

2

Animal Product
Manual

Procedures

Preparation

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Cooperation with Other Federal Agencies

Sometimes the regulations of different Federal agencies govern the same importations. As a result, Plant Protection and Quarantine (PPQ) cooperates with the following Federal agencies at ports of entry regarding importations of animals, animal products, and animal by-products.

Agricultural Marketing Service (AMS)

Commercial importations of shell eggs are regulated by the Agricultural Marketing Service (AMS). Refer to **Appendix I** for a list of AMS Regional offices.

Customs and Border Protection (CBP) of the Department of Homeland Security (DHS)

Customs and Border Protection (CBP) of the Department of Homeland Security (DHS) maintains primary control over entries. Maintain communications with CBP when regulatory action is taken on animal products and by-products that are held by PPQ. Once PPQ requirements have been met, release the cargo to CBP if applicable to local operations.

Fish and Wildlife Service of the Department of the Interior (FWS)

Refer the following importations to Customs and Border Protection (CBP) for referral to a Fish and Wildlife Service (FWS) officer or to CBP if an FWS officer is unavailable:

- ◆ All nonfarm animals including birds, but **excepting** horses, cattle, sheep, goats, swine, dogs, cats, and pet birds
- ◆ Animal by-products such as pelts, coats, skins, game trophies, ivory products, and tortoise shell products. Also, egg importations if from an endangered or threatened bird
- ◆ Abandoned pet birds (also contact VS who is the first concern)
- ◆ All amphibians, fish, and reptiles (to determine if they are protected by the Convention on International Trade in Endangered Species of Wild Flora and Fauna [CITES])

Food and Drug Administration of the Department of Health and Human Services (FDA)

Refer the following importations to Customs and Border Protection (CBP) for referral to a Food and Drug Administration (FDA) inspector:

- ◆ Any drug, medication, or food intended for animals that FDA has indicated an interest in. Consult with your local FDA inspector for specific items of interest
- ◆ Commercial importations of food products
- ◆ Wild fowl meat
- ◆ Wild ruminant meat

Food Safety and Inspection Service (FSIS)

Refer all meat and meat products and shell eggs for breaking to Customs for referral to Food Safety and Inspection Service (FSIS). Also, direct exporters to request from FSIS export certification of meat and meat products.

FSIS is responsible for regulating the importation of meat and meat products. FSIS makes sure that the meat and meat products are safe, wholesome, and pure products for human consumption (except wild

ruminant and wild fowl; see FDA). Foreign countries **must** have FSIS approval that the foreign inspection service is the equivalent of FSIS. The foreign country is then allowed to issue certificates for the commercial importation of meat and meat products. In addition, FSIS inspects and samples imported meat and meat products for meeting APHIS requirements and regulations designed to prevent the spread of animal diseases.

Refer importations of shell eggs for breaking to FSIS to issue FSIS Form 5200-8, Import Request Egg Products.

Public Health Service of the Department of Health and Human Services (PHS)

Refer the following importations to Customs for referral to the local Public Health Service (PHS) inspector:

- ◆ Dogs, cats, and monkeys (nonhuman primates)
- ◆ Lather brushes made from hair and bristles
- ◆ Human tissues, serum, blood, secretions, and excretions
 - ❖ If you question whether an importation is of animal origin which is imported for biological use, ask your supervisor or PPQ, Veterinary Regulatory Support (VRS)

Veterinary Services (VS)

Veterinary Services (VS) regulations control domestic and foreign commerce of live animals, live poultry, and their products. Since 1971, VS and PPQ have shared the responsibility for implementing, enforcing, and administering animal product and foreign garbage regulations and policies to prevent the introduction of foreign animal diseases.

Refer the following to the local VS office:

- ◆ All live animals, live birds, and hatching eggs
- ◆ Animal semen, ova, or embryo importations to VS, IEAS (empty containers are handled by PPQ)
- ◆ Dogs imported to handle livestock **except** those dogs from Canada, Mexico, Central America, and the West Indies



For dogs, require freedom from tapeworm *Taenia coenurus*.

- ◆ Abandoned pet birds (also contact FWS)

- ◆ When receiving a question relating to animal disease exclusions, consult your APM. If you **cannot** answer the question, use **Table 2-1-1** to determine who should answer the question.

TABLE 2-1-1 Determine Where to Refer Questions in Veterinary Services (VS)

| If the question relates to: | And the APM does not answer the question, then refer the question to: |
|---|---|
| <ul style="list-style-type: none"> ◆ Live animals including birds ◆ Hatching eggs ◆ Animal semen, ova, and embryos | <ul style="list-style-type: none"> ◆ The appropriate VS field office ◆ If the question cannot be answered locally, refer the question through normal channels to VS Import-Export Animals staff at 301/734-8364 |
| Organisms and vectors | Contact PPQ-AQI-VMO on page H-1-2 or PPQ-VRS-Headquarters Personnel at 301/734-7633 or VS Technical Trade Services Product Staff (TTSPS) at 301/734-3277 |
| Permit renewals for veterinary biological products | The Center for Veterinary Biologics (VS, CVB) at 301/734-8245 |
| VS permit renewals | VS, TTSPS at 301/734-3277 |
| <ul style="list-style-type: none"> ◆ Meat ◆ Animal products ◆ Animal by-products ◆ Associated materials | <ul style="list-style-type: none"> ◆ Your supervisor ◆ If the question cannot be answered locally, refer the question by contacting either PPQ-AQI-VMO on page H-1-2 or PPQ-VRS-Headquarters Personnel on page H-1-2 |

Description of Foreign Animal Diseases

The consequences of a foreign, exotic animal disease outbreak occurring in the United States would be devastating. An outbreak would affect the health and lives of animals, the quantity and quality of our nation's food supply, and the stability of our nation's international trade. The best principle for controlling the introduction of foreign exotic animal diseases into the United States is exclusion. Exclusion prevents the transmission of viruses through direct and indirect contact of an animal disease or contact with a vector.

VS enforces the regulations that exclude the introduction of foreign animal diseases. PPQ is responsible for inspecting animal products and related materials imported from foreign countries.

Foreign animal diseases listed in the regulations that PPQ is involved in controlling are identified below.

African Swine Fever (ASF)

African swine fever (ASF) is also known as Peste porcine africaine, fiebre porcina africana, and maladie de Montgomery. ASF is a highly-contagious viral disease that affects **only** swine. The virus is acute, causing the swine to die within 4-7 days after getting a high fever. Wild swine carry the virus which may be transmitted by ticks. The virus is hardy, remaining viable in meat and by-products for several months.

Bovine Spongiform Encephalopathy (BSE)

Bovine spongiform encephalopathy (BSE) is a neurological disease of ruminants. BSE was first diagnosed in 1986 in Great Britain, and is a serious animal disease that has caused great loss to the cattle industry of Great Britain. BSE can be spread through using ruminant feed containing meat and other products from infected ruminants. Also, BSE can be spread through using veterinary biologic products containing by-products from infected ruminants.

Classical Swine Fever (CSF)

Classical swine fever (CSF) is also known as hog cholera (HC). CSF is an acute, highly-contagious viral disease that affects **only** swine. The disease causes a high fever and kills the animal 5-19 days after exposure. The virus is inactivated by heat and most disinfectants, but may survive several months in pickled pork and bacon, and several years in frozen carcasses. The virus is transmitted by direct animal contact and by animals eating uncooked pork scraps. CSF can also be transmitted indirectly by contaminated feed, water, equipment, or clothing.

Exotic Newcastle Disease (END)

Exotic Newcastle disease (formerly known as viscerotropic velogenic Newcastle disease (VVND)) is also known as Asiatic Newcastle disease, pseudo fowl plague, Doyle's form of Newcastle disease, and Avian pneumoencephalitis. END is an acute, rapidly-spreading viral disease of poultry. The disease is spread primarily by respiratory discharges and feces of infected birds; the disease can be spread when these excretions contaminate tools, boots, and clothing of people. Carcasses of birds being imported may spread the virus, as may raw garbage containing material from bird carcasses. END has been introduced into the United States on several occasions, and each outbreak was eradicated. The most serious outbreak began in 1971, which took three years to eradicate, was traced to the importation of infected pet birds.

Foot-and-Mouth Disease (FMD)

Foot-and-mouth disease (FMD) is also known as Aphthous fever, Aftosa, Epizootic apthae, Fiebre aftosa (Spanish), fièvre aphteuse (French), Maul-und Klauenseuche (German), Afta epizootica (Italian), and Eda Rot Bolezn (Russian). FMD is a contagious, viral infection that affects ruminants and swine. Symptoms of the disease are blisters in the mouth and on the feet. The disease is spread by contact with infected animals or contaminated fomites. The virus is found in the body fluids of live animals and meat or other parts of slaughtered animals. Therefore, restrictions are placed on imports of animals and animal products such as meat, hides, bones, animal casings, and glands. The United States has had nine FMD outbreaks between 1870 and 1929. At least one of the outbreaks was traced to animals that had fed been uncooked garbage from foreign ships. Another outbreak was traced to the use of contaminated biological products of foreign origin such as vaccines and extracts.



Throughout this manual where RP is mentioned, RP will represent both RP and FMD. This is due to the phenomenon of wherever RP occurs FMD does, too.

Highly Pathogenic Avian Influenza (HPAI) Subtype H5N1

Highly pathogenic avian influenza (HPAI) subtype H5N1 is an extremely infectious viral disease of poultry, including chickens, ducks, and turkeys. Migratory wildfowl and other wild birds are considered natural hosts for avian influenza viruses. The disease is spread by bird-to-bird contact through feces and aerosol droplets. These substances can contaminate both equipment, vehicles, boots, and clothing which may then serve as a source of infection. The virus is circulating widely among poultry in Asia, and during an outbreak in poultry there is a risk to people who have contact with infected birds or surfaces contaminated by infected birds. Although HPAI subtype H5N1 virus infection in humans is **not** common, the virus has already crossed the species barrier and has caused severe disease with high mortality in humans.

Rinderpest (RP)

Rinderpest (RP) is also known as cattle plague and pestis bovina. RP is an acute viral disease of ruminants, especially cattle and buffaloes. Historically, RP is one of the most devastating diseases of cattle and has had a major influence on man's food supply. Symptoms of the disease in its initial stages are lack of appetite, high fever, depression, severe panting, and racing pulse. The virus can be inactivated by heat, but will remain viable for weeks in the cold and for months in frozen animal products. The virus is present in all tissues and fluids of infected animals throughout the period of clinical illness. RP is usually

transmitted by direct contact with infected animals, but may also be transmitted by indirect contact with the secretions, excretions, or meat from infected animals.



Throughout this manual where RP is mentioned, RP will represent both RP and FMD. This is due to the phenomenon of wherever RP occurs FMD does, too.

Swine Vesicular Disease (SVD)

Swine vesicular disease (SVD) is a contagious viral infection that infects **only** swine. The symptoms are blisters on the mouth, snout and feet. The symptoms and course of SVD are indistinguishable from those of FMD.

How the Degree of Processing Correlates with Disease Risk

To allow importations of animal products and by-products while controlling the introduction of foreign animal diseases, prescribed procedures are carried out that stop the ability of viruses to infect healthy animals. These prescribed procedures are referred to as processes. The degree of processing is the extent of severity and length of application that makes the virus inactive. The four methods of processing related to animal products and by-products are temperature, pH, drying, and radiation.

Temperature

The temperature process is the heating and cooling of animal products or by-products. Freezing temperatures preserve viruses, while high temperatures (heat) inactivate viruses. The heating process inactivates viruses by raising the temperature above the tolerance level of the virus. The effectiveness of heating depends on the temperature and the exposure. Viruses are inactivated at moderate temperatures with longer exposure, and at higher temperatures with shorter exposure. The tolerance of viruses to heat varies. For example, to inactivate CSF, FMD, and SVD in canned meat, the meat **must** be heated by a commercially-accepted method to an internal (center of the product) temperature of 156° F. However, to inactivate END in poultry meat, the meat **must** be heated by a commercially accepted method to an internal temperature of 161° F.

pH

The pH is a measure of acidity or alkalinity. The pH process inactivates viruses by increasing or reducing the pH level of animal products or by-products. Viruses have a pH range within which they can survive. A pH outside this range inactivates the virus. Of the viral diseases of interest to APHIS, FMD is the most susceptible to pH

changes, while SVD is the least susceptible. Extreme pH inactivates all viruses. The effectiveness of the pH process depends on the exposure, temperature, and pH level. A pH change during rigor mortis will inactivate some viruses in muscle tissue. Soaking products in solutions of extreme pH also inactivates viruses.

Drying

The drying process removes moisture from animal products or by-products. Drying alone preserves viruses. When water is added, the virus is reactivated. Drying permanently inactivates viruses when combined with heat, pH, or exposure. Combining drying, heat, pH, and exposure produces a condition called cured and dried, which inactivates viruses. When meat is dried to a water-to-protein ratio of 2.25:1 (2.25 parts water to 1 part protein), the pH level is low enough to inactivate FMD. CSF is inactivated by curing and drying meat for 90 days.

Radiation

The radiation process is approved to permanently inactivate viruses in **only** animal by-products. Six megarads of radiation inactivates all viruses.

How the Degree of Processing Relates to Meat and Meat Products

The conditions of perishable, chilled, and frozen are considered to be at the same level in regard to disease risk. When determining the degree of processing related to importations of meat and meat products, the following conditions are used:

- ◆ Cured and dried
- ◆ Cooked
 - ❖ Shelf stable
 - ❖ Canned, perishable (pasteurized, canned)
 - ❖ Chilled or frozen
- ◆ Fresh
 - ❖ Chilled or frozen

Cured and Dried

The condition of cured and dried combines the processing of drying, pH, heat, and exposure to render the meat or meat product shelf stable. (See additional information under this section on shelf stability.) For meat to be cured and dried, the meat **must** meet a certain degree of processing, depending on the animal class from which the meat was derived and the country of origin.

Meat from countries affected with FMD **must** have been processed to a degree where **no** refrigeration is needed, and the results of a wet test **cannot** exceed a water-to-protein ratio of 2.25 to 1. A certificate **must** accompany the importation attesting to the degree of processing.

Meat from countries affected with CSF **must** be dried for at least 90 days. When the meat originates in a country free from animal diseases, but is processed in a country affected with CSF, the meat **must** dry for at least 45 days. In either situation, a certificate **must** accompany the importation attesting to the degree of processing.

Cooked

Cooking occurs when meat is heated. The degree of heating results in one of the following: cooked, shelf stable; cooked, canned perishable; or cooked (then chilled or frozen).

Cooked, shelf stable is a condition in which high temperature is applied that renders the meat or meat product shelf stable. (See additional information under this section on shelf stability.) The process used is lock stepped as follows:

1. Pack the meat in containers.
2. Completely seal the containers against the escape or entry of air (hermetically sealed).
3. Cook the meat. The temperature **must** be high enough to produce a fully sterile product (one that is free from bacteria or other micro-organisms).

Cooked, canned perishable (pasteurized canned) is a condition that applies high temperature to canned meat. The process used is the following:

1. Pack the meat in containers.
2. Completely seal the containers against the escape or entry of air (hermetically sealed).
3. Cook the meat using a commercially accepted method. The internal (center of meat) temperature **must** reach a minimum of 156° F.

This condition is hot enough to kill viruses, but **not** hot enough to render the meat or meat product fully sterilized. The meat or meat product requires refrigeration. A certificate **must** accompany the importation attesting to the degree of processing.



Meat that is cooked before being placed in containers is **not** considered cooked, canned perishable. Regulate this meat as cooked (chilled or frozen), cured and dried, or fresh (chilled or frozen).

Cooked (chilled or frozen) is a condition that results from the heating process. The fresh, boneless meat is cooked **without** curing agents, except salt, for a sufficient period and at temperatures so that when inspected, the meat appears to be thoroughly cooked throughout.

Except for meat products which are shelf stable because they were cooked in their container, a certificate **must** accompany all importations of cooked meat attesting to the degree of processing.

Fresh

Fresh (chilled or frozen) is a condition that results from applying **only** cold or freezing temperatures. The meat is **not** canned, cooked, or cured and dried.

Shelf Stability

The condition of shelf stability results from applying heat, alone or in combination with other ingredients and/or other treatments, to render the product free of microorganisms capable of growing in the product under non-refrigerated conditions.

Determining shelf stability of meat in containers accompanying passengers and in passenger baggage is a professional judgement. You **cannot** adequately determine the degree of processing if **no** certificate accompanies the importation. You **must** be confident that the meat or meat products were cooked in the container. If you are **not** sure, then seize the product.



Historically, PPQ, VRS has supported the restrictive actions taken by individual officers based on the lack of evidence necessary to take the proper regulatory action.

Use the following guidelines to determine if meat was cooked sufficiently enough in the containers rendering the meat to be hermetically sealed and shelf stable. Keep in mind that containers vary in appearance. You will need to rely on practical experience and professional judgment.

1. Determine if the container is acceptable.

TABLE 2-1-2 Determine if Meat Is Hermetically Sealed and Shelf Stable Based on How Cooked in the Container

| If the container is a: | Then: |
|---|--|
| <ul style="list-style-type: none"> ◆ Can ◆ Crock ◆ Flexible foil pouch ◆ Jar ◆ Pop-top can | CONTINUE on to Step 2 |
| <ul style="list-style-type: none"> ◆ Transparent plastic pouch ◆ Container labeled as sterilized filling or pasteurized | <ol style="list-style-type: none"> 1. JUDGE the contents as not shelf stable 2. TAKE appropriate action |

2. Examine the container. Match the properties of the container with those listed in Figure 2-1-1. Then follow Table 2-1-3

| Properties of containers that are hermetically sealed and shelf stable: | Properties of containers that are not hermetically sealed and shelf stable: |
|---|---|
| <ul style="list-style-type: none"> ◆ The ends or lid of the container is concave, inwardly curved, flat, and smooth ◆ If a can container, the can is seamless with no evidence of soldering ◆ The ends or lid of the container give only slightly when you press on them ◆ If a foil pouch container, there is liquid inside surrounding the meat, and moves when you massage the pouch ◆ There is no odor ◆ The container is dry and clean ◆ The label is commercially printed | <ul style="list-style-type: none"> ◆ The ends or lid is swelled, bulged, or outwardly curved ◆ The seal shows evidence of soldering ◆ When the container lid is pressed, you feel the lid move inward or you hear the lid click ◆ The foil pouch is molded snugly around the meat with little or no liquid inside ◆ You are unable to move the meat when you massage the pouch ◆ There may be instructions on the pouch to further cook the meat beyond warming ◆ There is an objectionable odor ◆ The container shows evidence of leaking ◆ The label is handwritten |

FIGURE 2-1-1 List of Container Properties Describing Both Those That Are and Are Not Hermetically Sealed

TABLE 2-1-3 Determine if Meat Is Hermetically Sealed and Shelf Stable Based on Your Examination of the Container

| If: | Then: |
|---|---|
| One or more of the properties of containers that are not hermetically sealed and shelf stable listed in Figure 2-1-1 applies | <ol style="list-style-type: none"> 1. JUDGE the contents as not hermetically sealed and shelf stable 2. TAKE appropriate action |
| None of the properties of containers that are not hermetically sealed and shelf stable listed in Figure 2-1-1 apply | <ol style="list-style-type: none"> 1. CONSIDER that, in most probability, the contents are hermetically sealed and shelf stable 2. CONTINUE to Step 3 only if you are still unsure |

3. Open a container. Then follow [Table 2-1-4](#).

TABLE 2-1-4 Determine if Meat Is Hermetically Sealed and Shelf Stable Based on Your Inspection of the Contents

| If the contents: | Then: |
|---|--|
| Appear processed and any fat present was melted by cooking EXAMPLE The fat will be greasy, gelatinous, or lard-like in appearance. Think of what bacon fat looks like after frying and the grease has congealed in the pan. | <ol style="list-style-type: none"> 1. JUDGE the contents as hermetically sealed and shelf stable |
| Are unprocessed or you see pieces of fat EXAMPLE The fat will be more intact. Think of what fat looks like in a can of pork and beans. | <ol style="list-style-type: none"> 1. JUDGE the contents as not hermetically sealed and shelf stable 2. TAKE appropriate action |