers is a process that can result in foods being served undercooked. Items on the top of the stacks may not reach adequate cooking temperatures because of the distance from the heat and food type. In other cases, items of different sizes may be placed in the steamer simultaneously. The larger items or items that contain a dense mixture of ingredients would take longer to cook than smaller or thinner items. Also, some food products are removed directly from the freezer and placed in the steaming pans. Cooking times would need to be extended to



allow for the thawing of these products. Therefore, to ensure that adequate cooking temperatures are achieved, operators must monitor the temperatures of the various food products with an appropriate temperature-measuring device. Temperatures of products should be measured based on their location during steaming, size and state prior to cooking.

#### Improper Holding Temperatures:

The rolling carts used to serve dim sum directly to the customers may contain propane tanks, Sterno or other forms of heat in the bottom of the cart. However, some establishments use carts that contain no source of heat. In these cases, time as a public health control should be implemented, which would require that all unused products be discarded at the conclusion of four hours. Most dim sum is self-limiting because of the loss in quality when held for extended periods, and is discarded at the end of the serving time anyway. Typically, restaurants only offer it at set times during the day, which also helps limit the number of hours that it is held at improper temperatures.

For those operators who want to maintain food temperature and hold any unserved foods for subsequent service, they must monitor the product temperature often enough to ensure that the food items are held at 135°F. For items that fall below 135°F, they may be immediately reheated if the monitoring of food temperatures was conducted often enough to ensure that pathogens were unable to proliferate and/or produce toxins. To understand which foods require time/temperature control for safety, inspectors need to become familiar with the different types of dim sum and the ingredients they contain. For example, cha siu baau looks like a simple bread roll, but actually contains pork.

#### Cross Contamination:

Dim sum that is presented on a cart that is rolled continuously throughout the restaurant is usually left uncovered, thereby exposing it to cross-contamination from a variety of sources. All cart items should be covered when not being presented to customers. Servers should take care not to allow customers to touch or otherwise contaminate the food.

In addition, the perforated pans used for steaming dim sum may contain bits of old food even after washing, due to the perforations. Steamer pans containing food particles must be re-washed, rinsed and sanitized prior to use.



Control Measures:

- Ensure that dim sum is cooked to required temperatures:
  - o Products containing any poultry must be cooked to 165°F or above;
  - o Comminuted fish or meat products must be cooked to 155°F or above; or
- Stuffed fish, stuffed meat, stuffed pasta, stuffed poultry, and stuffing containing fish, meat or poultry must be cooked to 165°F or above.
- Verify that dim sum is held at 135°F or above, or is held for four hours or less using time as a public health control with the proper documentation.
- Confirm that dim sum that is reheated for hot holding is heated to 165°F or above.
- Verify that the establishment has an appropriate temperature-measuring device for monitoring the temperature of food products. (Note: For thin food masses, a suitable small diameter probe that is designed to measure these type foods must be provided.)
- Examine the metal perforated dim sum containers for dried food debris.
- Ascertain the cleaning procedure for these containers, and ensure that they are being washed, rinsed, and sanitized.
- Observe the serving procedure of dim sum from carts in the dining room to determine if food items are adequately protected from possible contamination by consumers and employees.

**6. Chinese - Live Frogs:**

Background:

Frogs are a popular food in China and are prepared in a variety of ways.

Often referred to as ‘field chicken’ on Chinese menus both in China and here in the U.S., they are usually battered, stir-fried and mixed with different vegetables and sauces. They are also used in soups and stews.



Preparation Procedure:

Live frogs are often stored in styrofoam containers in small amounts of water. Operators will store containers of frogs at room temperature or in the cooler. In retail stores, the live frogs may be stored in aquariums. Customers can then pick out which frogs they would like the operator to prepare for them.

In food establishments, when an order is received, the live frog is removed from its storage container and then stunned before it is slaughtered. The stunning of the frog may be accomplished by striking the frog against the interior of a sink. The animal is then washed and beheaded. Next, the frog is skinned and its internal organs removed and discarded. The frog is washed again and then cut into large, bite-sized chunks, bones included. The pieces are then dipped in flour and fried in hot oil. Some establishments serve only the legs, while others prepare the entire frog.

Once the frog is cooked, it can be used in a variety of stir-fry dishes, such as pepper frog, where it is mixed with sautéed bell peppers, onions, scallions and jalapeno peppers. Ginger frog is another common way to prepare it. It entails cooking the battered frog and then adding scallions, garlic, ginger and dried chile peppers. Other popular Chinese dishes that include frog are garlic frog, frog legs in black bean sauce and hairy gourd soup with frog.

Foodborne Illness Risk Factors – Food From Unsafe Sources /  
Contamination / Cross Contamination:

Food From Unsafe Sources:

In the FDA Food Code, fish means fresh or saltwater finfish, crustaceans and other forms of aquatic life such as alligator, frog, aquatic turtle, jellyfish, sea cucumbers and sea urchin. Some of these animals may be brought in alive and slaughtered by the food establishment. Live aquatic animals should only be purchased from commercial sources that are licensed according to applicable laws or regulations. Holding, storing and handling live aquatic animals such as frogs are considered part of “processing” under Seafood HACCP regulations in 21 CFR 123 Fish and Fishery Products, which requires a hazard analysis to determine whether there are food safety hazards reasonably likely to occur for each species. Therefore, any supplier of live aquatic animals to food establishments should be inspected under Seafood HACCP regulations or their equivalent.

Contamination / Cross Contamination:

The tub, tank or container used to hold live aquatic animals must be cleaned frequently enough to prevent contamination of the animals. Dead animals





should be culled on a daily basis or as necessary to prevent the transfer of disease and decomposed material from one animal to another. Live animals are not required to be refrigerated below 41°F, but should be held at the optimal temperature for that animal. Aquarium tanks and other live animal holding containers generally are contaminated with Salmonella, Aeromonas and other potential foodborne pathogens, and therefore serve as pathogen reservoirs in the establishment.

Prior to slaughtering live aquatic animals in a retail store or food establishment, the regulatory authority may request that an operator obtain a variance and conduct this process under a HACCP Plan. The Food Code gives the regulatory authority the option to require a variance if an establishment is preparing food by another method that is determined by the regulatory authority to require a variance. Based on the storage, handling and preparation procedures and hygienic practices in the establishment, slaughtering aquatic animals under a HACCP Plan may be warranted to ensure that cross contamination does not occur.

When any animal is slaughtered in a food establishment, all work surfaces, knives and utensils must be cleaned and sanitized before and after use. Sanitary handling and removal of intestines, fecal material and other waste products from the slaughtering process is critical so that no other food, food-contact surface or non food-contact surface is contaminated. It may be useful to provide a dedicated area for slaughter and cleaning of live aquatic animals that is used for no other purpose. If provided, it should be situated where splash and drainage will not contaminate food products, especially ready-to-eat foods, utensils or single service articles. Once the aquatic animal is slaughtered, it should be cooked immediately or refrigerated at 41°F or less.

Control Measures:

*(NOTE: Some restaurants that keep live frogs may not have them listed on their menu. If styrofoam coolers or containers with breathing holes cut into them are observed, this is a good indication that the establishment may be handling live frogs.)*

- Verify the source of live frogs through sales invoices.
- Confirm that live frogs are held in clean containers and that dead frogs are culled.
- Observe that proper hand washing is performed before and after handling frogs.



- Determine the measures that are in place to prevent cross-contamination from live frogs and their meat to other food and other surfaces.
- Confirm that equipment and food-contact surfaces are washed, rinsed and sanitized before and after contact with frogs.
- Check that frog meat is cooked to 145°F or above for 15 seconds.
- Verify that after slaughter, frog meat that is not cooked immediately is cooled to 41°F or less within 4 hours, and then held at 41°F or below.

## **7. Chinese - Sea Cucumber:**

### Background:

A sea cucumber (also known as a ‘sea slug’ or ‘sea rat’) is an invertebrate saltwater animal. It is named for its cucumber-like shape and is mostly found on the sea floor. It is often mistaken for a plant, but it has tentacles, feet, a mouth and feeds on plankton and other organic matter in water or sand. It does not have a brain, but it breathes, reproduces via sperm/egg fertilization and can live 5 to 10 years. In addition to being a food source, it is also highly valued for its reputed medicinal properties, including as an aphrodisiac.

It is rich in iron and contains minerals including calcium, zinc and magnesium. Like tofu, the sea cucumber is flavorless, but has the ability to soak up the flavors of other foods and seasonings with which it is cooked. It is used in soups and stews, stir-fried, deep-fried, stuffed and as an ingredient in braised dishes. It varies in appearance from white to nearly black in color.

### Preparation Procedure:

When the sea cucumber is harvested, the internal organs are removed and it is thoroughly washed. Next, it is boiled in salt water and air-dried. While some facilities purchase sea cucumbers in frozen form, most restaurants and markets purchase packaged sea cucumber that has been commercially processed and dried prior to arriving at the retail facility. Even so, preparing dried cucumber is very labor intensive. First the skin is removed, and then the cucumber soaked in water for several days, during which it is washed and the water replaced several times.

Once it is rehydrated, it is boiled until it becomes soft and gelatinous and expands to several times its original size. At this point, it is ready for use. If not prepared properly, the sea cucumber can have a rubbery texture that is difficult to chew. Sometimes it is boiled with ginger or fruit to remove the

Sea cucumber in its dehydrated form is usually not held in refrigeration because its water activity is below .85. As long as it remains in a dried state, it is not a food that requires time-temperature control for safety.

Foodborne Illness Risk Factor -- Improper Holding Temperatures:

Although it looks like a vegetable and is even named after one, it is important to realize that the sea cucumber is an animal. Once it is rehydrated, it must be held at proper holding temperatures to prevent microbial growth. Sea cucumber is categorized as fish and therefore must be cooked to 145°F or above.

Control Measures:

- Be able to recognize a sea cucumber in both its dried and reconstituted states.
- Verify that reconstituted sea cucumber is being held at 41°F or below.

**8. Chinese - Sizzling Rice:**

Background:

Sizzling rice is rice that has been boiled, dried, fried and then served sizzling hot as an ingredient in a variety of dishes. The most common way to serve sizzling rice is in sizzling rice soup, which usually has a chicken broth base.

In addition to soup, it is also used in stir-fry meals in which the rice sizzles as hot sauce is poured over it. Most Asian markets sell pre-cooked sizzling rice cakes, but many restaurants prefer to make their own.

Preparation Procedure:

Sizzling rice preparation involves several steps and can take several hours to complete. First, rice is cooked in the normal manner by steaming or boiling. Once the rice is cooked, the residue that is stuck to the bottom of the pan is what is used to make sizzling rice (it can also be made from regular steamed rice). The rice is scraped out, spread into a thin layer and then dried. Once a sizzling rice dish is ordered, the rice is fried very hot in a wok and taken immediately out to the table where it is added to soup or sauce, thus creating the ‘sizzling’ effect.



Foodborne Illness Risk Factors – Improper Holding Temperatures /  
Contamination / Cross Contamination:

If cooked rice is improperly held, *Bacillus cereus* bacteria may grow and produce a heat stable toxin in the product, which may cause illness when consumed.

Many facilities dry their rice by leaving it out at room temperature for many hours, which is an environment conducive for microbial growth. Some establishments place the trays or pans of rice outdoors to dry in the sun, which exposes the product to environmental contamination in addition to allowing microbial proliferation. To prevent bacterial growth and possible toxin formation of *Bacillus cereus*, the rice should be dried in an oven at a temperature that would maintain the rice during drying at 135°F or above, or dried uncovered in the refrigerator. Once the rice is completely dried, it should be properly cooled and stored in an air-tight container or refrigerated until used.

If a facility wants to dry the rice at room temperature or below 135°F in an oven, they must obtain a variance and prepare the rice under an approved HACCP plan.

Control Measures:

- Observe or ask the establishment to describe their method of drying rice used in sizzling rice dishes.
- Verify that rice used for sizzling rice is dried in an oven or refrigerator. Any rice being held to dry at room temperature must be discarded, or have an approved HACCP plan that is being implemented.
- Confirm that the dried rice has a water activity ( $A_w$ ) of .85 or below, or is held at 41°F or below.

**D. Indian:**

Nearly 2 million India-born Indians currently live in the United States. Until the 1980's, the vast majority of them lived in the northeastern part of the country. Now, however, Indian communities can be found in many urban centers and the largest population resides in California.

Indian cuisine is perhaps best known for its use of spices, the most common of them being curry, coriander, cumin, turmeric, red pepper, nutmeg, mustard, saffron, cinnamon, cardamom, ginger, paprika and mace. As a rule, Indian food tends to be quite spicy. Because so much of their diet is vegetarian, the art of flavoring is high on



every chef's list of skills. In fact, many Indian restaurants are strictly vegetarian. More and more people are discovering this unique, time-honored cuisine, especially with the rise in popularity of buffets at Indian restaurants.

## 1. **Indian - Biryani Masala:**

### Background:

Biryani Masala is a famous blend of spices created to add flavor to ordinary rice. When prepared with these spices, the rice dish is called 'biryani' and may also include lamb, chicken, fish or vegetables. It originated centuries ago and today remains one of India's most popular dishes. 'Masala' is an Indian word that means 'spice blend'.

The spices used in the biryani masala include turmeric, black pepper, nutmeg, mace, bay leaf, fenugreek, fennel, cumin, coriander, clove, chili, cassia, green cardamom, caraway and black cardamom. Variations may include saffron, ginger, dried prunes and other ingredients.

### Preparation Procedure:

The preparation of biryani masala simply involves the blending of the above-mentioned spices, although different establishments have their own variations of the recipe. The bulk of the blend is ground and mixed together, creating a red to reddish-brown powder, but larger pieces may be included such as crystallized ginger, dried fruits or seeds that give it a 'rocky' texture.

The preparation of the rice dish itself is somewhat labor intensive. For instance, to prepare a vegetable biryani, the rice is first parboiled and then mixed with ingredients such as onions, garlic paste, tomato puree, and oil. After cooking until the oil separates, other ingredients are added, including yogurt and the spice mixture, and it is further cooked, creating a thick gravy along with the rice mixture. Next, a layer of rice is placed in a greased bowl or pan, followed by a layer of cooked vegetables and another layer of rice, which is then covered and cooked over low heat until done.

### Regulatory Concern – Misidentification:

Even though it is available commercially, many establishments prefer to make their own biryani masala in-house. Depending on the recipe used by a given establishment, the spice mixture may be quite unusual looking. It may be stored in containers previously used for something else, adding to the confusion. In some cases, an inspector might even mistake it for a container of dirt and small rocks.



Control Measures:

- Know that biryani masala is a blend of spices used to prepare the rice dish, biryani.
- Be able to recognize biryani masala and other spice mixtures used in Indian cooking.

**2. Indian - Copper Pots and Utensils:**

Background:

Many Indian restaurants use copper pots and utensils to both prepare and serve food. The benefits of copper cookware are that it is a superior conductor of heat, especially for stovetop cooking. Because of this, it heats pans up faster, cooks more evenly and is less likely to scorch food than other metals.

Serving bowls used in traditional Indian cuisine are also often made of copper or include copper in their construction. This use stems from a variety of reasons, including availability, attractive appearance and belief in copper as a folk medicine remedy for a number of human ailments.

Regulatory Concern – Chemical (Toxicity):

Copper is reactive, which means that the copper will chemically combine with certain foods with a pH below 6. This includes foods such as tomatoes, fruit juices, salad dressings, wine or foods that contain vinegar. As a result, direct contact of these type foods with copper is dangerous. In sufficient quantities, copper can cause nausea, vomiting and diarrhea when the food is consumed.

Because of its toxic potential, copper cooking and serving pots and bowls are usually coated with stainless steel, tin, aluminum or a porcelain enamel interior finish, which renders them safe for use. However, even if copper pans or bowls are lined with tin, they should not be used for moist, acidic foods.

It is important for restaurants to properly care for copper cookware, avoiding scouring, as this can erode the protective surface. If the lining of a copper pan is severely scratched, the pan should be replaced.

Control Measures:

- Check the establishment for copper pans, serving dishes and utensils.



- If present, determine how they are being used.
- Check the lining of copper based pans and serving dishes to be sure they are free of excessive pitting and scoring.
- Educate the establishment on the dangers of copper and the types of precautions they need to take to ensure the safety of their customers.

### 3. **Indian – Goat:**

#### Background:

Goat is a common meat popular among many ethnicities, including African, Caribbean, Hispanic, Greek and Indian populations. Meat and Poultry inspection falls under the purview of the United States Department of Agriculture (USDA). Through cooperative agreements, this responsibility may be transferred to States but any meat processed under State inspection is limited to intrastate commerce.

#### Preparation Procedure:

Goat is prepared in a variety of ways, including roasted, braised, curried and in soups and stews. Probably the most popular Indian dish using goat is curried goat.

First the goat is cut into small pieces and seasoned with a variety of spices, which may include curry, cumin, fenugreek, cinnamon, cloves, ginger, garlic, chili powder, paprika and cardamom. Next, sliced onions are cooked in hot oil until browned, at which time more of the previously mentioned spices are added. Then the meat is added and cooked until well browned. After the meat is browned, the heat is reduced to low and tomatoes, water, more curry powder and other spices are added. The dish is simmered from 1.5 to 3 hours, until the liquid thickens somewhat and the meat is tender.

Curried goat may be served with basmati rice, mango chutney or other Indian side dishes.

#### Foodborne Illness Risk Factor – Food From Unsafe Sources:

While most goat meat is purchased from state or USDA-approved plants, some restaurants and markets purchase goat meat from unapproved sources. Others may purchase a live goat from an unapproved source and process it themselves. Still others raise their own goats at home and slaughter and process them as needed. There have been cases in which inspectors have discovered whole animals, frozen with fur and hooves intact.



Any goat meat that is not from a USDA or state-approved source is illegal and cannot be served in restaurants or sold in markets.

Control Measures:

- If goat is on the menu or in a meat display case, ask to see the packaging or invoice in order to ascertain that it comes from an approved source.
- If the whole skinned goat carcass is in the facility, check for the USDA stamp to verify that it is from an approved source.
- Verify that time / temperature controls appropriate for goat are used.

**4. Indian – Idli:**

Background:

Idli is a steamed rice and lentil cake native to southern India. Light and spongy in consistency, it is most often eaten at breakfast or as a snack. It may also be enjoyed as a side dish. It is white, round and usually 2”-3” in diameter and about 1” deep in the center.

The traditional idli is somewhat bland and is served with a light curry sauce, chutney or sambar (dish made of lentils and vegetables in a spicy sauce). Other versions may incorporate extra ingredients such as mustard seeds, chile peppers, coriander seed, cumin, sesame seeds, garlic, nuts, scallions, coconut or sugar to give it a spicy or sweet flavor.

Preparation Procedure:

To prepare the traditional idli, uncooked rice and split black lentils are soaked until somewhat tender, then ground into a flour or paste with 2 parts rice to one part lentils. Salt and water are added and the paste is allowed to ferment overnight or 8 – 12 hours, during which time it will expand to about 2.5 times its original volume. Once the batter is fermented, it is spooned into an idli tray, which looks somewhat like a poached egg pan. The idlis are then steamed 8 – 25 minutes in a special piece of equipment designed specifically for idlis.

Foodborne Illness Risk Factors – Improper Holding Temperatures / Inadequate Cooking:

During the preparation of idli, rice is soaked in water and then ground into a paste. Afterwards, the paste is steamed and normally stored at room temperature. Inadequate holding temperatures after preparation and cooking





of the idli could result in the multiplication of *Bacillus cereus* bacteria, which produces a heat-stable toxin that can cause illness when the product is consumed. Therefore, refrigeration at 41°F or below is required; both during the soaking process, and after the idlis are prepared.

Control Measures:

- Verify that the rice is being held at 41°F or below during soaking.
- Confirm the cooling procedures for idlis. Idlis shall be cooled from 135°F to 41°F within 6 hours, provided that they are cooled from 135°F to 70°F within the first two hours.
- Ensure that after cooking, idlis are cooled and then held at 41°F until service.

**5. Indian – Nan:**

Background:

Nan (also Naan) is a type of Indian flat bread that is traditionally baked in a tandoor oven. It is unleavened bread that originated in East India and can be served with any meal. While not specifically intended to be used in place of utensils like the Ethiopian enjera bread, some diners tear small pieces of Nan and use it to scoop up chunks of food.

Preparation Procedure:

The basic ingredients for Nan are flour, yogurt, milk, sugar, salt, yeast and butter. Once the ingredients are mixed and the dough is formed, it is kneaded and then covered and left to rise for about 2 hours. The dough is then divided into balls about 3” in diameter and rolled or stretched by hand into flattened rounds about 8” in width.

The round is then placed on a cloth mitt-like ball, which protects the hand as the chef quickly reaches into the hot tandoor oven and ‘slaps’ the dough onto the sides of the oven. The dough cooks very quickly in 1-2 minutes, becoming slightly browned on the side touching the oven wall.

Because the dough is vertically attached to the hot oven, it tends to sag slightly, forming a teardrop shape. Once the bread is ready, it is removed with a special hooked utensil that separates it from the wall and prevents it from falling to the bottom of the oven.

The bread is served hot with melted butter and usually sprinkled with sesame seeds. Some establishments may add additional herbs and spices, such as garlic or cracked pepper, for flavoring.

Foodborne Illness Risk Factor – Contamination / Cross Contamination:

The chief concern with Nan bread is not the bread itself but the application device that enables the chef to ‘slap’ the dough onto the sides of the tandoor oven. It has been variously described by food inspectors as a white cloth mitt, a cloth bundle, and a white cotton puff. Basically it is a series of white cotton cloths, usually regular restaurant dishtowels that are layered on top of one another in a dome-like fashion.

The problem with this method is that restaurants tend to use the same cloth over and over. When not in use it may be left on any number of unsanitized surfaces.

In addition, restaurants have a tendency to keep adding new cloths to increase the size and protective value of the implement, covering the old, dirty dishtowel with another one, often one that has been used for other activities such as wiping countertops or hands. While the bread itself is not potentially hazardous, it can be contaminated by the dirty, damp cloths, which can be breeding grounds for bacteria.

Control Measures:

- Observe the establishment’s method for placing the dough into the tandoor oven.
- Verify that the establishment is using a food grade cloth, such as cheesecloth, on the application device and confirm method and interval for changing cloth.

**6. Indian – Tandoori:**

Background:

The word ‘tandoori’ refers to the Indian style of cooking using the traditional ‘tandoor’ oven made of brick and clay. The oven has rounded sides and stands up to 5 feet high. It uses charcoal in the bottom as a heat source. The intense heat (up to 900°F) cooks meat very quickly, with the meat becoming crispy on the outside while remaining tender and juicy on the inside.

In the U.S., many Indian restaurants still use the traditional clay oven while others use a variation that uses gas instead of charcoal, with a steel casing around the clay cylinder to prevent cracking.



Preparation Procedure:

Tandoor ovens are used for baking Indian breads such as ‘roti’ and ‘nan’. They are also used to cook a variety of meats, such as ‘tandoori chicken’.

Tandoori meats are marinated in a yogurt-based sauce marinade or dry spices. The red color often associated with tandoori cooking comes from saffron and red food coloring. When the meats are ready for cooking, they are usually skewered and lowered into the oven’s intense heat.

Foodborne Illness Risk Factors – Inadequate Cooking / Improper Holding Temperatures:

Inadequate Cooking:

While a tandoor oven is very hot, the temperature may not be even throughout the oven and therefore even cooking may not occur. For example, a skewer with only 4 or 5 pieces of chicken may cook very quickly, as all of the chicken is near the bottom of the oven where the heat is very intense. However, if a dozen or more pieces of chicken are placed on the skewer (as is often the case), the pieces near the top of the skewer may not be getting the same level of heat as those on the bottom, where the source of the heat is located. The temperature variables may result in the pieces on the bottom becoming overcooked before the ones on top reach the required internal cook temperature of 165°F. Unless the temperature of the chicken is measured in different areas on the skewer, some of the chicken may end up being served undercooked.

For those establishments that prepare large quantities of tandoori meats and then refrigerate them for later use, reheating may be an issue. The reheat method is usually by placing the meat back into the tandoor oven, where even heating may not occur. The meats must be reheated to an internal temperature of 165°F or above if it is going to be hot held. Tandoori for immediate service may be reheated to any temperature as long as it has been properly cooled.

Improper Holding Temperatures:

If the tandoori meat is not being served immediately, it must be hot held or properly cooled and refrigerated. Establishments often cook the meat (or partially cook it) in advance and then leave it out at room temperature, most likely to prevent it from drying out. They will then reheat it (or finish cooking it) right before service. Buffet lines may also pose a challenge for maintaining tandoori meats at the proper temperature due to the shape and size of the meats and the lack of moisture in the product.



Control Measures:

- Assess cooking procedure for tandoori meats. Tandoori meats must reach a final internal cook temperature of the following:
  - 165°F or above for chicken; and
  - 155°F or above for beef and lamb that has been tenderized
- If meats are not reaching the proper temperature, suggest that the operator place smaller portions of meat on the skewer, or remove pieces on the bottom nearest to the heat once they cook and rotate top pieces downward.
- Confirm that the establishment has and is using an appropriate thermometer for measuring the temperature of meats being removed from the oven.
- Verify that meats held on the buffet, kitchen steam table or holding cabinet are at 135°F or above.
- Regardless of the method of reheating, check the reheat temperature to be sure foods reach 165°F or above within 2 hours if the meat is going to be hot held prior to service.

**E. Japanese:**

Japanese cuisine is famous for its simplicity and uncluttered, yet elegant presentation. There are several different types of Japanese restaurants in the U.S., the most popular of which are hibachi (teppanyaki) style establishments, steakhouses and sushi restaurants. There are over 5,000 sushi restaurants in the U.S.

Rice is the base of most meals and many foods are left raw or just slightly cooked to maintain and highlight their freshness. While Japanese food has become increasingly popular among Americans, many eating establishments still cater solely to native-born Japanese customers.

**1. Japanese – Hibachi:**

**Background:**

Hibachi, also known as ‘teppanyaki’, refers to a Japanese style of cooking in which specially trained chefs prepare a meal in front of guests from a specially designed cooking area. By Japanese standards it is a recent cooking style, originating in the southern Japan region of Kobe in the 1940’s.



A ‘teppan’ grill is a solid steel, flat-topped grill with several gas jets underneath and surrounded on three sides by a table where guests sit and eat. The fourth side is where the chef prepares the meal while entertaining the guests.

In the United States, hibachi chefs are known not only for their expert cooking skills, but also for spectacular displays of dexterity as they cut, stir, season, and serve each diner's portion onto plates on the teppan. Enjoying the art of the cooking process is as important as the meal itself, as the chef entertains diners with slicing, dicing and flipping the food, manipulating fire and juggling items such as eggs, onions, pepper shakers and in some cases, knives. Most hibachi chefs train for well over a year before they are allowed to cook/perform at their own hibachi table.

#### Preparation Procedure:

Hibachi cuisine generally consists of seafood (mainly prawns and fish), meat (mainly steak and chicken), vegetables and rice, with beef being the most popular part of most hibachi meals.

One of the skills a hibachi chef must have is to be able to control the intensity of the heat applied to the food through various areas of the ‘teppan’ plate. Seafood and vegetables require slow cooking over low intensity heat while meats require higher intensity heat. Balancing the heat is essential to the successful preparation of the meal. Timing is also important, as the chef must be able to serve all of the guests’ meals at once.

#### Foodborne Illness Risk Factor – Contamination / Cross Contamination / Inadequate Cooking:

##### Contamination / Cross Contamination:

While the Food Code does not prohibit hibachi style cooking, there is some concern about the possibility of cross contamination.

Some hibachis have a small, refrigerated storage area located at the table but others may require carrying the ingredients from the kitchen to the hibachi table. Cross contamination may occur with the chef bringing different types of meat that are touching one another out to the hibachi area from the main kitchen. Even establishments with refrigerated storage at the hibachi should be checked to be sure meats are being stored properly to avoid cross contamination.



Cross contamination may also result from using the same utensils on different meats or on meats in various stages of cooking, such as using a utensil to place raw seafood on the grill and then using the same utensil to remove finished beef.

Inadequate Cooking:

Like any other type of cooking, food cooked on a hibachi grill must be cooked to proper temperature before serving. Inspectors should vary inspection times so that actual cooking on the hibachi grill can be observed. Although some operators may not view it as appropriate, temperatures should be taken of the final cook temperature of meat, poultry and seafood removed from the grill unless the food is ordered undercooked. For the foods that are served undercooked, a consumer advisory must be provided to warn the consumers of the risk of consuming these products. Whole muscle-intact beef steaks, steaks that have not been injected, mechanically tenderized, reconstructed, or scored and marinated may be served without a consumer advisory if the steaks are cooked on both the top and bottom to a surface temperature of 145°F or above with a cooked color change on all external surfaces.

Control Measures:

- Observe restaurant operations to ascertain whether seafood, meats and poultry are being transported, stored or handled in such a way that cross contamination can occur.
- Determine that the establishment has a consumer advisory that discloses to consumers, which animal foods are served raw or undercooked and warns the consumer of the risk of consuming these products.
- Determine that refrigerated foods are held at 41°F or less or are held refrigerated for no more than 4 hours (time as a public health control) with a time tracking system in place.
- Verify the final cook temperature of animal foods and that a thermometer is provided for measuring food temperatures.
- Confirm that utensils are being washed, rinsed and sanitized between meals.

## Background

In Japan, the word ‘sushi’ means ‘rice dressed with vinegar’. However, as we know it here in the United States, it is used to describe sticky vinegar rice that is shaped into bite-sized pieces and topped with raw or cooked fish, or formed into a roll with fish, egg or vegetables and wrapped in seaweed. It is sometimes confused with sashimi, which is delicately sliced raw seafood served with only a dipping sauce.

Sushi began as a method of preserving fish centuries ago, but has since evolved into an artful and unique dining experience. Although sushi uses relatively few ingredients, it is perhaps one of the most well-known examples of the artistry of Japanese cuisine. In Japan, one must train for more than ten years before earning the title of master sushi chef or ‘shokunin’.

### Preparation Procedure:

Sushi is made with white, short-grained, Japanese rice mixed with a dressing made of rice vinegar, sugar, salt, nori (a type of seaweed) and sake. Once it is cooked, it is cooled to body temperature before being used. There are regional variations in the preparation of sushi rice. Most of the variations are in the rice vinegar dressing; some contain more salt, others are made with more sugar.

There are dozens of kinds of sushi, some of which are cooked (shrimp, crab, octopus) and others that are served raw. Fish that is commonly used in sushi includes salmon, snapper, tuna, mackerel and yellowtail. Other seafood includes fish roe, sea urchin, eel, clam, conch and scallop. Additional ingredients common to sushi menus include quail eggs, avocado, cucumber, mushrooms and seaweed. Sushi is always served with wasabi (a very spicy green horseradish paste), soy sauce and pickled ginger.

The five most popular types of sushi seen in American restaurants are nigiri-sushi, maki-sushi, chirashi-sushi, temaki-sushi and inari-sushi. Nigiri-sushi is little fingers of rice topped with a filet of raw or cooked fish or shellfish and sometimes dipped in wasabi. Nigiri is generally the most common form of sushi seen. Maki-sushi is rice and seaweed rolls with fish and/or vegetables. Most maki places the seaweed (nori) on the outside, but some, like the California and rainbow rolls, place the seaweed on the inside. It’s reported that sushi chefs in Los Angeles restaurants created the well-known California roll in the 1970s for American diners who were squeamish about eating raw fish. The California roll consists of cooked crab, cucumber and avocado. Chirashi-sushi, which translates as "scattered sushi" is a bowl or box of sushi rice topped with a variety (usually nine) of sashimi.



Temaki-sushi is a hand-rolled cone of sushi rice, fish and vegetables wrapped in nori (seaweed). Lastly, inari-sushi is fried tofu pouches stuffed with sushi rice.

Sushi may be served in various combinations, depending on what the guest orders. Most sushi restaurants have a bar area where guests can sit in front of a clear partition and observe the master sushi chef preparing various dishes.

Foodborne Illness Risk Factors – Food From Unsafe Sources / Improper/  
Holding Temperatures / Poor Personal Hygiene:

Food From Unsafe Sources:

Fish that is not purchased from an approved source may not be properly acquired or handled prior to shipping and can contain toxins harmful to humans. Two common examples are ciguatera and scombroid toxins.

Ciguatera is an illness caused by eating fish that contain toxins called ciguatoxins, produced by a marine algae microorganism. The toxin is acquired by the fish through the food chain and mostly affects fish that feed close to tropical reefs, including red snapper, grouper, triggerfish, jacks and barracuda. The larger the fish, the more likely they are to contain the toxin. In all, over 400 different kinds of fish have been linked to the disease, even salmon. Cooking the fish does not prevent ciguatera. People who have ciguatera may experience nausea, vomiting, and neurologic symptoms such as tingling fingers or toes. They also may find that cold things feel hot and hot things feel cold. Seafood restaurants should only purchase fish from a supplier who can ensure that the fish are not harvested at or near reefs.

Improper Holding Temperatures:

Scombroid toxin is formed when fish has been temperature abused and bacteria present on the fish produces the enzyme histidine decarboxylase, which converts histidine that is naturally in the fish's flesh to histamine, which is toxic to humans upon eating the fish. The infective dose (the amount of histamine in the flesh required to cause illness) is not known. Histamine poisoning, as it is sometimes referred, causes allergic reactions such as itching, rashes and shortness of breath. The presence of the toxin does not make the fish smell bad or otherwise appear spoiled. Once histamine is present, neither freezing nor cooking the fish will eliminate it. The only control for scombroid toxin is prevention, by maintaining proper temperature of the fish from harvest through service. The fish most frequently affected by scombroid poisoning include mackerel, tuna, mahi-mahi and bluefish. Operators must not only purchase fish from reputable sources, but also properly maintain the fish below 41°F after receipt in their establishments to reduce the risk of exposure to scombroid





toxin.

In order to ensure the safety of sushi, raw seafood must be frozen in order to destroy parasites. Parasitic worms live in many species of fish. When live worms are consumed in raw fish flesh by humans, they can cause acute abdominal pain, and in some cases have to be surgically removed from the stomach lining. Cooking or freezing fish to required temperatures will destroy them. The Food and Drug Administration has concluded that to enhance safety, fish must be subjected to HACCP controls at the processor/supplier level. The control measures for a retail establishment are that it purchases only fish that has been properly frozen or that it conducts in-house freezing.

Many sushi establishments are acquiring fresh fish that have never been frozen, and therefore have not undergone parasite destruction. It is the restaurant's responsibility to make sure that it is done. Most refrigerators in retail facilities are unable to freeze fish to the temperatures required to destroy parasitic worms. Operators who have equipment capable of freezing the fish to proper temperatures must keep records on how long they froze the fish and to what temperature(s) the fish was frozen. These records must be maintained for 90 days. If they cannot prove that they are able to freeze the fish adequately in-house, they must have a written agreement or statement from the supplier stipulating that the fish supplied are frozen to a temperature and for a time capable of destroying parasites. Most tuna species, aquacultured fish such as salmon and molluscan shellfish are exempt from freezing.

Sushi rice typically includes vinegar and sugar in the recipe. Laboratory tests have indicated that sushi rice made in the traditional method has a pH of 4.2 or less and does not require time-temperature control for safety. As a result, sushi restaurants and markets that make their own sushi and wish to hold the rice at room temperature can do so if they receive a variance from the regulatory authority and operate under a HACCP plan. They must also have a pH meter, routinely calibrated against a known buffer, or test strips to regularly check the pH of the product. If the establishment does not want to apply for a variance, they can use time as a public health control for the rice, which requires that each batch of rice be identified with the time that is 4 hours past the point in time when the rice was removed from temperature control, and should be used or discarded.



Poor Personal Hygiene:

Sushi, even if made with raw fish, is a ready-to-eat product because it is consumed in that form. Products that include raw or undercooked seafood require a consumer advisory to warn consumers of the risk of eating raw seafood products. No bare hand contact is allowed during preparation or service at any point. Sushi chefs must wear protective gloves or use other utensils or implements while working to prevent contacting sushi with hands.

Control Measures:

Determine whether the raw fish has been frozen to destroy parasites in-house or at the supplier. Review documentation that raw, raw-marinated, partially cooked, or marinated-partially cooked fish has been:

- Frozen and stored at a temperature of -4°F or below for a minimum of 7 days in a freezer;
- Frozen at -31°F or below until solid and stored at -31°F or below for a minimum of 15 hours; or
- Frozen at -31°F or below until solid and stored at -4°F or below for a minimum of 24 hours.
- If fish is frozen in-house, check freezers to verify that they are capable of maintaining the product at the specified freezing temperatures.
- Confirm that fish is stored at 41°F or below prior to service and that prepared sushi is held at 41°F or below, or time as a public health control is implemented with proper documentation.
- Verify that sushi rice is being prepared under an approved HACCP plan and has a pH of 4.2 or below, is held at 135°F or above, or the facility is using time as a public health control with proper documentation.
- Confirm that the establishment has a consumer advisory that discloses to consumers which items contain raw or undercooked animal food and warns the consumer of the risk of consuming these products.
- Observe the preparation of sushi to ensure that it is prepared with no bare hand contact.



- Due to difficulty in cleaning, verify that bamboo mats used to roll sushi are covered/lined with a food grade plastic wrap.
- Ascertain whether fish is fresh by checking for the following signs:

**Signs of Freshness in Fish:**

- o Eyes are clear and not sunken
- o Bright red gills
- o No slime on fish's body
- o Scales do not come off easily
- o Belly area is firm and elastic
- o No fishy smell

**Signs of Temperature Abuse in Frozen Fish:**

- o Sour odor
- o Off color
- o Sunken eyes
- o Ice crystals formed on fish
- o Paper wrapping is moist, slimy or discolored

**Special Note:** Sushi chefs are among the most highly regarded professions in Japan. Because of the great pride they take in their culinary art, it is rare for a sushi restaurant to serve products that are not fresh. However, the growing popularity of sushi has resulted in other types of restaurants (Korean, Chinese, etc.) adding sushi to their menus. In many cases, they will leave sushi sitting out at room temperature all day. It is important to be especially aware of the holding conditions for sushi in non-Japanese restaurants. It is also important to monitor the holding procedures for rice because non-Japanese restaurants typically do not prepare rice in the unique way that makes Japanese sushi rice safe at room temperature.

**3. Japanese – Tempura:**

**Background:**

Tempura is the classic Japanese method of cooking vegetables and shellfish by coating them with a light batter and deep-frying them. Typical tempura items include seafood (shrimp, scallop, eel, crab, squid and various types of fish) and vegetables (zucchini, sweet potato, shiitake mushroom, carrot, green pepper, eggplant, green bean, onion, okra and asparagus). It is best eaten hot immediately after frying.



Preparation Procedure:

Tempura is prepared by first cutting and slicing items into thin, bite sized pieces. The pieces are then dipped in a light batter. Tempura batter recipes vary, but the basic ingredients are flour, eggs, and very cold water. Other ingredients may include cornstarch, baking soda, baking powder, sugar, milk and butter. After being dipped into the batter, the pieces are deep fried in sesame oil at 340°F or hotter. The prepared tempura is served with a flavorful tentsuyu sauce (made of soy sauce, sake and soup stock) and grated daikon (Japanese radish).

Foodborne Illness Risk Factor – Improper Holding Temperatures:

Tempura is best served hot immediately after frying. If not served immediately, some establishments will hold it at room temperature because hot holding causes the tempura to become soggy and the batter to fall off. Operators who do not want to hold the tempura hot have the option of holding the tempura for no more than 4 hours at room temperature. At the end of the 4 hours, any food that has not been served must be discarded. Food that is being held by time instead of temperature must be marked to indicate the time that is 4 hours past the point in time when the food is removed from temperature control.

Control Measures:

- Ascertain whether tempura is cooked to order or cooked and held.
- If tempura is not served immediately, confirm that the facility is holding the tempura at 135°F or above or using time as a public health control with the proper documentation.

**F. Korean:**

Korean cuisine is widely known for its spicy flavors and the large number of side dishes (up to 20) served with meals. The basic staples of Korean food are rice, vegetables, tofu, fish and seaweed. Soup plays a large role in the typical Korean diet, as does kimchi (fermented vegetables). There are more than 1 million native Koreans living in the U.S. and over 4,000 Korean restaurants.



**1. Korean – Sushi:**

Background:

Korean sushi is known as ‘kim bap’. ‘Kim’ means ‘seaweed’ and ‘bap’ means ‘rice’. While similar to Japanese sushi in many ways, there are some key differences. Japanese sushi rice is made with vinegar and sugar, whereas Korean sushi uses sesame oil and salt. In addition, Korean sushi is always wrapped in seaweed and does not use raw ingredients except for vegetables.

Unlike Japanese sushi, which is considered a delicacy, Korean sushi is more of an everyday food, often eaten for lunch or as a snack.

Preparation Procedure:

Korean sushi is prepared by taking slivers of various ingredients and stacking them on top of a layer of rice. These are then rolled in seaweed and sliced. Typical fillings include thinly-sliced sautéed beef or sausage, crab, fried eggs, carrots, cucumber and pickled radish. It is typically served with kimchi.

Foodborne Illness Risk Factors – Improper Holding Temperatures / Poor Personal Hygiene:

Improper Holding Temperatures:

The chief regulatory concern with Korean sushi is the rice. Whereas the Japanese make their rice with vinegar and sugar, Korean sushi rice is made with sesame oil and salt. It is not acidified like the Japanese rice, and therefore must be held at proper temperature or held using time as a public health control. If this control is implemented, the establishment must mark the item to show the time 4 hours past the time it was taken out of temperature control and must be used or discarded.

In addition to kim bap, many Korean eating establishments also prepare Japanese-style sushi using Korean-style rice, so the same regulatory concerns apply. In many cases, not only rice, but also completely prepared sushi rolls are left sitting out at room temperature. The same regulations that apply to the rice also apply to the sushi rolls.



## **F. Korean:**

### Poor Personal Hygiene:

Since Sushi is a ready-to-eat product, employees must not contact the food with their bare hands. They must wear protective gloves or use other utensils or implements while working to prevent possible contamination of the sushi.

### Control Measures:

- Confirm that rice is held at 135 °F or above, prepared sushi is held at 41°F or below, or that time as a public health control is implemented with proper documentation.
- Monitor sushi preparation to ensure that there is no bare hand contact with ready-to-eat food.

## **G. Mexican:**

According to the 2000 U.S. Census, Mexicans are by far the largest Hispanic group in the United States. With 20.6 million Mexican-born people living here, they account for nearly 60 percent of the country's 35.3 million Latinos.

As a result, Mexican restaurants are a common sight in nearly every part of the country. In general, Mexican food is known for being mildly to very spicy, thanks in large to the use of the chile pepper. Some 'Americanized' Mexican restaurants serve only dishes (ground beef tacos, enchiladas, burritos, tostadas, chile rellenos, quesadillas, rice and beans) that are popular among non-Hispanic Americans. Others, especially those catering to people of Mexican and Central American heritage, serve these and more traditional foods such as buche (pork stomach), lengua (beef tongue), and menudo (a stew made with beef intestines and hominy), as well as Mexican specialty drinks such as horchata and tamarindo.

Regardless of the type of Mexican restaurant you are inspecting, there are foods and preparation procedures you need to be aware of in order to carry out a complete and informed inspection. It's also important to have a basic understanding of Mexican culture and etiquette, in order to establish and maintain a positive relationship with the restaurant and market owners you will encounter.



**1. Mexican - Al Pastor:**

Background:

Al Pastor is a traditional Mexican dish in which meat (usually pork) is cooked using a special method and served in a taco. The name 'al pastor'<sup>1</sup> means 'shepherd's style' and it is believed to be an adaptation of the gyro rotisserie style of cooking brought to Mexico when Lebanese immigrants settled there beginning in the late 1800s, bringing their vertical rotisseries with them.

Food Preparation Procedure:

First the meat is thinly sliced and marinated in lemon and pineapple juice, along with vinegar, garlic, chilies and other spices. Each piece is then stacked layer by layer onto a vertical rotisserie, resulting in a skewer of meat that can weigh as much as forty pounds. The product is slow cooked and as the outside edge of the meat is cooked, it is shaved and served in a taco with green onions, cilantro and salsa, or on a plate with onions, peppers, cactus and sometimes cheese.

Foodborne Illness Risk Factor - Improper Holding Temperatures:

Some facilities shave the outside meat as it is cooked and hold it until ordered, at which time they grill it and serve it hot. Other facilities partially cook the meat, turn off the rotisserie and leave it on the skewer until the next wave of customers arrives. Still others partially cook the meat and then hold it in a pan until an order is placed, at which time the meat is grilled to doneness and then served. The reason for not fully cooking the meat is to avoid burning it or causing it to dry out

The problem with this process is that the meat (cooked and partially cooked) is often held at improper room temperatures for lengthy periods of time. The outside edges may be cooked, but the innermost part of the meat may only be partially cooked or raw. Because the raw meat has been marinated in acidic juices and has competing organisms on it, the bacterial risk is relatively low for the product in its raw form. However, the *Trichinella* parasite *spiralis* would still be a hazard in raw or undercooked pork. Once the product is cooked or partially cooked and held, it must be properly handled to prevent the outgrowth of spore-formers.

Control Measures:

Verify the cooking and handling procedure for al pastor. If there is meat on the rotisserie and it is not turning, or the heating element or gas flame is turned off, investigate further to determine how long the meat has been on the skewer, when it was placed on the skewer and how long it has been turned off.



Ensure proper handling of the product in one of the following ways:

- Cooking the al pastor until the edges are browned, shaving the meat off and hot holding the shavings at 135°F or above or cold holding at 41 °F or below until ordered;
- Holding the product (shavings and slices on the skewer) for four hours using time as a public health control with a written tracking system, and then discard the remains; or
- Providing documentation that the preparation process renders the product non-potentially hazardous because it results in the meat having a pH of 4.2 or below. A variance is in place and the food product is prepared under an approved HACCP plan.

**2. Mexican – Barbacoa:**

Background:

Barbacoa is a Mexican specialty dish of meat (beef, pork, goat or lamb) slow-cooked with vegetables, herbs and spices. Although the preparation method and type of meat used depends on the Mexican region the recipe originates from, traditionally it is wrapped in banana leaves or maguey and placed in a pit over hot coals and then buried to slowly cook for hours (12 to 18 is usual). Most U.S. restaurants cook it indoors using modern equipment such as steamers and/or ovens.

There are three types of barbacoa:

- Boneless
- Bone-in
- Whole cow head (including brains) with tongue removed

Preparation Procedure:

Boneless barbacoa is cooked using the modern method of steaming in a pot or in an oven with doves, pimentos, chilies, garlic, salt, barbecue sauce and other spices. It is chopped with a knife and served on corn or flour tortillas.

Bone-in barbacoa is cooked with the same basic ingredients but may be prepared in either the modern way or in the traditional "pit cooking" process and served with rice and beans.

Barbacoa made from cow's head is labor intensive and is usually reserved for special occasions such as holidays or celebrations such as weddings. The traditional "pit cooking" method is the most common way this type of barbacoa





is prepared and involves skinning the cow's head and removing the eyes and tongue (which causes a bad taste to the barbacoa if not removed). It is seasoned with onions, garlic and cilantro, wrapped in banana leaves, covered with maguey or wrapped in a paper bag and then in burlap and roasted or steamed for hours (usually overnight for 12 to 18 hours) until the meat falls off the bone or can be easily pulled.

Foodborne Illness Risk Factor - Inadequate Cooking / Improper Holding Temperatures / Food From Unsafe Sources:

Depending on the cooking method and size of the cut, the meat may be not be cooked enough, to an internal temperature of 145 °F. Once cooked, it must be maintained at the proper hot or cold temperature. Most of the time this isn't a problem but some restaurants turn off their steam tables during certain times of the day, leaving barbacoa and other food items at risk.

Because of the recent USDA ban on the sale of cow brain from cows 30 months or older, any establishment that prepares barbacoa using cow head must have documentation from the distributor which certifies that the processor obtained the head from a cow that was younger than 30 months.

Control Measures:

- Ask the establishment what method they use to prepare barbacoa (steaming, roasting, etc.).
- Ascertain what measures are employed to ensure proper cook temperatures and confirm that it is cooked to 145°F or above for 15 seconds in the thickest portion of the meat.
- Verify that the facility is hot holding the product at 135°F or above or holding at room temperature using time as a public health control with documentation.
- If cold holding, verify that it is being held at 41 °F or below.
- If preparing whole cow head, ask to see documentation from the distributor, which certifies that the processor obtained the head from a cow that was younger than 30 months.

**3. Mexican – Buche:**

Background:

Buche is pork stomach and is a popular item at many Mexican restaurants,



especially those serving immigrants from Mexico and other Central American populations.

Preparation Procedure:

First the buche is washed and chopped. Then it is cooked in a large skillet or pot in salt water and lard until it is tender. Next it is held hot and once ordered, chopped into slivers and grilled until slightly crispy. The meat is served in a tortilla with green onions, cilantro and salsa. Some establishments deep fry it and serve it very crispy.

Foodborne Illness Risk Factor and Regulatory Concern - Improper Holding Temperatures / Misidentification:

Improper Holding Temperatures:

After cooking, buche must be maintained at the proper hot or cold holding temperature. Some establishments turn off their steam tables during slow periods of operation, leaving buche and other food items at improper temperatures. If potentially hazardous cooked foods are not properly held, spore-forming bacteria present in the product may germinate and grow to unsafe levels.

Misidentification:

Buche and tripas (beef intestines) closely resemble each other in certain stages of preparation. Although both are required to be cooked to 145°F or above, source becomes a critical issue with the service of tripas because of the threat of Bovine Spongiform Encephalopathy.

Control Measures:

- Verify that the facility is hot holding the product at 135°F or above, or holding the buche at room temperature using time as a public health control with a written plan tracking the time.
- Verify whether buche, tripas or both products are being served in the facility through invoices and product labeling.

**4. Mexican – Ceviche:**

Background:

Ceviche is a dish traditionally made with raw fish, shrimp and shellfish such as scallops or oysters, marinated in limejuice and combined with tomatoes, onions, garlic, cilantro and chilies. Alternate recipes may include squid, lobster, parsley



and other ingredients. It is served cold, typically as an appetizer, salad or side dish, but sometimes as a main entree. At Mexican restaurants it is usually served with tomatoes, raw onion slices and tortilla chips.

Preparation Procedure:

In some Mexican restaurants in the U.S., all of the seafood in Ceviche is served raw. However, most establishments cook the shrimp, squid and shellfish before adding them to the recipe. The fish, which is a white fish such as mackerel, cod, red snapper, whitefish or pompano, remains uncooked, having been marinated in limejuice for several hours. The acid in the limejuice firms the flesh and turns it opaque, giving it the look and texture of being cooked. The seafood is then combined with tomatoes, onions, garlic, cilantro and chilies and allowed to sit several hours at room temperature before serving.

Foodborne Illness Risk Factor - Inadequate Cooking:

Many operators believe that the acid in the limejuice "cooks" the fish. However, this is incorrect. Fish that is marinated in limejuice can still contain parasites and bacteria, therefore presenting a health risk when the product is consumed.

The health risk from parasites in the fish can be prevented by freezing it prior to preparation. Most refrigerators in retail facilities are unable to freeze fish to the temperatures required to destroy parasitic worms. Operators who have equipment capable of freezing the fish to proper temperatures must keep records on how long they froze the fish and to what temperature(s) the fish was frozen. These records must be maintained for 90 days. If they cannot prove that they are able to freeze the fish adequately in-house, they must have a written agreement or statement from the supplier stipulating that the fish supplied are frozen to a temperature and for a time capable of destroying parasites.

Many suppliers do not know how the fish they are providing to food service facilities and retail food stores are going to be used. Therefore, it is the operator's responsibility to require that the suppliers freeze the fish and provide them with documentation that confirms that the appropriate freezing temperatures for the fish have been met.

Fish is required to be cooked to 145°F to destroy bacteria and parasites that might be on and in the flesh of the product. Establishments that choose to serve fish that has not been treated to destroy pathogens through cooking must provide a consumer advisory that discloses to consumers, which dishes contain raw or undercooked foods and informs them of the risk associated with consuming those products.



Control Measures:

- Determine which seafood ingredients in the Ceviche are raw and whether they require freezing to destroy parasites. (Note: Molluscan shellfish, some species of tuna and certain aqua-cultured fish are exempt from the freezing requirement. See the current Food Code for specific exemptions.)
- Ascertain whether the raw fish has been frozen to destroy parasites in-house or at the supplier. Review documentation that raw, raw-marinated, partially cooked, or marinated-partially cooked fish has been:
  - o Frozen and stored at a temperature of -4°F or below for a minimum of 7 days in a freezer;
  - o Frozen at -31 °F or below until solid and stored at -31 °F or below for a minimum of 15 hours; or
  - o Frozen at -31 °F or below until solid and stored at -4°F or below for a minimum of 24 hours.
- If fish is frozen in-house, check freezers to verify that they are capable of maintaining the product at the specified freezing temperatures.
- Confirm that the establishment has a consumer advisory that discloses to consumers which items contain raw or undercooked seafood and warns the consumer of the risk of consuming these products.

Encourage the proprietor to purchase any seafood that is served raw from reputable suppliers that have high standards for quality, sanitation and safe handling.

**5. Mexico-Chile Rellenos:**

Background:

The chile relleno is a popular dish in Mexican restaurants. In Spanish, the term 'rellenos' means stuffed. The dish is a roasted and peeled pepper (traditionally a poblano pepper) that is stuffed with beef, pork or cheese, dipped in a light egg batter and fried or oven roasted.

In less traditional Mexican establishments, chile relleno will be listed on the menu, but the product may not be a stuffed pepper. Instead, it is a ground beef patty shaped into a ball with pieces of pepper and covered with a flour, egg and

Connoisseurs of Mexican food would argue that this product is not a true chile relleno since it is not a stuffed pepper.

Some restaurants purchase frozen, precooked chile rellenos from suppliers, but most prepare them in-house from scratch. It is usually served as a main entree with rice and beans.

Preparation Procedure:

The meat filling used in the chile relleno is normally the ground beef that is prepared and held on the steam table or stovetop and used in a number of other entrees such as tacos and burritos. It is usually prepared daily. The meat is browned and drained and then other ingredients (onions, garlic, tomatoes, etc.) are added and the mixture is further cooked (baked or sautéed). The peppers are roasted and the skin and seeds removed. They are then stuffed with the filling and coated with a batter made from eggs, salt and flour. Some establishments encase the pepper in an egg roll wrapper instead of coating it with the egg batter. The rellenos are then oven roasted or deep-fried. They may be served plain or with a light tomato sauce or melted cheese.

The patty-type of chile relleno may be prepared 1-2 weeks in advance of service. The preparation method involves shaping ground beef into a ball along with pieces of pepper, then covering it with a cheese, egg and flour coating. The product is then flash fried in a deep fryer long enough to melt the batter around the ground beef, and held frozen until needed.

Foodborne Illness Risk Factors - Improper Holding Temperatures / Inadequate Cooking:

Improper Holding Temperatures:

Authentic chile rellenos may be prepared and held or made to order. If the chile rellenos are precooked days in advance, they must be properly cooled and held until used. For the chile rellenos that are made to order, each potentially hazardous ingredient should be maintained at required temperatures. Once the peppers are roasted, some establishments will hold the peppers at room temperature. However, the peppers are cooked vegetables and require time and temperature control for safety.

The patty-type of chile rellenos are taken from the freezer each day and placed in the cooler or held on the countertop for thawing. Often establishments will leave them out at room temperature during hours of peak operation. This is done in an effort to warm the product up so that it takes less time to heat it during the lunch and dinner rush. When ordered, some operators will heat the chile relleno in the microwave first, then cover it with cheese and place it on a



plate with rice and beans in the oven while others will put it directly on the plate in the oven. However, microwaving usually destroys the consistency of the product, so establishments are reluctant to use this method.

Inadequate Cooking: If a chile relleno is fully cooked, it can be served at any temperature. If it is partially cooked and then cooled, the product must be cooked throughout to the minimum internal temperature for ground beef prior to service.

Control Measures:

- Confirm that cooked peppers are hot held at 135°F or above or cooled properly and cold held at 41°F or below.
- Verify that the patty-type chile relleno is cooked to 155°F.
- Ensure that the chile rellenos (both types) are cooled properly and held at 41 °F or below prior to use, or time as a public health control with proper documentation is implemented, then discarded if not served within 4 hours.

**6. Mexican – Goat:**

Background:

Goat is a common meat popular among many ethnicities, including African, Caribbean, Hispanic, Greek and Indian. It is a common staple among Hispanic people.

Preparation Procedure:

Goat is prepared in a variety of ways, including roasted, braised, curried and in soups and stews.

Foodborne Illness Risk Factor - Food From Unsafe Sources:

While most goat meat is purchased from USDA or state-approved commercial suppliers, some restaurants and markets may obtain goat meat from unapproved sources. Others may purchase a live goat from an unapproved source and process it themselves. Still others raise their own goats at home and slaughter and process them as needed. There have been cases in which inspectors have discovered whole animals, frozen with fur and hooves intact in establishments.

Any goat meat that is not from a USDA or state-approved source is illegal and cannot be served in restaurants or sold in markets.



(Control Measures:

- If goat is on the menu or in a meat display case, ask to see the packaging or invoice in order to ascertain that it comes from an approved source.
- Verify that time/temperature controls appropriate for goat are used.

**7. Mexican – Horchata:**

Background:

Horchata is a traditional Mexican drink often served with spicy foods or as a dessert beverage. The basic ingredients are ground rice or rice flour, sugar and water. Other ingredients may include condensed milk, milk, blanched almonds, cinnamon, lemon zest, vanilla, lime or strawberry flavoring.

Preparation Procedure:

Uncooked rice is covered in water and refrigerated, usually a day in advance. The rice is then drained and blended with water and sugar in a blender, along with other ingredients such as condensed milk and flavorings. It is allowed to sit for several hours and then blended again for several minutes until texture is smooth. Depending upon the consistency, more water may be blended in, as well as additional flavorings. Some establishments have refrigerated counter dispensers, while others keep it in pitchers or other containers. The prepared drink has a milky appearance, even when milk is not used in its preparation.

Foodborne illness Risk Factor - Improper Holding Temperatures:

Some establishments hold horchata at improper temperatures during and after preparation. When the rice is soaked in water and during the blending process, an environment conducive for the growth of *Bacillus cereus* is created. The same would apply when rice flour is used instead of rice. Inadequate holding temperatures can result in the multiplication of *Bacillus cereus* bacteria and the possible formation of a heat-stable toxin that can cause illness when the product is consumed. Therefore, refrigeration at 41°F or below is required, both during the soaking process and after the drink is prepared.

Control Measures:

- Ascertain the preparation procedure for the horchata.
- Verify that the rice is being held at 41 °F or below during soaking.
- Ensure that after preparation, the horchata is cooled to 41 °F within 4 hours and maintained at proper cold holding temperature until service.



## **8. Mexican – Lengua:**

### Background:

Lengua is beef tongue. It is served in a variety of ways, including in tacos, salads, sandwiches and as a main course.

### Preparation Procedure:

The tongue is brought to a boil and then slow cooked with garlic, onions and spices for several hours. It is then skinned and either refrigerated or hot held whole, or it may be sliced or chopped and cold or hot held until an order is placed. It is most commonly served hot on a tortilla with tomatillos, chiles, garlic, cilantro and onions. Other toppings may include serrano peppers, lime wedges, avocado slices, jalapenos, pico de gallo or salsa.

### Foodborne Illness Risk Factor / Regulatory Concern – Improper Holding Temperatures/ Misidentification:

#### Improper Holding Temperatures:

Like any beef product, lengua must be cooked to 145°F. Once cooked, it may be hot held at 135°F or cold held at 41°F. Many establishments take refrigerated lengua and placed it directly on the steam table without first reheating the product. The Food Code requires that it be reheated to 165°F before being placed on the steam table for hot holding and then continuously held at 135°F.

Some establishments routinely turn off the steam tables after lunch and turn them on again before dinner, leaving items such as lengua at room temperature.

#### Misidentification:

Another issue is misidentification. Because of its unusual appearance, many inspectors may not recognize lengua as a beef product.

#### Control Measures:

- Once cooked, beef tongues may be maintained in one of the following ways:
  - o Hot held at 135°F or above;
  - o Held for four hours or less using time as a public health





control with the proper documentation, then discarding after 4 hours if not served;

- o Properly cooled and then held at 41°F until ordered, at which time the product is reheated to any temperature and served immediately to the customer; or
  - o Properly cooled and then held at 41°F, after which it may be reheated to 165°F and then held continuously at 135 °F, or held for up to 4 hours using time as a public health control with the proper documentation, then discarded if not served.
- Be able to identify beef tongue.

## 9. **Mexican – Menudo:**

### Background:

Menudo is a spicy soup made with tripe (beef stomach), hominy, chile, garlic and other spices. It is a traditional Mexican dish, often served for breakfast or on special occasions.

The origin of menudo is not exactly known. Some accounts claim that it was invented long ago during war times, when the cattle in villages were slaughtered and the meat given to Mexican soldiers, leaving only the remains (organs, hooves, tail, etc.) for the villagers. Other stories attribute it to wealthy landowners taking the desirable parts of the cow for themselves and giving what was left of the carcass to their poor farm workers. The poor, not wanting to waste any part of the carcass, took the entrails (and sometimes the feet) and made a soup from them. To make the soup palatable, they spiced it up with chiles and added hominy to it.

Regardless of its origin, today menudo is a popular dish eaten on special occasions by Mexicans from all walks of life. Most Mexican restaurants that serve menudo offer it as a special item on weekends and holidays. It is also believed by many to be a cure for hangovers.

### Preparation Procedure:

Menudo is prepared by first thoroughly washing the tripe, cutting it into bite-sized pieces and then combining it with the various ingredients and water in a large pot. It is then brought to a boil and stewed for several hours. The broth is reddish in color. It is usually served in a bowl with lemon slices and other condiments such as avocado slices, onions and shredded lettuce. It may also be served as a taco.



Regulatory Concern – Misidentification:

Because of its unusual appearance, many inspectors may not recognize menudo as a beef product requiring temperature control.

Control Measures:

- Recognize menudo in both its raw and cooked states.
- Verify that the product is cooked to 145°F or above and held at 135°F or above.

**10. Mexican - Refried Beans:**

Background:

Refried beans are a Mexican staple served as a side dish or as a filling for various tortilla preparations.

Preparation Procedure:

Dried pinto beans are soaked for several hours and then boiled until soft. Next, the beans are mashed, mixed with various seasonings and lard, vegetable oil or butter until a smooth paste is formed.

Foodborne Illness Risk Factor – Improper Holding Temperatures:

One of the most common problems with refried beans is the cooling procedure. Refried beans are usually made in large quantities and often left sitting out at room temperature. Establishments may be reluctant to refrigerate the beans out of fear that the beans will cool on the outside and stay hot on the inside, causing the product to sour. Although beans can sour when placed in the refrigerator in large quantities, this can be easily avoided by cooling large containers of beans in an ice bath, by using a chill stick, or by placing the beans in shallow pans before refrigerating.

Many establishments take refried beans directly from the refrigerator to the steam table without first reheating the product. Because the beans are very dense, it is difficult to get them up to proper temperature in this manner. The beans must be reheated to 165°F within 2 hours before placing on the steam table. Once on the steam table, the beans must be held at 135°F or above. The beans may also be reheated and held at room temperature using time as a public health control with documentation.



Control Measures:

- Verify the cooling procedures for refried beans. Refried beans must be cooled from 135°F to 41°F within 6 hours, provided that they are cooled from 135°F to 70°F within the first two hours. (Note: If refried beans are stored in refrigerators in bus pans and large stock pots, assist the operator with proper cooling methods if the product is being cooled in those containers. Times of inspections should be varied so that different phases of cooling can be observed.)
- Confirm the reheating procedure for refried beans. Beans must be reheated to 165°F within 2 hours before placing on a steam table or other hot holding unit.
- Verify that beans are maintained at 135°F or above during hot holding.

**11. Mexican – Rice:**

Background:

Rice is a Mexican staple served as a side dish or as a filling for various tortilla preparations.

Preparation Procedure:

First the rice is soaked to remove the starch, then rinsed. Next, the rice is sautéed in a large saucepan or skillet over medium heat until rice begins to brown. Once the rice begins to brown it is added to sautéed chopped garlic, onions and tomatoes and cooked some more. After a few minutes, water, tomato sauce and spices are added and the mixture is brought to a boil, then covered and simmered until tender.

Foodborne Illness Risk Factor – Improper Holding Temperatures / Inadequate Cooking:

Improper Holding Temperatures:

One of the most common regulatory problems with rice is the cooling procedure. It is usually prepared in large quantities and then often left sitting out at room temperature. Establishments may be reluctant to refrigerate the rice out of fear that it will sour. Although rice can sour when placed in the refrigerator in large quantities, this can be easily avoided by cooling large containers of rice with an ice bath or by placing the rice in shallow containers before refrigerating. Leaving the rice at room temperature invites bacterial growth and toxin formation, and is a violation of the Food Code.



### Inadequate Cooking:

Many establishments take rice directly from the refrigerator to the steam table without first reheating the product. Because the rice is very dense it is difficult to get it to proper temperature. The rice must be reheated to 165°F before placing on the steam table. Once on the steam table, it must be held continuously at 135°F or above. Many establishments also hold rice cooked for lunch or dinner service out of temperature control for longer than 4 hours prior to placing it on the steam table.

### Control Measures:

- Observe the cooling procedures for rice. Typical problems to look for are rice kept in bus pans or large stockpots. If the establishment claims to be cooling the rice in smaller containers and then placing it back in the larger container, suggest that they keep a log of the procedure. Rice must be cooled from 135°F to 41°F within six hours, provided that it is cooled from 135°F to 70°F within the first two hours. If the procedure is not getting the temperature to 41° F in the six hours described in the Food Code, then the inspector should assist them in making changes in their cool-down methodology, such as using an ice bath, smaller containers or thin layers on sheet pans.
- Observe the reheating procedure for rice. It must be reheated to 165°F within two hours before placing on steam table for hot holding.
- Observe the hot holding procedure. Reheated rice must be hot held at 135°F or above.

## **12. Mexican – Sesos:**

### Background:

Sesos is beef brains, fried and served as a taco filling, in tamales, empanadas, as a sandwich or with flour tortillas. It may also be served as an entrée with rice and beans.

### Preparation Procedure:

First, the brains are placed in a saucepan with water, vinegar and salt and simmered over low heat for about 15 minutes. They are then drained, rinsed in cold water and allowed to cool.



The cooled brains are then placed in a non-reactive bowl and sprinkled with salt and pepper and allowed to stand for an hour at room temperature. Afterwards they are cut into bite-sized pieces, dipped in beaten eggs, rolled in flour and fried in lard or vegetable oil.

Foodborne Illness Risk Factor – Food From Unsafe Sources:

On January 12, 2004, the Food Safety Inspection Service (FSIS) of the United States Department of Agriculture (USDA) issued new rules to further minimize human exposure to materials that scientific studies demonstrated contain the Bovine Spongiform Encephalopathy (BSE) agent in cattle infected with the disease. FSIS issued the rules in response to the diagnosis on December 23, 2003, of BSE in an imported dairy cow in Washington State. The animal had been imported from Canada. One of the rules, “Prohibition on the Use of Specified Risk Material (SRM) for Human Food and Requirements for the Disposition of Non-Ambulatory Cattle” referred to as “the SRM interim final rule” designated certain materials from cattle as Specified Risk Materials and declared that SRMs are inedible, and prohibits the use of these materials for human food. The materials identified as SRMs in the rule are the following:

- brain, skull, eyes, trigeminal ganglia, spinal cord, vertebral column (excluding the vertebrae of the tail, the transverse processes of the thoracic and lumbar vertebrae, and the wings of the sacrum), and dorsal root ganglia (DRG) of cattle 30 months of age and older, and
- the distal ileum of the small intestine and tonsils from all cattle.

Due to the ban on the sale of cow brains from cattle 30 months of age or older, it is crucial that records be provided that validate the age of the brain used in the facility.

Control Measures:

- Verify the source of the brain through invoices and packaging.
- Confirm that the processing company is approved to sell beef brains by contacting the United States Department of Agriculture.
- If the source cannot be confirmed, discard the product.
- Verify that sesos is cooked to 145°F or above and is properly cold and hot held before and after cooking.

### **13. Mexican – Tamarindo:**

#### Background:

Tamarindo is a tart, refreshing cold drink made from the seed pods of the tamarind tree. The pod is bean-like in appearance, pale brown in color and is approximately 3-8” in length.

#### Preparation Procedure:

Whole tamarind pods are added to boiling water, along with sugar or honey. Some establishments may remove the pod covering before boiling. After boiling for one minute, the mixture is allowed to stand for several minutes, then drained, rinsed and drained again. The seeds, stems and strings are removed and the pods are placed in more hot water and allowed to stand for 2 to 4 hours. Afterwards, the pods are strained and the liquid reserved. The pods are then pressed through a sieve to extract the pulp, which is then mixed into the reserve liquid, along with more sugar or honey if necessary. The beverage is then refrigerated until chilled and served on ice.

#### Regulatory Concern – Misidentification:

Because of its unusual appearance, food regulators may not readily identify the tamarind pod as a beverage ingredient.

#### Control Measures:

- Know what a tamarind pod looks like and understand that it is a beverage ingredient.

NOTE: Tamarind pods may also be found in Asian food establishments and markets.

### **14. Mexican – Tripas:**

#### Background:

Tripas (also known as 'tripitas') are beef small intestines that are boiled, sliced thinly and fried. They are usually served in tacos and are extremely popular in Latino communities, especially those with large Mexican-American populations. In some parts of Mexico, tripas are as popular as hotdogs or hamburgers are in the U.S. The 2004 ban on tripas and other beef products by the USDA (see below) had a negative cultural and economic impact on many communities where tripas are eaten several times a week and some businesses that rely on the sale of tripas for a significant portion of their income. The ban was lifted in September 2005.



Preparation Procedure:

First, the intestines are thawed and thoroughly washed. Next, they are boiled with onions, garlic, salt and sometimes milk for several hours. After they are cooled, they are sliced into small pieces and rebelled or fried with lard. The tripas are then either held hot until ordered or they are cooled again and refrigerated until ordered, at which time they are reheated on a grill or in a skillet and served in a com tortilla with onions, cilantro, lime wedges and salsa.

Foodborne Illness Risk Factor - Food From Unsafe Sources:

On January 12, 2004, the Food Safety Inspection Service (FSIS) of the United States Department of Agriculture (USDA) issued new rules to further minimize human exposure to materials that scientific studies demonstrated contain the Bovine Spongiform Encephalopathy (BSE) agent in cattle infected with the disease. FSIS issued the rules in response to the diagnosis on December 23, 2003, of BSE in an imported dairy cow in Washington State. The animal had been imported from Canada. One of the rules, "Prohibition on the Use of Specified Risk Material (SRM) for Human Food and Requirements for the Disposition of Non-Ambulatory Cattle", referred to as "the SRM interim

final rule", designated certain materials from cattle as Specified Risk Materials and declared that SRMs are inedible, and prohibits the use of these materials for human food. The materials identified as SRMs in the rule are the following:

- brain, skull, eyes, trigeminal ganglia, spinal cord, vertebral column (excluding the vertebrae of the tail, the transverse processes of the thoracic and lumbar vertebrae, and the wings of the sacrum), and dorsal root ganglia (DRG) of cattle 30 months of age and older, and
- the distal ileum of the small intestine and tonsils from all cattle.

Although scientific evidence had only confirmed BSE infectivity in the distal ileum, the bottom portion of the small intestine, the entire small intestine was banned from being processed for human food in the United States by FSIS. The Food and Drug Administration (FDA) in July of 2004 instituted an equivalent ruling that banned the use of such materials in human food, including dietary supplements and in cosmetics.

After examination of research that showed that the proper removal of the distal ileum provided the same level of protection from human exposure to BSE infection as the exclusion of the entire small intestine, an amendment to the rule was announced by FSIS on September 7, 2005. The amendment permits beef small intestines, excluding the distal ileum, to be used for human food, provided that such product is derived from cattle that were slaughtered in an official establishment in the United States or in a certified foreign



establishment from a foreign country that is eligible to export beef products to the United States. This rule went into effect October 7, 2005.

Although the ban on the consumption of small intestines has been lifted, plants that process the intestines for food must document through a HACCP plan, Sanitation Standard Operating Procedures or other prerequisite programs that have written procedures for the proper removal of the distal ileum. FSIS has deemed that a procedure requiring the removal of 80 inches of the uncoiled and trimmed intestine as measured from the juncture of the ileum and the cecum would be in compliance with the requirement.

Control Measures:

- Ascertain the source of the beef intestines.
- Verify with the USDA that the company is approved to process small intestines for human consumption.
- If the source cannot be verified, discard the product.
- Ensure that, after cooking, tripas are properly cooled and/or hot or cold held.

**H. South American:**

Although South America is made up of 13 countries, this learning tool focuses on the three countries from which immigrants to the U.S. have established a significant number of restaurants and food markets featuring the cuisines of their country. They are Brazil, Peru and Argentina.

These countries' cuisines have been heavily influenced by significant European, Asian, African and Middle Eastern immigrations to those countries in the 19 th and 20 th centuries. Of course, the native Indian population and native foods have also played a large role in the vast array of foods enjoyed there, and in U.S. restaurants and markets owned and operated by native South Americans.

Most of the food products you will encounter in these facilities are similar to the types of foods you find in American restaurants. However, there are a few items/styles of cooking which deserve a closer look, as many food inspectors may be unfamiliar with them and therefore unaware of special considerations that must be made when dealing with these foods during an inspection.



## 1. **South American – Churrascaria:**

### Background:

A Churrascaria (pronounced “shoe hoss Korea”) is a Brazilian steakhouse.

The style in which the meats are cooked is called ‘churrasco’, which translates roughly from the Portuguese for 'barbecue'. This style of cooking owes its centuries-old origins to the gauchos (cowboys) of southern Brazil, who would roast the meats over an open fire pit.

A typical churrascaria serves a wide variety of meats, including beef, pork, chicken, lamb, goat, alligator and kangaroo. The cuts include steaks, ribs, loin chops, sausages, ham slices, chicken breast medallions and more.

### Preparation and Serving Procedure:

First the meats are seasoned, seasoned and marinated or infused with red or white wine, citrus juices and various spices, depending on the type and cut of meat. Some cuts of meat are bacon wrapped, such as filet mignon and chicken breast medallions.

After seasoning or marinating for up to 12 hours, the meats are slow roasted rotisserie-style on rotating skewers over an open flame or charcoal bed. The meats are cooked to varying states of doneness, at which point the servers remove them from the grill and take them out into the restaurant dining room to serve.

Different servers come to individual tables in quick succession with knives and a skewer, each with a different kind of meat. The server (gaucho) serves the entire portion from the skewer or carves the meat while the patron holds the edge of the slice with tongs and pulls the portion toward their plate. Once the meat that is sliced is free of the skewer, the patron places it on their plate.

After serving several portions of meat, the server will take the skewer back to the kitchen for further cooking or reheating. Some of the cuts of meat are thick and therefore may be rare in the middle.

### Foodborne Illness Risk Factors – Inadequate Cooking / Cross Contamination / Improper Holding Temperatures:

#### Inadequate Cooking:

Different types of meat require different cook temperatures. It is important to make sure that the restaurant is checking the temperature of each skewer of meat before serving it.



In some cases, the meat may be removed from the heat before it is cooked to required temperatures. This is because the meat is sliced from the outside and the gauchos do not want it to be burned. It is important that the preparers are knowledgeable of the required cook temperatures for each type of meat they are cooking and have been trained to properly monitor the products.

If the establishment is tenderizing whole muscle meats (i.e. puncturing, pinning, injecting, marinating or pounding the meat), they may be inserting bacteria into the center of the meat. If these meats are served rare or undercooked, harmful bacteria may survive that could cause illness when consumed. If the restaurant is prepping meats in this manner, they will need to have a consumer advisory for undercooked meats that are served.

#### Cross Contamination:

There are several contamination or cross contamination issues associated with churrascaria restaurants:

**Preparation** – Because the rotisserie spits are multi-level, it is crucial that the meats are rotated to ensure that the most done cuts are on the top level. If raw meat is placed above meat that is nearly done or is being reheated, the drippings may contaminate the meat on the bottom level. For the same reason, it is also essential that adjacent meats not touch one another during the cooking process.

**Storage** – Raw chicken should never be held touching raw beef or other meats in the cooler. No meat should touch another type of meat in the cooler, or be stored in such a way that dripping could occur from one meat onto another.

**Service** – When the server is carving meat at the patron’s table, it is important to make sure the patron never comes in direct contact with the meat until it is on their plate. Using the tongs will prevent this, but patrons may forget and try to use their forks instead of the tongs. This should never be permitted. In addition, the server must make sure the skewer of meat never touches the patron’s plate.

Walking throughout the restaurant with large cuts of meat presents the opportunity for unintentional human contamination, such as exposure to sneezing customers or physical contact from a patron or another server. Regardless of the type of contamination, servers should mitigate any potentially harmful effects by proper reheating or discarding the meat.

Servers who are filling multiple roles such as prepping, cooking and serving must wash their hands between handling raw or undercooked meats and cooked meats and as often as necessary to prevent contamination.



***Sanitization*** - Used meat skewers must be properly washed, rinsed and sanitized and then stored for reuse.

Improper Holding Temperatures:

Sometimes the meats are cooked in advance, refrigerated and then reheated. Most restaurant coolers are not large enough to accommodate this type of process. Having too many hot meats stacked together in a cooler can prevent proper cooling and result in bacterial growth. The establishment must follow proper cooling procedures of cooling the meats from 135°F to 70°F within the first two hours and from 135°F to 41°F within a total of six hours.

***Holding vs. Immediate Service*** - Some meats take longer to cook than others, so many restaurants pre-cook them and serve them later. On a typical churrascaria rotisserie, the meats on the very top level away from the flames are being hot held. It is important to make sure those meats are holding at 135°F. An extreme difficulty for the regulator lies in being able to distinguish which meats on the lower levels are cooking and which are being reheated for hot holding versus immediate service. The important thing is to make sure the establishment understands the proper cooking, reheat and holding procedures for meats in various states of preparation.

***Reheating*** - In the churrascaria, fully cooked meats that have been held cold at 41°F or below that are reheated for hot holding must be reheated to 165°F. Fully cooked meats that have been held cold and are reheated for immediate service may be reheated to any temperature.

Most churrascarias do not serve leftovers. However, always ask what the facility does with leftover meats. If the establishment serves these meats, ensure that the proper procedures for storage and reheat are followed.

Servers who are filling multiple roles such as prepping, cooking and serving must wash their hands between handling raw or undercooked meats and cooked meats and as often as necessary to prevent contamination.



Control Measures:

Pork	145°F
Chicken	165°F
Lamb	145°F
Goat	145°F
Alligator	145°F
Kangaroo	145°F

- Observe restaurant operations to ensure that:
  - o Marinating meats or other meats are not being stored touching other types of meats or in such a way that they could drip onto other meats;
  - o Meats on the rotisserie are positioned so that the least cooked meats are always on the bottom level and the most cooked meats are always on the top level;
  - o Meats on the rotisserie are not touching one another;
  - o Servers are not touching meats to consumer plates;
  - o Patrons or servers are not coming into direct contact with the meat other than with tongs; and
  - o Potential contamination in the dining room is mitigated by proper reheating or discarding of product.
- If meats are being pre-cooked, verify the cooling procedures. Ask to see meats that are being cooled to ascertain that proper cooling procedures are being followed and that proper cooling temperatures are being achieved.
- Make sure the establishment understands the proper holding procedures for meats in various states of preparation.
- Check numerous products to ensure proper holding temperatures are being maintained.
- Confirm that meats are being reheated to proper temperatures.
- Monitor that meat skewers are properly cleaned and sanitized and stored for reuse.



- Observe servers who are filling multiple roles such as prepping, cooking and serving to verify that hand washing is performed between handling raw or undercooked meats and cooked meats.
- Confirm that the establishment has a consumer advisory that discloses to consumers which meats are served undercooked and warns the consumer of the risk of consuming these products.

## **I. Vietnamese:**

According to the 2000 U.S. Census, there are approximately 1.2 million native-born Vietnamese people living in the United States. The largest concentration of Vietnamese immigrants lives in San Jose, CA and Houston, TX. However, there are many sizable Vietnamese communities in states ranging from New York and Pennsylvania to Virginia and Georgia.

Vietnamese cuisine is rapidly growing in popularity in the U.S., as people continue to explore ethnic foods and discover the delicious soups and other dishes that make up the Vietnamese's varied and healthy food offerings. While the Vietnamese diet relies heavily on rice, pasta, vegetables, fish and pork, Vietnamese cooking also includes a number of unusual foods, culinary practices and cultural differences with which U.S. food inspectors need to be familiar.

### **1. Vietnamese – Baluts:**

#### **Background:**

A balut is a fertilized duck or chicken egg with a nearly developed embryo inside that is boiled and eaten straight from the shell. In Vietnam and the Philippines, it is considered a delicacy and is eaten as a hearty snack. It is high in protein and is widely believed to be an aphrodisiac. Baluts are commonly purchased and prepared at home.

#### **Preparation Procedure:**

In producing baluts, fertile duck eggs are incubated for approximately 18 days at a temperature of 108.5°F in incubators with a relatively high humidity. Where chicken eggs are used in preparing baluts, the incubation period may only be 14 days at 99°F. After incubation, baluts are usually held at room temperature until cooked, and most often are found held at room temperature in retail establishments.

There have been reports that baluts held in warm temperatures in warehouses have actually hatched ducklings, but normally the embryonic duckling will die in a short period of time when removed from the incubator. Refrigeration keeps the balut from deteriorating.

After being boiled for approximately 20 minutes, the balut is ready to eat. The shell is cracked and the balut is eaten right out of the shell, sometimes with a sprinkling of salt and/or vinegar. All of the contents of the egg are consumed with the exception of a hard white chunk (the *bato* or "rock") that is found in the bottom of the egg. The embryo inside is recognizable as a baby duck and may have tiny feathers, which are eaten along with the rest of the balut.

#### Foodborne Illness Risk Factor – Improper Holding Temperatures:

Baluts are derived from fertile eggs, usually duck eggs, subjected to incubation temperatures for a period of time less than necessary for the embryo to hatch, resulting in a partially formed embryo within the shell. Typically, an egg is considered adulterated if it has been incubated. However, baluts are specifically exempted from inspection as eggs in 9 CFR 590.5. During incubation, conditions are conducive for the potential growth of *Salmonella Enteritidis* within the shell, and an increase in pathogenic organisms on the shell itself. Baluts are deemed as a food requiring time-temperature control for safety in Chapter 290-5-14 and therefore must be properly held prior to and after cooking. Even so, some scientists would still argue that a balut is a living organism and should not be refrigerated.

#### Control Measures:

- Verify that baluts are held at 41°F or below.
- If cooked on-site, confirm that baluts reach an internal temperature of 165 °F.

## **2. Vietnamese - Bean Sprouts:**

#### Background:

Bean sprouts are a popular and versatile food used in Vietnamese cooking. Sprouted from mung bean seeds, bean sprouts have a crunchy texture and nutty flavor. They may be used as a garnish, soup ingredient, spring roll filling and as a substitute for noodles. Although light and airy in consistency, sprouts contain a variety of nutrients, including vitamins A, B and C, thiamin, riboflavin, niacin and ascorbic acid, and are an important source of nutrition in the Vietnamese diet.



Preparation Procedure:

Bean sprouts are prepared in a variety of ways, including served raw, steamed, stir fried, or added as an ingredient to soups and many meat and vegetable dishes. While many Vietnamese restaurants order their bean sprouts from a produce distributor, on occasion an establishment will grow its own sprouts in-house from seeds. Regardless of source, bean sprouts are a potentially hazardous food and must be treated accordingly.

Foodborne Illness Risk Factor – Improper Holding Temperatures:

Mung beans, like other raw agricultural products, may contain pathogens such as Salmonella and E. coli. Since 1999, when the FDA originally issued its health advisory on sprouts, there have been several reported foodborne illness outbreaks in the U.S. associated with sprouts. Among the seven outbreaks of salmonella in the U.S. since 1999, four were associated with mung bean sprouts and two with alfalfa sprouts. All mung bean outbreaks and one alfalfa sprout outbreak involved salmonellosis. The mung bean outbreaks have been associated with raw or lightly cooked sprouts.

Sprouts produced from contaminated seeds are of special concern because of the potential for pathogen growth during the sprouting process, even though the pathogen may not be detected on the seed using standard sampling and laboratory methods. If pathogens are present on or in the seeds, sprouting conditions (environmental conditions and the nutrients) may favor their proliferation. In addition, the sprouting process does not have any inherent steps to reduce or eliminate pathogens.

In 2002 the FDA issued a health advisory warning consumers of the risks associated with eating raw sprouts due to an outbreak of E. coli associated with alfalfa sprouts. The advisory also included raw and undercooked mung bean sprouts.

Since bean sprouts are a staple of Vietnamese cooking, they are of particular concern to regulators inspecting Vietnamese restaurants and markets. Raw bean sprouts are served as a side dish with almost every serving of soup, which is a popular menu item. In order to have the sprouts easily accessible for the many bowls of soup that are served, many establishments leave containers of raw sprouts in water out at room temperature for long periods of time. Pathogens present in bean sprouts can multiply between 41°F and 135°F, so to prevent bacterial growth they must be maintained at proper temperatures, or held for no more than 4 hours, after which they must be discarded.



Control Measures:

- Verify that bean sprouts are being held at 41°F or below or time as a public health control is implemented with proper documentation.
- If beans are sprouted in-house, a variance and HACCP are required.

**3. Vietnamese – Beverages:**

Background:

Many Vietnamese food establishments carry a variety of traditional drinks. Among them are Basil Seed Drink, Rainbow Drink and Chinese Fortified Drink. Some establishments may also sell commercially produced drinks, but many proprietors prefer to make their own in-house.

Preparation Procedure:

Nuoc Da Hot E (Basil Seed Drink) – Prepared by combining basil seeds, sugar, honey and water. Additional flavoring may include rose water, vanilla or peppermint. After a few minutes the basil seeds expand, giving the drink an unusual appearance, as if it contains tadpoles/frog eggs. It is not uncommon to see commercially produced bottles or cans of this drink alongside the homemade version.

Che Ba Mau (Rainbow Drink) – This beverage is prepared by adding softened yellow mung beans and sugar to simmering water and cooking until the water is absorbed. Next, more water is boiled and red mung or azuki beans and sugar are added and cooked until the beans are softened. Next, coconut milk and water are boiled and sugar and tapioca are added. Finally, all of the ingredients are mixed (or layered), along with jello bits and dried longan fruits, to create a colorful dessert drink.

Che Sam Bo Luong (Chinese Fortified Drink) – A mixture of longan fruit, seaweed, black dates and white lotus seeds in syrup.

Regulatory Concern – Labeling / Source:

These beverages pose no health risk if kept refrigerated. However, once a product is packaged and placed into a display cooler for self-service, it must be properly labeled. The information must be written in English, but can also be dually written in Vietnamese. Many Vietnamese food establishments that make beverages in-house do not label them.





In addition, if the proprietor is using herbs and other natural ingredients as a beverage ingredient, it must be confirmed that they are being obtained from a reputable source. Some establishments purchase these ingredients in bulk in packages with no labeling.

Control Measures:

- Check display coolers to make sure each beverage is labeled with the following information:
  - Name of beverage
  - Ingredients
  - Quantity
  - Nutritional information (unless exempt)
  - Manufacturer's name and address (if made on the premises, the name and address of the manufacturer should be that of the restaurant or store)
  - Name of the food source for each major food allergen in the food unless the food source is already part of the common or usual name of the respective ingredient
- If beverages are prepared in-house using natural ingredients, check packaging or labeling to ascertain whether the ingredients are obtained from a reputable source. If they have purchased it in bulk with no labeling, verify where they purchased it through invoices or receipts. If there is concern that the vendor may not have obtained the products from an approved source, consult the agency that has jurisdiction over the product.

**J. USA – Soul Food:**

'Soul food' is the term used for the ethnic cuisine traditionally eaten by African Americans in the southern United States. This style of cooking originated during the time of slavery, when African slaves were given only leftovers and the parts of animals that the plantation owners didn't eat, such as pig's feet and ears, ham hocks, hog jowls, skin and intestines. Deprived of most of their native African vegetables and fruits (okra, rice, black-eyed peas and watermelon being exceptions), the slaves learned to cook with the types of foods grown on the plantation or indigenous plants and animals found in the regions where they lived. Vegetables included yams, onions, cabbage and greens such as collard, mustard and turnip greens. Most slave families also received a small allotment of corn meal and sometimes sorghum.

Using these few ingredients and items, such as lard, salt, garlic and whatever herbs were grown locally, slave women created a variety of delicious dishes that made their way into the mainstream of Southern cooking and exist today as regional favorites. These include fried chicken, grits, hush puppies, corn bread, bread pudding,



croquettes, chow chow, fried pies and many others.

The term ‘soul food’ became popular in the 1960’s, as the civil rights movement inspired African Americans to embrace and reclaim their ethnic heritage and culture. Along with terms like “soul music”, “soul food” identifies one of the many unique contributions to American culture made by the first African Americans and their descendants.

Today, soul food restaurants can be found in every major U.S. city and anywhere else where there are sizable African American communities. What began as a means of survival became an enduring legacy passed down from generation to generation. Today it claims a respected place among America’s unique and celebrated cuisines and is enjoyed by people of all ethnicities. While most of the dishes found on a soul food menu can be found in any restaurant serving traditional American fare, there are a few items with which some food inspectors may not be familiar. This section addresses those items and any regulatory concerns that may accompany them.

### **1. Soul Food – Oxtails:**

#### Background:

Oxtails (beef or veal tail) are a popular soul food dish and are usually served as a stew or braised and served over rice with brown gravy. Oxtails are usually purchased in two forms: 1) the whole tail, which is several feet long, and 2) already cut into small portions. Most often, they come packaged in a box.

#### Preparation Procedure:

Oxtail stew ingredients may vary, but usually include onions, carrots, garlic, tomatoes and spices. Sometimes green beans, lima beans, potatoes, turnips, cabbage and other vegetables are added. The dish is slow cooked for several hours and served with rice or other vegetable side dishes.

Braised oxtails with brown gravy first involves searing the oxtails in hot oil and then boiling them, along with garlic, onions and spices for several hours until the meat is very tender. Next, the brown gravy is prepared using bacon grease, broth from the oxtails, flour and seasonings. The final step consists of placing the oxtails back in the skillet, mixing them with the gravy and cooking over low heat for several minutes.

#### Regulatory Concern – Misidentification:

Oxtails are seen primarily in Caribbean and Soul Food restaurants. Inspectors who do not have a number of these facilities in their jurisdiction might not recognize what they are and how they should be handled. Oxtails are beef and should be cooked to 145°F. Before and after cooking, they require



time-temperature control for safety and should be held, stored and/or properly cooled to prevent the growth of bacteria. As is the case with any meat, oxtails must be received from an approved source. To determine whether the product is from an approved food source, check for the inspection marking from USDA or the state inspection program on the package label.

Control Measures:

- Recognize raw and cooked oxtails.
- Verify that it is from an approved food source through examination of packaging and invoices.
- Verify that time/temperature controls appropriate for beef are used.

**2. Soul Food – Chitterlings:**

Background:

Chitterlings are the small intestines of a pig. They can be prepared in a variety of ways. They are a popular dish in the Deep South as well as other parts of the United States. Pig intestines are also popular in many other areas of the world, including Asia, Central America, South America and the Caribbean.

Preparation Procedure:

Chitterlings are generally pre-cleaned by the commercial food processor prior to sale. However, once received by the food establishment, additional cleaning is usually needed. Some establishments clean and wash the chitterlings numerous times in water, while others par-boil them and then clean and wash them in water before cooking. Once the chitterlings have been thoroughly cleaned, they are chopped into small pieces about an inch in length and boiled or simmered until tender, which can take from 1 to 3 hours. They are then seasoned with a variety of ingredients, depending on the establishment. Typical ingredients include salt, onion, celery, garlic, red pepper, green pepper and/or vinegar during cooking. Once the chitterlings are tender, they are drained and served immediately, held hot, or cooled and refrigerated for later use. Other ways to prepare chitterlings include taking the tender chitterlings and sautéing them in butter, or dipping them in a flour and egg batter and deep-frying them.

Foodborne Illness Risk Factor – Contaminated Equipment / Poor Personal Hygiene/ Improper Holding Temperatures:

Contaminated Equipment:



Care must be taken when preparing chitterlings, due to the prevalence of *Yersinia enterocolitica* bacteria on the product. *Yersinia enterocolitica* is of particular concern because freezing does not destroy it, it grows at refrigerated temperatures and the infective dose is not known. However, heat and sanitizers destroy the pathogen. It is important that proper hygiene is followed to prevent employees from spreading the bacteria to other food, equipment and utensils.

Poor Personal Hygiene:

Cleaning raw chitterlings can transfer *Yersinia enterocolitica* bacteria to hands and surfaces throughout the kitchen. Therefore, to avoid possible contamination of food contact surfaces and cross contamination of ready-to-eat foods, it is recommended that chitterlings be parboiled to destroy *Yersinia enterocolitica* as a first step before any cleaning or preparation takes place. If frozen, chitterlings should be thawed in the cooler and then placed into boiling water, dispersed by stirring and then brought back to a boil for 5 minutes. Parboiling for 5 minutes and then cooling before cleaning should reduce the risk of yersiniosis. Cooling may be accomplished by placing the intestines under cold running water or covering the product with ice.

Improper Holding Temperatures:

After cooking chitterlings, many establishments pour them into bus pans and store them in the cooler until needed. Because of the large quantity, proper cooling may not occur. It is recommended that the establishment cool the chitterlings prior to placing them in the cooler by using an ice bath or chill stick. Another method to facilitate proper cooling of the product is to place the chitterlings in the cooler in shallow pans.

Cooked chitterlings taken directly from the refrigerator for immediate service may be reheated to any temperature as long as they have been properly cooled. However, if the chitterlings are going to be hot held, they must be reheated to 165°F and held at 135°F. If reheated in a microwave oven, the product must be covered and allowed to stand for 2 minutes after reheating.

Control Measures:

- Observe the prep procedure to confirm that chitterlings are boiled for at least 5 minutes before cleaning and washing, and that food and non-food contact surfaces contacting raw chitterlings or chitterling containers are washed, rinsed and sanitized.



- Ensure that employees that are handling chitterlings are properly cleaning hands and exposed portions of their arms, and changing outer clothing if contamination of clothing occurs.
- Verify the cooling procedure for cooked chitterlings. Chitterlings must be cooled from 135°F to 41°F within 6 hours, provided that they are cooled from 135°F to 70°F or lower in the first two hours. (Note: If chitterlings are stored in refrigerators in bus pans and large stockpots, assist the operator with proper cooling methods. Times of inspections should be varied so that cooling can be observed.)
- Confirm that chitterlings that are reheated for hot holding are reheated to 165°F within 2 hours and then held at 135°F or above.

### **3. Soul Food – Pig’s Feet / Neck Bones:**

#### Background:

Pig’s feet and neck bones are popular dishes in soul food restaurants. The feet may be boiled, barbecued or pickled. Neck bones are usually boiled or stewed. Both are often eaten with vinegar and hot sauce.

#### Preparation Procedure:

In soul food restaurants throughout the United States, the most common way pig’s feet and neck bones are served is boiled. Both are prepared by first washing the items, bringing them to a boil and then washing them again. Next the feet or bones are boiled and then simmered for several hours with ingredients that may include onions, garlic, red peppers, and bay leaves.

#### Foodborne Illness Risk Factor - Improper Holding Temperatures:

Some food establishments have a tendency to leave pig’s feet and neck bones sitting on the stove after cooking. Unless the entire product is going to be served within four hours or less, this is not permitted. Instead, both items must be properly cooled like any other pork product. Pig’s feet are somewhat thick and may take longer to cool than other products, so strategies must be employed to cool the product within the required time limits.

If served right out of the refrigerator, pig’s feet and neck bones may be reheated to any temperature as long as they have been properly cooled. However, if they are going to be hot held, they must be reheated to 165°F before being placed on the steam table. Once on the steam table, they must be held at 135°F.



Regulatory Concern – Misidentification:

Pig's feet are somewhat unusual in appearance, so it is important to be able to identify them as a pork product requiring time or temperature control for safety.

Rarely is the cooking temperature an issue with pig's feet, because for palatability the product must be cooked to a high enough temperature to soften the flesh.

Also, some inspectors may mistake neck bones in the raw state as just leftover bones with the meat removed, and not realize that they are going to be utilized by the facility.

Control Measures:

- Be able to recognize pig's feet and neck bones in both their raw and cooked states.
- Confirm that cooked pig's feet and neck bones are maintained at 135°F or above, or held only 4 hours and discarded using time as a public health control with the proper documentation.
- Observe the cooling procedure. Pig's feet and neck bones shall be cooled from 135°F to 41°F within 6 hours, provided that they are cooled from 135°F to 70°F within the first two hours. (Note: If the product is stored in refrigerators in bus pans and large stockpots, assist the operator with proper cooling methods if the product is being cooled in those containers. Times of inspections should be varied so that cooling can be observed.)

Verify that pig's feet and neck bones that have been cooked and then cooled are reheated to 165°F before placing in hot holding units.