APHIS Evaluation of the Status of Lithuania Regarding Classical Swine Fever, Swine Vesicular Disease, and Foot and Mouth Disease

Animal and Plant Health Inspection Service

Veterinary Services

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Abbreviations

APHIS	Animal and Plant Health Inspection Service
BIP	Border Inspection Post
BSL	Biosecurity Level
BTSVS	Border and Transport State Veterinary Service
CSF	Classical Swine Fever
CVED	Common Veterinary Entry Document
EC	European Commission
EU	European Union
EU-15	Fifteen EU Member States prior to the 1 May 2004 accession
FMD	Foot and mouth disease
NVL	National Veterinary Laboratory
OIE	World Organization for Animal Health
SFVS	State Food and Veterinary Service
SVD	Swine Vesicular Disease

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Executive summary

In 2003, the Republic of Lithuania expressed interest in exporting specialty sausages made from beef and pork to the United States and requested an evaluation for freedom from foot and mouth disease (FMD), classical swine fever (CSF) and swine vesicular disease (SVD). Upon receipt of this request, APHIS initiated an evaluation of the status of Lithuania with regard to these three diseases.

On 1 May 2004, Lithuania and nine other countries became new Member States of the European Union (EU). As part of the accession process, Lithuania adopted the decisions and directives of the European Commission (EC) regarding animal health, welfare, and identification, including those pertaining to FMD, CSF, and SVD. These decisions and directives were transposed into Lithuanian law and became the basis for new standard operating procedures by the time of accession. Lithuania also adopted the harmonized EC legislation regarding import, export, and trade of live animals, meat, and animal products.

This report represents APHIS' evaluation of Lithuania with regard to the status, infrastructure, and control measures in place for these three diseases and includes an assessment of disease surveillance measures, import practices, laboratory capacity, emergency response procedures, and other factors that could influence the risk of disease introduction into the United States. Since a previous APHIS analysis of the EU prior to accession of the 10 new Member States concluded that the EC control measures for CSF are effective (APHIS 2000), the CSF evaluation focuses in large part on the implementation of EC controls in Lithuania.

Supporting documentation for this evaluation consists of documentation provided by Lithuania, observations of a site visit team, information from the World Organization for Animal Health (OIE), peer-reviewed articles, reports of missions conducted by the Food and Veterinary Office of the European Commission, and other technical sources. APHIS considered information provided by Lithuania before, during, and after the site visit, which was conducted in 2004. APHIS used all of the information gathered during the evaluation process to identify risk factors that may or may not require further mitigation.

This risk analysis was conducted according to OIE guidelines and therefore includes a hazard identification section, a release assessment, an exposure assessment, a consequence assessment, and a risk estimate. The hazards under consideration are the CSF, SVD, and FMD viruses. Based on the release assessment, APHIS has no evidence that any of these hazards currently exist in Lithuania. The documentation provided by Lithuania indicates that FMD and CSF have been eradicated in this country. Lithuania has not reported a case of FMD since 1982 and last reported a case of CSF in 1992; SVD has never been reported in the country.

However, the release assessment identified several pathways by which CSF, SVD, and/or FMD virus could be introduced into Lithuania from other EU Member States or affected third countries, thereby potentially resulting in risk to the United States in opening trade. Specifically, the following pathways for disease introduction into Poland are of interest to APHIS: (1) natural movements of wild boar; (2) import and trade of live swine; (3) import and trade of swine products; (4) incoming vehicular and human traffic; and (5) agricultural commodities for personal consumption.

Release assessment

Of the pathways assessed, migrating wild animals and smuggled agricultural commodities appear to present the greatest risk for disease introduction into Lithuania. In this regard, Lithuania shares common land borders with regions that APHIS has not evaluated and therefore regards as unknown risk for CSF, SVD, and/or FMD, considerable local traffic occurs across these borders, and some pathways for disease introduction are not stringently controlled (e.g. movement of wild boar

Introduction of CSF or SVD into Lithuania by the assessed pathways would only affect export risk to the United States if a susceptible domestic swine population – either breeding animals as in a semen collection center or production animals raised for slaughter – became infected and this infection was not detected prior to export. In this regard, commercial production and biosecurity practices substantially mitigate the export risk to the United States.

Harmonized EC legislation imposes less stringent restrictions on sourcing of imported ruminants and swine, as well commodities derived from these species, than is the case for the United States. Current EC import requirements substantially reduce the risk of introducing CSF, SVD, or FMD, and Lithuanian import practices have been relatively protective against disease introduction via these pathways. However, additional mitigation measures may be necessary to restrict sourcing of swine, ruminants, and derived products from Lithuania for export to the United States and to prevent commingling of these commodities with those from regions that APHIS considers to be affected or of unknown risk for these diseases.

Sufficient information is available from Lithuania and other EU Member States for APHIS to conclude that there is little substantive difference in the way trade is conducted among these entities. APHIS regards the 15 Member States comprising the EU prior to the May 2004 accession (the EU-15) as low risk with respect to CSF. In addition, large portions of the EU are currently considered by APHIS to be free of SVD and FMD, but are subject to certain import restrictions based on the existence of common land borders with regions that APHIS does not consider to be free of these diseases, and/or importation of live animals or animal commodities from regions not considered to be free of these diseases.

Based on this evaluation, APHIS considers the export risk from Lithuania equivalent to that of the EU-15. The EU-15 is subject to the import conditions specified in 9 CFR 94.11 for meat and meat products from ruminants and swine; 9 CFR 94.13 and 94.24 for pork and pork products; 9 CFR 94.24 for breeding swine; and 9 CFR 98.38 for swine semen. Lithuania has implemented EC control measures at a level equivalent to that of the EU-15. Applying the provisions of 9 CFR 94.11, 94.13, 94.24, and 98.38 to Lithuania would address the majority of the outstanding risk issues discussed in the release assessment and result in a level of risk that is equivalent to that portion of the EU that is authorized to export breeding swine, swine semen, and fresh meat and meat products to the United States.

Exposure assessment

APHIS assessed the probability of exposure of susceptible animal populations in the United States to CSF, SVD, or FMD viruses carried by meat or meat products, live animals, and genetic material imported from Lithuania. The assessment concluded that the likelihood of exposure of susceptible animals to these viruses via waste feeding was low, based on studies of the U.S. waste-feeding sector. Although the unmitigated potential for exposure to infective virus via live animals or genetic material was comparatively high, APHIS concluded that the likelihood of exposure of susceptible U.S. livestock via meat or meat products, live animals, or genetic material from Lithuania was low. The mitigation measures in 9 CFR 94.24 for horizontal transmission and 9 CFR 98.38 for artificial insemination would further limit the risk of exposure to CSF or (indirectly) SVD viruses.

Consequence assessment

APHIS also assessed the biologic and economic consequences of introducing CSF, SVD, or FMD viruses into the United States. This assessment concluded that both CSF and FMD viruses have the potential to cause significant distress and suffering in affected animals, whereas SVD infection usually follows a more mild course. The economic costs of control and eradication of any of these diseases would be substantial, and export losses due to restrictions imposed by trade partners on animals and products susceptible to these diseases could run into billions of U.S. dollars. An extensive foreign animal disease outbreak could also result in severe psychosocial effects on farmers and farming communities.

Risk estimate

In summary, although a CSF, SVD, or FMD outbreak in the United States would likely have severe animal health and economic consequences, APHIS considers the risk of infected live swine and ruminants, or commodities derived from these species, entering the United States from Lithuania and exposing U.S. livestock to be low. This risk is further mitigated if Lithuania is subject to the same mitigations measures as are specified for other EU Member States in 9 CFR 94.11, 94.13, 94.24, and 98.38.

Hazard identification

The hazards under consideration in this analysis are CSF, SVD, and FMD viruses.

1. Classical swine fever virus

CSF, also known as hog cholera, is a contagious and economically damaging viral disease of domestic swine and wild boar with worldwide distribution. It is caused by the CSF virus of the family Flaviviridae, genus *Pestivirus* (Wengler et al 1995). CSF virus is quite hardy, being stable between pH 4 and 10 (Depner et al 1992) and also stable at low temperatures (Harkness 1985). The virus would likely remain viable even after carcass maturation, and is unlikely to be destroyed by transport or cold storage. Laboratory confirmation of infection, essential during an outbreak situation, is complicated by the close antigenic relationship of the CSF virus with bovine viral diarrhea virus and border disease virus (Wengler et al 1995).

The incubation period for CSF is 2-14 days (OIE 2005a). The virus multiplies in the epithelial crypts of the tonsils and may be carried to local lymph nodes and into the bloodstream for distribution throughout the body (Trautwein 1988). Blood and all tissues, secretions and excretions of sick and dead animals are sources of virus (OIE 2005a). CSF virus has been recovered from muscle and lymph nodes of infected pigs, and high titers of virus have been isolated from bone marrow (Wood et al 1988). The disease may also be introduced or spread via infected semen (Elber et al 1999).

CSF can spread in an epidemic form as well as establish enzootic infections in domestic swine and wild boar populations. Infection generally spreads directly from pig to pig, but products including fresh, frozen, or cured pork can remain infectious to other pigs via the oral route (Edwards 2000). Imported pig products are frequently implicated in the introduction of CSF virus into previously disease-free regions, primarily through the practice of swill feeding (Fritzemeier et al 2000). Dahle and Liess (1992) demonstrated that the oral infectious dose of CSF virus is very low. Indirect transmission may occur via movement of people, wild animals, and inanimate objects such as live-haul trucks (Elbers et al 2001).

The role of wild boar as a virus reservoir and possible source of infection for domestic swine is well known and epidemiological links between CSF virus infection in wild boar and domestic swine have been reported repeatedly in recent years (Biagetti et al 2001; Laddomada et al 1994). In countries that are free of CSF in domestic swine, epidemics in wild boar are often started by feeding of infected human food waste (EC 1999). Abnormal mortality and sometimes obviously sick animals are the first indicators of CSF introduction into a wild boar population (EC 1999).

Four distinct clinical forms of CSF have been described, including acute, chronic, congenital, and mild manifestations (Moennig et al 2003; Paton and Greiser-Wilke 2003). The acute form involves a disease progression of 2-4 weeks and is characterized by high fever, generalized illness, hemorrhagic lesions, immunosuppression with secondary infections, and high mortality. The chronic form may last 30-90 days before death and usually involves older swine or congenitally infected piglets. Congenitally infected piglets may develop symptoms of chronic CSF within 3-6 months, or may never develop symptoms but continuously shed virus. Mild CSF is typically seen only in sows and may

result from exposure to a low virulent strain. Infected sows may show no overt clinical signs but continuously shed virus to their young and to other swine they contact.

2. Swine vesicular disease virus

SVD is a contagious and economically damaging disease of domestic swine and wild boar. The disease has historically been recorded in Hong Kong, Japan, and several European countries; however, in 2004 the disease was primarily limited to Italy and Portugal (OIE 2005a). The SVD virus belongs to the family Picornaviridae, genus *Enterovirus* (Wengler et al 1995). SVD virus is particularly hardy, resistant to pH changes between 2.5 and 12 (Herniman et al 1973), and is very stable under cold conditions (Dawe 1974). The virus is therefore unlikely to be destroyed by the post-mortem decrease in muscle pH that accompanies carcass maturation. SVD virus is also resistant to fermentation and smoking processes, and may remain in hams for 180 days, sausages for over a year, and processed intestinal casings for over two years (OIE 2005a).

The incubation period for SVD is 2-7 days. The intestinal tract is the primary site of infection; however, all tissues contain virus during the viremic period. Blood and feces of sick animals, as well as epithelium from vesicles and vesicular fluid, are good sources of virus. Although SVD virus does not appear to have a tropism for skeletal muscle cells, it is easily isolated from muscle tissue from infected animals after slaughter and bleeding out. SVD may be introduced into a herd by feeding garbage containing infected meat scraps, by introducing infected animals, or by contacting infected feces (e.g., an improperly cleaned truck) (Hedger and Mann 1989; USAHA 1998). After the initial introduction the disease spreads through contact of susceptible pigs with infected pigs and infected feces.

The clinical signs of SVD are easily confused with those of FMD and include fever, sudden lameness, and vesicles with subsequent erosions along the snout, feet, and teats. Morbidity rates may be low throughout a whole herd but high in certain pens. SVD causes essentially no mortality, and recovery usually occurs within 1 week (up to 3 weeks). Persistence of infection with SVD is rare (Lin et al 2001); however, some strains produce only mild clinical symptoms or are asymptomatic, and are detected only through laboratory surveillance (OIE 2005a). For example, a 2002 outbreak of SVD in Italy involved subclinical infection in all but one of 10,312 affected pigs (Brocchio et al 2002).

3. Foot and mouth disease virus

FMD is a contagious and economically damaging disease of cloven-hoofed animals, including domestic ruminants and pigs, as well as over 70 wildlife species (Coetzer et al 1994). The disease is endemic in large areas of Africa, Asia, and South America, and outbreaks are not uncommon in previously free areas throughout the world (Alexandersen et al 2003). The FMD virus belongs to the family Picornaviridae, genus *Apthovirus*, and 7 distinct serotypes with indistinguishable clinical effects have been identified: O, A, C, SAT1, SAT2, SAT3, and Asia1 (Belsham 1993). FMD virus is stable under cold conditions (Bachrach et al 1957; Cottral 1969).

The incubation period for FMD is 2-14 days (OIE 2005a). The virus initially multiplies in the pharyngeal area and is then carried to the regional lymph nodes and the bloodstream for distribution throughout the body (Burrows et al 1981; Alexandersen et al 2003).

Subsequent viral amplification occurs within the cornified stratified epithelium of the skin, particularly on the feet, mammary gland, and tongue, as well as in the myocardium of young animals. Saliva, feces, urine, and breath are sources of the virus, and virus may be present in milk and semen up to 4 days before clinical signs appear (OIE 2005a).

Other sources of viable virus are meat and meat products in which the pH has remained above 6.0, as well as convalescent animals, exposed vaccinates, and carrier animals, particularly cattle and water buffalo. The FMD virus survives in lymph nodes and bone marrow at neutral pH, but is destroyed in muscle when the pH is less than 6.0 (OIE 2005a). Pig meat does not consistently reach as low an ultimate pH during carcass maturation as does beef, so the inactivation of FMD virus in pig meat may not be as complete as that occurring in beef (Farez and Morley 1997). Virus inactivation has not been examined in detail in small ruminant meat (Alexandersen 2003). The virus can persist in contaminated fodder and the environment for up to 1 month, depending on the temperature and pH conditions.

Susceptible livestock may be infected with FMD virus as a result of direct or indirect contact with infected animals or an infected environment (Alexandersen et al 2003). Indirect transmission may occur via movement of people, wild or domestic animals, or inanimate objects (vehicles, farm implements, clothing), and long-range airborne transmission is also possible. Transmission of FMD virus via meat or meat products is well documented. For example, a review of 627 known sources of FMD outbreaks throughout the world from 1870-1993 found that 411 of the outbreaks (66%) were attributable to infected meat, meat products, or garbage (APHIS 1994).

Laboratory confirmation is essential during outbreak situations, since FMD cannot be distinguished from other vesicular disease such as SVD, vesicular stomatitis, and vesicular exanthema of swine on the basis of clinical findings (Alexandersen et al 2003). The classical form is characterized by fever and vesicles with subsequent erosions in the mouth, nares, muzzle, feet, or teats. However, serological field surveys and experimental investigations have shown that FMD in small ruminants may be clinically inapparent in a significant proportion of animals (Barnett and Cox 1999; Donaldson and Sellers 2000), and certain strains of the virus may be of low virulence in some species (Donaldson 1998). FMD generally causes low mortality in adult animals but mortality may be high in young animals due to myocarditis.

Release assessment

A release assessment describes the biological pathway(s) necessary for an importation activity to introduce pathogenic agents into a particular environment and estimates the probability of that occurring (OIE 2005b). This release assessment addresses the 11 factors described under 9 CFR 92.2 for evaluation of foreign animal disease status. Risk factors and issues of concern, which may directly or indirectly affect the risk estimate, are identified and discussed at greater length in Section 12, including risk mitigation measures currently existing in Lithuania.

APHIS evaluated the current status of CSF, SVD, and FMD in Lithuania, as well as pathways for disease introduction into Lithuania with the potential to impact the assessed status. Since Lithuania has never reported a rinderpest outbreak (OIE 2006), and the disease is currently confined to certain geographic regions outside of the European Union (EU), we are proposing to consider Lithuania free of rinderpest.

1. Authority, organization, and infrastructure of the veterinary services

1.1 Legal authority for animal health activities

The main legal authority for the animal health activities of the official veterinary services in Lithuania resides in the Law on Veterinary Activities of 1991, as amended (SFVS 2003a Annex 3), and the Statute of the State Food and Veterinary Service (SFVS 2003a Annex 4). The Law on Veterinary Activities regulates the main tasks and responsibilities of the official veterinary services, ensures access by government officials to private property, and gives the official veterinary services powers of inspection and enforcement, including the power to impose administrative penalties. According to veterinary officials, noncompliance is very low (0.2-0.3% of inspected farms) (APHIS 2004).

The Law on Veterinary Activities also lays down basic import, trade, and movement controls, stipulates the requirements for herd registration and animal identification, and describes general disease control and eradication measures. The Law further stipulates the obligations of veterinary officials, private veterinarians, and animal keepers with regard to reporting animal infectious diseases. The Order of the Director of the SFVS No 497 "Requirements for Notification of Contagious Diseases" implements Council Directive 82/894/EEC and requires notification of the EC and other Member States within 24 hours of (1) confirmation of an outbreak, and (2) removal of restrictions after eradication of the outbreak.

Waste feeding to swine has been prohibited since 1998 by the Order of the Director of the SFVS No. 4-70a on Control Measures for CSF (SFVS 2003a), except for heat-treated waste fed to swine for consumption by the owner (APHIS 2004). Veterinary officials inspect small swine farms once annually and large swine farms (more than 2,000 pigs) twice annually for compliance with the waste feeding ban. Producers who sell swine for export or trade must keep a register of what has been fed. In addition, approved private veterinarians are required to complete an inspection form that describes feeding practices, among other things, when visiting a farm for surveillance sampling. Official veterinarians indicated that waste feeding remains a problem on small holdings, but stated that small farms are unlikely to export to the United States (APHIS 2004).

Secondary legislation in the form of Orders of the Director of the SFVS prohibit vaccination of swine against CSF (Order No. 169); regulate the handling, processing, and marketing of animal waste (Order No. B1-47); and specify surveillance measures for CSF, SVD, FMD, and other contagious animal diseases (Order No. 522). The latter Order is reissued annually.

The primary articles of EC legislation pertaining to control of CSF, SVD, and FMD are listed in Table 1.1 with the corresponding transposition into Lithuanian legislation.

Table 1.1: Transposition of critical EC legislation regarding CSF, SVD, and FMD

Disease	EC legislation	Lithuanian legislation
CSF	Council Directive 2001/89/EC of 23 October 2001 on Community measures for the control of classical swine fever (as amended)	Order No. 283 on approval of the requirements for control of classical swine fever, adopted on 21 June 2002
	Commission Decision 2002/106/EC of 1 February 2002 approving a Diagnostic Manual establishing diagnostic procedures, sampling methods and criteria for evaluation of the laboratory test for the confirmation of classical swine fever (as amended)	Directly applicable to Member States (Order No. B1-591 on approval of a diagnostic manual establishing diagnostic procedures, sampling methods and criteria for evaluations of the laboratory tests for the confirmation of classical swine fever, adopted 30 June 2003)
SVD	Council Directive 92/119/EEC of 17 December 1992 introducing general Community measures for the control of certain animal diseases and specific measures relating to swine vesicular disease (as amended)	Order No. 284 on approval of regulation introducing measures for the control of certain animals diseases and specific measures relating to swine vesicular disease, adopted 24 June 2002
	Commission Decision 2000/428/EC of 4 July 2000 establishing diagnostic procedures, sampling methods and criteria for the evaluation of the results of laboratory tests for the confirmation and differential diagnosis of swine vesicular disease	Directly applicable to Member States
FMD	Council Directive 2003/85/EC of 29 September 2003 on Community measures for the control of foot-and-mouth disease repealing Directive 85/511/EEC and Decisions 89/531/EEC and 91/665/EEC and amending Directive 92/46/EEC	Order No. B1-755 on approval of requirements for control of foot and mouth disease, adopted 30 August 2004
	Commission Decision 91/42/EEC of 8 January 1991 laying down the criteria to be applied when drawing up contingency plans for the control of FMD, in application of Article 5 of Council Directive 90/423/EEC	Directly applicable to Member States

Commission Decisions and Regulations are directly applicable to all Member States without the need for transposition, although some Member States choose to do so, whereas Council Directives bind Member States to the objectives to be achieved within a certain timeframe and leave the means to the national authorities. Official veterinarians

appeared familiar with the provisions of the EC and Lithuanian legislation concerning the diseases under evaluation (APHIS 2004).

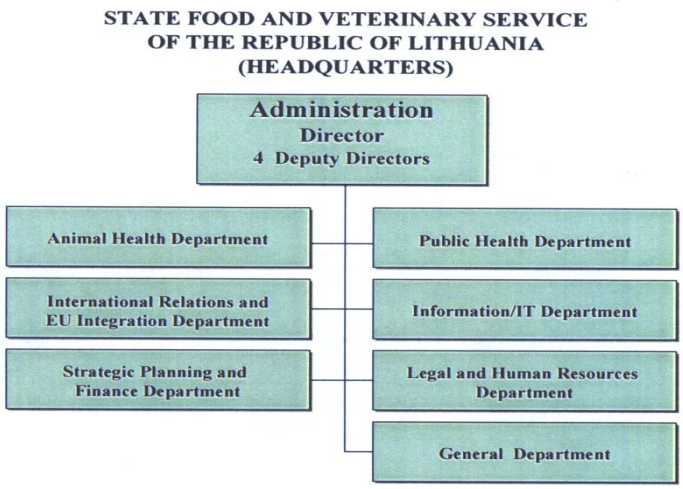
1.2 Organization of the official veterinary services

1.2.1 Central competent authority

The State Food and Veterinary Service (SFVS) was established in 2000 as the central competent authority for Lithuania (SFVS 2003a). The Director of the SFVS is the Chief Veterinary Officer of Lithuania, who reports directly to the Prime Minister. The headquarters SFVS consists of seven departments as shown in Figure 1.1.

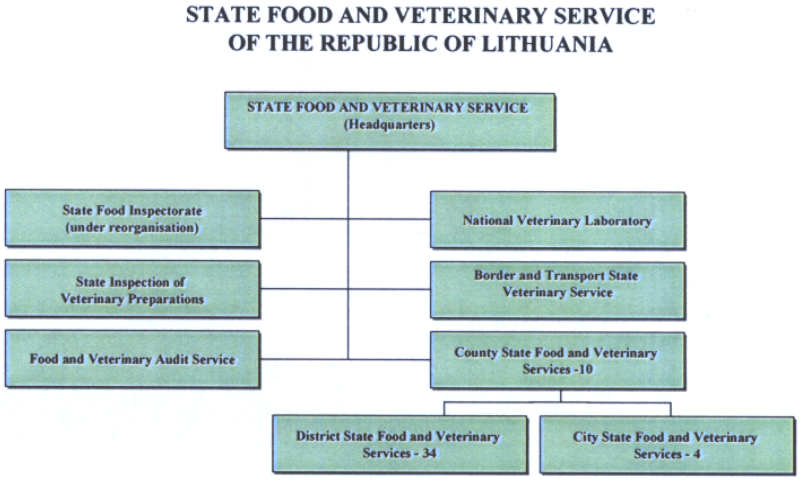
The primary responsibilities of the headquarters SFVS are development and coordination of disease control policy, analysis and assessment of data, and establishment of priorities. The Animal Health Department is responsible for protecting animal health and welfare, developing monitoring programs for infectious animal diseases, preparing for and coordinating infectious animal disease control and eradication measures, analyzing the epizootic situation in other countries, establishing the procedures for importation of live animals, animal products, and feedstuff, and regulating veterinary pharmaceutical activities (SFVS 2003a).

Figure 1.1: Organization of the SFVS headquarters offices



The headquarters SFVS also has multiple subordinate institutions, including the peripheral SFVS offices (county, district, and city), the Border and Transport State Veterinary Service (BTSVS), the National Veterinary Laboratory (NVL), and the Food and Veterinary Audit Service (FVAS) (Figure 1.2).

Figure 1.2: Institutions subordinate to the headquarters SFVS



1.2.2 Regional veterinary services (administrative unit)

The territory of Lithuania is divided into 10 counties (*apskritys*; singular *apskritis*) – Vilnius, Kaunus, Klaipėda, Panevėžys, Šiauliai, Alytus, Marijampolė, Telšiai, Utena and Tauragė – each of which consists of 3-6 districts (SFVS 2003a; SFVS 2003b). Regional SFVS offices are based in all 10 counties. An entire county is considered by APHIS to be an "administrative unit," or the smallest administrative jurisdiction that has effective oversight of normal animal movements into, out of, and within that jurisdiction, and that, in association with national authorities, if necessary, has effective control over animal movements and animal diseases locally (APHIS 2005). This is the smallest unit to which APHIS can effectively regionalize for animal disease status under its current regulations.

County SFVS officials organize and conduct regular disease prevention activities, public health supervision measures regarding foodstuffs on the market in the respective county, and inspection programs, and also implement, coordinate, and otherwise guide the activities of the district and city SFVS offices (SFVS 2003b).

1.2.3 Local veterinary services

There are local veterinary offices in 34 districts and 4 cities: Vilnius, Kaunas, Klaipėda, and Palanga (SFVS 2003b). The local veterinary services conduct control and prevention measures for animal diseases; monitor compliance with animal welfare requirements; keep registers of animal registration and identification; control and supervise the establishments handling food, feed, and animal waste; monitor compliance with the legal requirements for safety and quality of foodstuffs, raw materials, and potable water; and coordinate the activities of approved private veterinarians.

1.2.4 Border veterinary inspection

The BTSVS coordinates the activities of the border inspection posts (BIPs), controls the transport of commodities subject to veterinary supervision, conducts registration of the importers of foodstuffs, and generally acts to prevent the introduction of infectious animal diseases or substances that could be hazardous to human health (SFVS 2003b). Lithuania currently has 12 EC-approved BIPs with veterinary control: 1 airport, 3 rail

crossings, 5 road crossings, and 3 seaports (Corrigendum to Commission Decision 2004/469/EC). These are described in more detail under Section 7. Each BIP is headed by a chief border inspection officer and employs 4-6 veterinarians.

1.2.5 Diagnostic laboratory services

The NVL in Vilnius is the national reference laboratory for CSF, SVD, and FMD (APHIS 2004). Within the NVL there are 10 departments, including serology, virology, and molecular biology departments. In addition to the NVL, there are 5 branch and 6 regional laboratories that conduct bacteriologic, serologic, and anatomic pathologic examination for domestic diseases. These laboratories report to the NVL and the Director of the NVL reports to the Director of the SFVS. The diagnostic laboratory system is discussed at greater length in Section 10.

1.2.6 Internal and external audit system

Internal auditing – The FVAS is responsible for increasing the performance effectiveness of the SFVS and ensuring the control of public funds (SFVS 2003a; SFVS 2003b). The FVAS conducts inspections of the regional and local SFVS offices and other subordinate institutions annually. The audits focus on the practical and financial activities of the SFVS, including the effectiveness of use of budget allocations and other resources, details of financial accounts, use of resources for investments, lawfulness of veterinary certificate issuance, frequency of inspections of establishments, and sanctions imposed for initial offenses and measures applied upon repeated offences. A report prepared by the FVAS is submitted to the Director of the SFVS annually.

External auditing – The Food and Veterinary Office (FVO) of the EC's Health and Consumer Protection Directorate-General conducts audits of all Member States that include the provisions of any of the agreements on sanitary measures applicable to trade in live animals and animal products with third countries. Under Commission Decision 98/139/EC, the audited Member State must investigate and correct any identified sources of noncompliance within a given timeframe or may face sanctions applied by the EC.

The FVO conducted numerous animal health, animal welfare, and food safety inspections in Lithuania prior to accession. The majority of these reports has not been made public and was not made available for this assessment; however, no derogations were made for animal health at the time of accession. Lithuanian officials indicated that problem areas identified by FVO auditors are addressed promptly (APHIS 2004). Commission Decision 98/139/EC provides the authority for post-accession auditing actions necessary to ensure uniform compliance with the provisions of Community legislation.

1.3 Infrastructure of the official veterinary services

1.3.1 Physical infrastructure

The SFVS offices visited by the site visit team were housed in buildings that generally appeared well worn but in some cases were undergoing extensive renovations (APHIS 2004). County and district offices were often housed together in the same building, and county SFVS officials are often responsible for performing the duties of one of the district offices. All offices visited were equipped with computers with internet and intranet connections. Extensive paper files were kept in most cases, with occasional difficulties noted in storage and retrieval of records.

In comparison, the BIPs visited were relatively new and impressive, with extensive and comprehensive facilities. Similarly, the NVL facility was recently renovated and appeared well-equipped to run diagnostic tests using modern high-tech equipment purchased within the last 5 years (APHIS 2004). Renovations are underway to complete a biosecurity level 3 (BSL-3) containment space; when complete, work with CSF virus will move from BSL-2 to the BSL-3 facilities.

1.3.2 Personnel infrastructure

The entire SFVS employs approximately 1380 people: 83 at headquarters, 430 at county SFVS offices, 520 at district SFVS offices, 70 at city SFVS offices, and the remainder in other institutions (SFVS 2003a Annex 1; APHIS 2004). There are approximately 620 official veterinarians at the central, regional, and local levels, an additional 333 veterinarians in laboratories, universities, or training institutions, and 1377 private practitioners. The NVL employs 120 people and another 75 work in the branch and regional laboratories (APHIS 2004). Each BIP has 4-6 veterinarians and 2-3 support staff.

The SFVS also contracts with approved private veterinarians to perform certain duties, including monitoring the animal health and welfare status on farms and collecting samples for disease monitoring. To become approved, a private veterinarian must be recommended by an official veterinarian, and must submit an application for approval to perform certain tasks in a specific geographic area. Approvals must be renewed annually.

Vertical communication within the official veterinary services is based on instructions given by the central SFVS to the regional offices, instructions given by the regional SFVS to the local offices, feedback from the local SFVS to the regional offices and then on to the central SFVS regarding monthly activities performed, and regular routine contact between all officials and levels involved in enforcement and/or technical issues. In general, there is good communication between SFVS levels and with stakeholders.

There is one veterinary academy in Lithuania. All private and official veterinarians must be licensed to practice veterinary medicine. The central SFVS has approved a national training program and training is performed by the Continuing Training Center and leading staff of the SFVS (APHIS 2004). Training also occurs in EU laboratories and institutions. Approved private veterinarians attend obligatory training before starting their duties and update their training annually through the district offices (APHIS 2004; SFVS 2005). All training focuses in part on recognition of infectious animal diseases; veterinary officials indicated that the ability to recognize former OIE List A diseases is a concern, since Lithuania has not experienced an outbreak for many years.

Border veterinary inspectors participated in workshops and seminars prior to accession to familiarize themselves with EC legislation, and also received practical training at BIPs in other Member States (APHIS 2004). Border veterinarians attend annual training at the veterinary academy. County, district, and border veterinarian inspectors participate in national simulations of foreign animal disease outbreaks annually. The most recent simulations were FMD in 2002, CSF in 2003, and highly pathogenic avian influenza in 2004 (APHIS 2004). An FMD simulation was planned in 2005 (SFVS 2005).

1.3.3 Financial resources

Under the Law on Veterinary Activities, financing for the SFVS comes directly from the Lithuanian budget (SFVS 2003a Annex 3). This includes all measures for prevention and eradication of reportable diseases. Funding for subordinate institutions comes through the central SFVS offices. Lithuania finances all SVD and FMD monitoring in the country, but receives financial support from the EC for monitoring CSF and other diseases like Aujeszky's disease, bovine tuberculosis, and enzootic bovine leucosis (APHIS 2004). The EC also provides partial indemnity in case of an outbreak of SVD or CSF in accordance with Council Decision 90/424/EEC.

The SFVS received almost 8.4 million litas (2.7 million USD in June 2005) from the State budget in 2004, and an additional 1.2 million litas (388 thousand USD) from the Rural Support Fund (SFVS 2005). The EC also provided more than 20,000 Euros (22,300 USD) to support CSF monitoring activities. Partial cost recovery occurs through fees collected from food-producing companies and private laboratory clients (FVO 2000).

1.5 Discussion

The official veterinary services are hierarchically organized and appear to have clear lines of command and reporting. The responsibilities of each supervisory position and the departments are well defined; however, the SFVS is highly centralized and peripheral SFVS offices appear to rely heavily on headquarters personnel for direction and guidance. Official veterinarians, particularly at the central level, are familiar with directly applicable and transposed EC legislation concerning CSF, SVD, and FMD, and appear capable of effectively implementing the provisions thereof. Training is in place to enhance disease recognition among official and approved private veterinarians; however, the level of alertness for foreign animal diseases appears to be relatively low.

The official veterinary services have sufficient legal authority, personnel, and financial resources to carry out most animal health monitoring and disease control activities quickly and efficiently. Waste feeding to swine is prohibited and official veterinarians are stringent in monitoring compliance, particularly on larger operations. However, official veterinarians suspect an ongoing problem with waste feeding on small swine holdings, which is difficult to detect via sporadic on-farm inspections.

Issues of concern to APHIS are therefore (1) a relative lack of autonomy at the local SFVS level; (2) uncertainty regarding the alertness of field veterinarians to foreign animal diseases such as CSF, SVD, and FMD; and (3) limited but ongoing waste feeding to swine on small holdings. The impact of these issues on the risk of disease introduction into Lithuania and export risk to the United States is discussed further in Section 12.

2. Disease status in the region

Rinderpest has never been reported in Lithuania (OIE 2006).

2.1 Classical swine fever

Lithuania last reported a CSF outbreak in domestic swine in November 1992 in the Klaipėda district, on a small swine operation with 41 pigs (SFVS 2003a; OIE 2006). Prior to that, three outbreaks occurred in 1991 in Klaipėda, Utena, and Telšiai counties, and five outbreaks occurred in 1990 in Alytus, Kaunus, and Klaipėda counties. Figure 2.1 is a map of Lithuania outlining the counties. The number of swine involved in each outbreak ranged from 4 to almost 12,000. Although outbreaks occurred prior to 1990, Lithuanian officials do not consider the data from that time to be reliable. No cases in wild boar have been reported in recent years.

Figure 2.1: Map of Lithuania and adjacent regions

In the 1990-1992 outbreaks, protection and surveillance zones were established around the affected premises, all pigs on the premises were killed and the carcasses destroyed by burial, the holdings were cleaned and disinfected, and all pigs in the restriction zones were vaccinated against CSF (SFVS 2003a). The source of the outbreaks was not determined. Lithuanian officials consider the country to be free of CSF with vaccination since 1 January 1993, and free of CSF without vaccination since 1 July 2000.

2.2 Swine vesicular disease

SVD has never been reported in Lithuania (SFVS 2003a; OIE 2006).

2.3 Foot and mouth disease

FMD was reported in Lithuania in 1954, 1963, and 1972 (SFVS 2001b). The last reported outbreak was in 1982, type O virus. In this outbreak, affected animals were destroyed and all others were vaccinated. The OIE considers Lithuania to be free of FMD without vaccination since 1996 (OIE 2006). FMD has never been reported in susceptible free-ranging species such as wild boar or deer (SFVS 2001b).

2.4 Discussion

More than a decade has passed since the last reported outbreak of CSF in Lithuania, and over 20 years since the last reported outbreak of FMD. Both time periods far exceed those recommended by the OIE for disease freedom (OIE 2006). SVD has never been reported in either domestic swine or wild boar in Lithuania. Current surveillance practices for CSF, SVD, and FMD are discussed in Section 9.

3. Disease status of adjacent regions

Lithuania borders to the west with the Baltic Sea, to the north with Latvia, to the east and southeast with Belarus, and to the southwest with Poland and the Kaliningrad region of Russia (see Figure 2.1).

3.1 Classical swine fever

APHIS does not recognize any of the neighboring countries as free of CSF, although Latvia and Poland were under evaluation at the time this report was written. In this regard, APHIS considers any region affected with CSF until the agency has completed an evaluation showing otherwise. An evaluation is initiated when veterinary authorities of the foreign country request, which the third countries bordering Lithuania have not done.

Belarus reported a CSF outbreak in August 1995 (OIE 2006) and maintains a vaccination program for CSF (APHIS 2004). CSF outbreaks continue to occur in Russia; however, none has been reported in the Kaliningrad region since April 1996 (OIE 2006). Russia also maintains a vaccination program for CSF (APHIS 2004).

Of the EU Member States bordering Lithuania, Latvia last reported a CSF outbreak in domestic swine in April 1996 (OIE 2006). No cases in wild boar have been reported in recent years. Poland reported CSF outbreaks in domestic swine in September 1994 (OIE 2006). No CSF cases in wild boar have been reported in recent years; however, an FVO mission carried out in 1997 reported that virus-positive samples were found during routine wild boar monitoring in 1996 (FVO 2001).

Farther abroad, CSF infection is endemic in wild boar populations in the EU Member States of Germany and Slovakia (OIE 2004a) and has historically proven to be very difficult to eradicate (EC 1999). Infected wild boar constitute a reservoir for exposure of domestic swine and outbreaks have occurred outside of established control zones within the EU Member States, most recently in Slovakia (OIE 2004a).

3.2 Swine vesicular disease

APHIS does not regard any of the countries bordering Lithuania as free of SVD, although Latvia and Poland were under evaluation at the time this report was written. However, SVD has never been reported in Latvia, Belarus, or Russia (OIE 2006). Poland last reported SVD outbreaks in domestic swine in 1972 and the affected herds were destroyed. SVD has never been reported in wild boar in Poland.

3.3 Foot and mouth disease

APHIS does not recognize any of the neighboring countries other than Poland as free of FMD, although Latvia was under evaluation at the time this report was written. Poland is considered FMD-free but is subject to certain restrictions under 9 CFR 94.11[1]. FMD was

[1] Regions listed under 9 CFR 94.11 are in a special category for FMD because, even though APHIS has determined that the region is free of FMD, one or more of the following conditions occur: (1) the region supplements their national meat supply through the importation of meat from ruminants or swine from regions that are not designated in 9 CFR 94.1 as free of FMD; (2) they share a common land border with regions that are not designated as free of FMD; or (3) they import ruminants or swine from regions that are not designated as free of FMD under conditions less restrictive than would be acceptable for importation into the United States. The text of 9 CFR 94.11 is provided in Annex 1.

last reported in Latvia in November 1987, and the OIE considers both Latvia and Poland to be free of FMD without vaccination (OIE 2006).

Belarus reported an outbreak of FMD in 1982 (OIE 2006). No surveillance data have been reported to the OIE, and APHIS has little knowledge of disease detection or vaccination practices in this country. Sporadic FMD outbreaks continue to occur in Russia, most recently in the far eastern Amur region and territory of Khabarovsk (December 2005), and the Chita region bordering China (January 2006) (OIE 2006). All outbreaks were virus type Asia 1. No outbreaks have been reported in recent years in the Kaliningrad region. Russia maintains a vaccination program for FMD.

3.4 Discussion

3.4.1 Classical swine fever

The existence of common land borders with potentially CSF-affected regions is an issue of concern for reintroduction of CSF into Lithuania (see Sections 6 and 7). APHIS regards all of the countries bordering Lithuania as unknown risk for CSF, although Poland and Latvia were under evaluation at the time this report was written. None of these regions has reported a CSF outbreak in either domestic swine or wild boar in over 8 years; however, APHIS has little knowledge of surveillance and reporting practices, particularly in third countries such as Belarus and Russia. In addition, the third countries vaccinate for CSF in domestic swine, which could potentially mask the presence of the disease. CSF outbreaks outside of established control zones within affected EU Member States where CSF is endemic in wild boar pose a risk of disease spread prior to detection and containment.

3.4.2 Swine vesicular disease

APHIS regards all of the countries bordering Lithuania as unknown risk for SVD, although Poland and Latvia were under evaluation at the time this report was written. However, SVD has never been reported in Latvia, Belarus, or Russia, and Poland has not reported a case for over 30 years. While the potential for introduction of SVD from neighboring countries cannot be ruled out in the absence of additional information on surveillance and reporting practices, APHIS considers the likelihood low in comparison to CSF.

3.4.3 Foot and mouth disease

The existence of common land borders with potentially FMD-affected regions is an issue of concern for introduction of FMD into Lithuania (see Sections 6 and 7). APHIS considers all of the countries bordering Lithuania except Poland to be of unknown risk for FMD, although Latvia was under evaluation at the time this report was written. None of the neighboring regions have reported an FMD outbreak in any susceptible species for over a decade; however, APHIS has little knowledge of surveillance and reporting practices, particularly in third countries such as Belarus and Russia. In addition, Russia vaccinates for FMD, which could potentially mask the presence of the disease.

4. Extent of an active disease control program

4.1 Former OIE List A diseases

Lithuanian veterinary officials considered their country to be free of all former OIE List A diseases at the time of the APHIS site visit in November 2004 (SFVS 2003a; APHIS 2004). CSF, FMD, and Exotic Newcastle Disease are the only former List A diseases previously reported in Lithuania; rinderpest has never been reported and is not considered endemic in the European region (SFVS 2001a; OIE 2006).

4.2 Discussion

Active disease control programs do not exist in Lithuania for CSF, SVD, or FMD, since these diseases have not been reported for many years. Surveillance for these diseases is discussed in more detail in Section 9.

5. Vaccination status of the region

5.1 General information

Lithuania last vaccinated against CSF in domestic swine in 2000 using a modified live vaccine produced in the former Soviet Union (SFVS 2003a). Vaccination against CSF was prohibited on 1 July 2000 by Order of the Director of the SFVS No. 169. Lithuania has never vaccinated against SVD and it is currently illegal to own or use SVD vaccine (SFVS 2003a). The last vaccination against FMD in cattle occurred in 1985 and vaccination was officially prohibited in May 1995; other species were not vaccinated (SFVS 2001a). Veterinary officials indicated that animals would not be vaccinated if an outbreak occurred; however, the official contingency plans for CSF and FMD, described in greater detail in Section 11, allow for emergency vaccination in an outbreak situation if sanctioned by the EC.

5.2 Discussion

Vaccination against CSF, SVD, and FMD is officially prohibited in Lithuania. Since the last vaccination against FMD occurred well before vaccination was prohibited, the probability of a vaccine titer interfering with FMD surveillance is very low. However, vaccination of domestic swine against CSF occurred in 2000, so the potential exists to detect vaccine titers during CSF surveillance. Any positive result on surveillance testing triggers a comprehensive epidemiological investigation (APHIS 2004).

6. Separation from adjacent regions of higher risk

6.1 General information

Natural barriers to disease transmission include the Baltic Sea to the west and the Nemunas River along part of the southern border with the Kaliningrad region of Russia (SFVS 2001a; SFVS 2003a). There are few natural barriers to animal or human movement along the majority of the borders with Latvia, Belarus, and Poland.

6.2 Discussion

The general lack of natural barriers is an issue of concern for APHIS, since few impediments exist to introduction of CSF, SVD, or FMD via natural movement of wild animals or, less likely, human traffic. The primary wild animals in Lithuania and neighboring countries that are susceptible to FMD are wild boar, deer, and roe deer. Wild boar are also susceptible to CSF and SVD. None of these species is considered to be migratory in nature, but individual animals are known to travel substantial distances in search of food, during mating season, or in response to hunting or other habitat disruptions. Moreover, CSF is known to exist in wild boar in the extended European region (OIE 2006). Factors influencing the likelihood of disease introduction via natural movement of wild animals are discussed in more detail in Section 12.

7. Movement control and biosecurity from higher risk regions

7.1 Border inspection ports

7.1.1 Infrastructure

The SBTVS was established on 24 May 1991 in accordance with Resolution No. 208 of the Government of the Republic of Lithuania on the Veterinary Protection of the Territory of Lithuania (SFVS 2003a). Lithuania currently has 12 EC-approved BIPs with veterinary control: 3 seaports on the Baltic Sea at Molo, Malkų įlankos, and Pilies; 3 rail ports at Kena, Kybartai, and Pagėgiai; 5 road ports at Kybartai, Lavoriškės, Medininkai, Panemunė, and Šalčininkai; and 1 airport in Vilnius (Commission Decision 2001/881/EC). During the site visit, Lithuanian veterinary officials indicated that the Lavoriškės port was closed because the border port on the Belarus side had been closed (APHIS 2004).

All of the approved BIPs were built or remodeled to meet EC specifications as described by Annex II of Council Directive 97/78/EC and Commission Decision 2001/812/EC. Fully approved BIPs have separate sectors for unloading and inspection of live ungulates, other live animals, products of animal origin for human consumption, and products of animal origin not for human consumption (APHIS 2004). The live animal sectors have appropriate facilities for animal restraint and housing, and the product sectors have adequate room for offloading, examination, sampling, and storage at either room temperature, refrigerated, or frozen.

The BIP facilities house both the SFVS veterinary inspectors and Customs Service employees (APHIS 2004). Most of the EC-approved BIPs are open 24 hours, 7 days per week. All are fully computerized and have both internet and intranet access. All BIPS are also connected to TRACES and a secondary system that connects the BIPs to warehouses, farms, and other facilities, and is used to track movement of imported products once they enter Lithuania.

The volume of inspection at the BIPs visited by the APHIS team in November 2004 was very light and the facilities were operating well within the scope of their resources. The veterinary inspectors appeared knowledgeable of the pertinent EC and Lithuanian legislation and were confident in their job skills. Each BIP is inspected at least annually by headquarters SFVS staff and periodically audited by the FVO.

7.1.2 Biosecurity

Employees must pass through a clean room to enter any inspection sector of the BIP facilities, and must shower and change fully on entry and exit (APHIS 2004). Each sector is cleaned and disinfected after unloading and reloading, as are the storage rooms if used. Officials indicated that there are no general biosecurity practices, like disinfection mats, in place for trucks entering Lithuania in the absence of a reported disease outbreak. The chief of each facility has the authority to stop movement of animals and products through the BIP and each BIP has a contingency plan to follow in the event that an infectious animal disease is suspected (APHIS 2004).

The airport and seaports contract with private companies to collect catering waste from incoming flights or ships and transport it to an incineration facility (APHIS 2004).

Catering waste is considered to be Category I material under EC legislation and therefore must be destroyed. Border port veterinarians are responsible for monitoring the unloading and collecting of all catering waste and the loading for subsequent transport, whereas the regional SFVS are responsible for overseeing the actual disposal (SFVS 2003a).

7.2 Import controls

7.2.1 Legislative controls

Live animals, meat, meat products, and genetic materials are harmonized commodities under EC legislation, which means that the requirements for importation from third countries are standardized across all of the Member States. Council Decision 79/542/EEC lists the third countries from which live animals and fresh meat may be imported into the EC. Other legislation specifies third countries from which milk, meat products, meat preparations, wild game meat, and genetic products may be imported from third countries.

Council Decision 79/542/EC permits importation of live swine from Switzerland, Chile, Canada, New Zealand, and Iceland. APHIS recognizes all of these countries as free of SVD, with or without restrictions under 9 CFR 94.13[2], and all but Switzerland as free of CSF, with restrictions on Chile under 9 CFR 94.24. In this regard, the veterinary authorities of Switzerland have not requested that APHIS evaluate the CSF risk of their country. APHIS therefore has little knowledge of the CSF surveillance and reporting practices in Switzerland, except that it reported CSF in wild boar in 1999 and is bordered by Member States with endemic CSF infection in wild boar.

APHIS also recognizes these five countries as free of FMD, with restrictions on Switzerland and Chile under 9 CFR 94.11[3]. However, EC legislation permits importation of live ruminants from several countries that APHIS has not evaluated and considers of unknown risk for FMD, including Bulgaria, Croatia, and Romania.

Council Decision 79/542/EC also allows importation of fresh pork and pork products from domestic swine from Belarus and several other regions that APHIS has not evaluated and considers of unknown risk for CSF, SVD, and/or FMD, and also permits some of these regions to export fresh meat from wild boar to EU Member States. Importation of meat and meat products from both domestic and wild ruminants is permitted from several countries that APHIS regards as unknown risk for FMD. However, slaughter establishments, cutting plants, and cold storage units in third countries must be inspected and approved for export to the EC. The inspection process is stringent, although the EC may grant provisional approval prior to inspection if the exporting country provides sufficient guarantees that the required conditions are met.

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[2] Regions listed under 9 CFR 94.13 are in a special category because, even though APHIS has determined that the region is free of SVD, one or more of the following conditions occur: (1) the region supplements its national pork supply with fresh, chilled, or frozen pork from regions that are not designated in 94.12 as free of SVD; (2) it shares a common land border with regions that are not considered to be free of SVD; or (3) it has trade practices that are less restrictive than are acceptable to the United States. The text of 9 CFR 94.13 is provided in Annex 1.

[3] See footnote on page 19.

Commission Decision 2004/639/EC specifies the conditions for importation of bovine semen, including a list of authorized third countries, the veterinary requirements, and a list of approved semen collection centers. Import of bovine semen is permitted from approved semen collection centers in Australia, Canada, Switzerland, New Zealand, Romania, and the United States. Commission Decision 92/471/EEC permits importation of bovine embryos from these countries and also from Argentina, Bosnia-Herzegovina, Croatia, Israel, and the Former Yugoslav Republic of Macedonia. APHIS has not evaluated many of these countries and considers them of unknown risk for FMD.

Bovine semen collection centers must be approved by the EC in accordance with Council Directive 88/407/EEC as amended. Animals must be isolated for 28 days prior to entry into the center and the isolation facility must be located in a region that has been free of FMD for 3 months with no outbreaks within a 20 km radius for at least 30 days. Importation of bovine embryos is similarly controlled by EC legislation, including a list of authorized third countries, veterinary certification requirements, and a list of approved embryo collection teams.

Commission Decision 2002/613/EC specifies the import conditions for swine semen, including a list of authorized third countries, the veterinary requirements, and a list of approved semen collection centers. No third countries are currently listed under Commission Decision 94/63/EC as being authorized to export swine ova or embryos. Import of swine semen is permitted from approved collection centers in Canada, New Zealand, the United States, and Switzerland. Swine semen collection centers must be approved by the EC in accordance with Council Directive 90/429/EEC, which was amended by Commission Decision 1999/608/EC in response to the 1996-97 CSF outbreaks in domestic swine involving two semen collection centers.

Swine semen collection centers must be inspected by official veterinarians of the exporting country at least twice per year. Under the amended regulations, swine admitted to a semen collection center must originate from a herd that is not situated in an area restricted due to disease in domestic swine and must be quarantined for at least 30 days prior to entry. In the case of Switzerland, boars must test negative for CSF within the 30 days prior to quarantine and, to maintain approval, routine testing for CSF must be carried out on 25% of the animals in the center every 3 months or on all animals leaving the center within 1 year of admission. All animals must be tested at least once while at the center and at least every 12 months if their stay exceeds 1 year.

7.2.2 Certification

EC certification requirements for import of live animals and animal products from third countries are generally comprehensive with respect to OIE guidelines and must be signed by an official veterinarian of the country of origin. Commission Decision 2004/212/EC lays out models of veterinary certificates for live ruminants, swine, fresh meat from domestic ruminants and swine, and fresh meat from wild suidae and solipeds. Model veterinary certificates for embryos, semen, meat products, and related commodities are provided in other Commission Decisions.

The specific certificate used depends on the commodity for export, the exporting country and, in the case of live animals, the purpose for which they are exported (breeding,

production, or direct slaughter). BIP inspectors can download country and commodity specific certificates from a website maintained by the EC (VetLex).

For live animals, an official veterinarian must certify that the exporting region is free of FMD, CSF and/or SVD as appropriate, that the animals have remained in the region at least 3 months (slaughter animals) or 6 months (breeding or production animals) prior to export, and that they have not been exposed to any imported cloven-hoofed animals in the 30 days prior to export. The veterinarian must also certify that the animals have not been vaccinated, have remained at a designated holding or assembly center for 40 days prior to export, and that no outbreaks have occurred within a 20 km radius in the preceding 40 days. In addition, swine for breeding and/or production from Switzerland, Chile, or Iceland must test negative for CSF and SVD in the 30 days preceding export.

An official veterinarian must certify similar statements regarding disease freedom for meat and meat products exported to the EU, although meat from ruminants may be accepted from some regions in which vaccination against FMD is practiced. Certain regions must provide additional certification regarding carcass maturation, pH testing, and deboning of fresh meat. Similarly, certain regions must provide additional certification regarding swill feeding to domestic swine. One provision would require laboratory testing for CSF of fresh meat from feral swine, but this provision is not currently applied to any region.

For bovine semen, an official veterinarian must certify that the exporting country has been free of FMD without vaccination during the 12 months prior to semen collection, and that the semen collection center is approved by the EC and operates under the conditions required for approval (Commission Decision 2004/639/EC). Similarly, an official veterinarian of the exporting country must certify that swine semen originated from donor boars in an approved collection center, in a region free from FMD, CSF, and SVD for at least 12 months without vaccination (Commission Decision 2001/613/EC).

7.2.3 Veterinary inspection

Veterinary inspection and laboratory analysis protocols follow EC requirements as described in Council Directives 91/496/EEC, 97/78/EC, and other regulations (APHIS 2004). Veterinary documents for incoming shipments, including animal health certificates and the common veterinary entry document (CVED) required by EC legislation, must be submitted to the BIP by fax or email at least one working day prior to entry. The information is entered into a central database.

Live animals and products undergo three stages of control: (1) a document check to confirm that the health certificate is correct according to EC requirements and that it has been signed by an official veterinarian of the exporting country; (2) an identity check or visual confirmation of correct ear tags, chips, tattoos, or codes; and (3) a general physical check with a percentage of the shipment singled out for more thorough examination. Per Lithuanian officials, all shipments are subject to 100% document and identity control (APHIS 2004). Whether or not a physical check is conducted depends on a risk-based assessment of the product as described in EC legislation. A shipment is 100% inspected if there is suspicion of disease. Laboratory samples are taken as prescribed and hand-delivered to the NVL, with control samples kept at the BIP.

If the veterinary inspection is satisfactorily completed, an official veterinarian completes and signs the CVED, then passes it to the Customs Service (APHIS 2004). Customs officers meanwhile inspect the conveyance if appropriate. The original of the CVED accompanies the shipment to the point of destination. Livestock shipments must follow an approved route plan to their destination. Imported live swine and cattle are isolated at a previously approved destination facility, where they are checked once per week by an approved veterinarian. After 3 weeks, the animals are eligible for any additional required testing. If the shipment is refused, the appropriate information is entered on the CVED and all other EU BIPs are notified of the actions taken.

7.3 Transit controls

Transit of products between third countries is allowed under EC legislation, provided that there are no import restrictions on the source country. Seals are applied to the conveyance at the point of origin in the third country, although officials at the point of departure from the country can break and replace the seal for inspection purposes (APHIS 2004). A Lithuanian customs officer records the seal number and breaks the seal upon arrival at the BIP point of entry. The products in transit undergo document and identity checks, but no further unloading or alteration of the cargo is allowed while in Lithuania.

A veterinary inspection seal and customs seal are applied at the entry BIP for transit, a route plan is approved, and a specific exit point is designated (APHIS 2004). The BIP at the point of exit is notified of the transit shipment, records the exit, and sends confirmation back to the BIP at the point of entry when the vehicle leaves the country.

7.4 Controls on intra-Community trade

Trade in live animals and animal products within the EU is primarily governed by a series of Council Directives that were transposed into Lithuanian legislation prior to accession. Shipments to EU markets that cross Member State borders must originate from an assembly center and animals are required to remain on the assembly center premises for an observation period prior to trade. Lithuanian officials indicated that there are currently no official assembly centers in the country; however, if prospective animal traders fulfill the requirements for assembly centers an official veterinarian will go to the farm and certify the shipment (APHIS 2004).

An approved veterinarian performs the physical examination and any required sampling, and an official veterinarian completes and signs the required paperwork. Each lot of animals must appear healthy and be separated by gender. An official veterinarian certifies the health certificate and supervises the loading and unloading of animals for welfare reasons. The shipment is entered into TRACES and the server informs the point of destination as well as any border crossing points. An official veterinarian at the point of destination confirms the arrival. Council Directive 90/425/EEC allows for spot checks to be carried out at the point of origin and the destination to ensure that consignments are in compliance with the guarantees provided by the health certificates.

As an EU Member State, Lithuania is free to engage in intra-Community trade with any other Member State as governed by the transposed Directives. All live animals and animal products, including semen and embryos, must be accompanied by the appropriate certificate as specified in EC legislation. Intra-Community trade in swine and swine

products from CSF-affected regions of the Member States of Germany, Slovakia, France, and Luxembourg is prohibited under various Commission Decisions. Intra-Community trade in swine and swine products from SVD-affected regions of Italy is also prohibited. There are currently no reported outbreaks of FMD in the EU and therefore no trade restrictions based on this disease.

Slaughterhouses, cutting plants, cold storage units, milk processing plants, and semen collection centers must be approved by the Member State in which they reside according to criteria equivalent to those for exporting establishments in third countries. The veterinary services of the pertinent Member State and the FVO conduct periodic audits to monitor compliance with approval criteria and certification requirements.

7.5 Volume and type of imports

Currently, the highest volume of traffic into Lithuania from third countries comes through the seaports in the Klaipėda region and the road and rail ports from the Kaliningrad region (APHIS 2004). The Medininkai road port is the only border crossing fully approved for all live animals and animal products, and is therefore the only BIP through which live ruminants or swine can legally enter from third countries. This BIP has received 64 horses since accession, mostly for slaughter, and otherwise receives primarily treated hides and fish.

7.5.1 Swine and swine products

Lithuania has historically received live swine and swine products primarily from central and western European countries (see Annex 2) (SFVS 2001b; SVFS 2005). From 2001-2004, live swine and pork meat were imported from countries that APHIS considers to be (1) free of CSF under 9 CFR 94.9 and 9 CFR 94.10, with restrictions as stated under 9 CFR 94.24[4] and 9 CFR 98.38[5], except for certain regions of Germany and Italy; (2) free of SVD under 94.12 with restrictions as stated under 9 CFR 94.13; and (3) free of FMD under 9 CFR 94.1 with restrictions as stated under 9 CFR 94.11. Live swine and pork meat were also imported from Member States that APHIS considers to be affected with these diseases but that were under evaluation for disease freedom at the time this report was written. The most swine were imported from Poland, and the greatest tonnage of pork meat was imported from Estonia.

7.5.2 Ruminants and ruminant products

Lithuania has historically received live ruminants and ruminant products primarily from western European countries, as well as Latvia and Estonia (SFVS 2001b). From 2001-2004, live cattle were imported from Belarus (2 head in 2003), Germany, and Sweden

[4] 9 CFR 94.24 restricts the sourcing of pork, pork products, and breeding swine to regions where CSF has not been known to exist, and prohibits commingling with such commodities from CSF-affected regions. The text of 9 CFR 94.24 is provided in Annex 1.

[5] 9 CFR 98.38 restricts the sourcing of swine semen to semen collection centers approved by the national veterinary services of the exporting country, and restricts the sourcing and commingling of donor boars. In addition, the regulations stipulate that donor boars be isolated for 30 days and tested for CSF prior to entering the collection center, and the semen held for 40 days after collection while all boars are observed for signs of CSF. The full text of 9 CFR 98.38 is provided in Annex 1 of this document.

(SFVS 2005) (see Annex 2). Live sheep or goats were imported from France, Germany, Poland, and Russia (2 head in 2003). Beef meat was imported from Austria, Estonia, the Netherlands, Poland, and Sweden. Liquid milk was imported primarily from Latvia, but also from France and Germany, and small quantities from Finland, Poland, and Spain in 2004. All of these countries except Belarus and Russia are considered by APHIS to be free of FMD, with or without restrictions under 9 CFR 94.11, or were under APHIS evaluation for FMD freedom at the time this report was written.

7.6 Veterinary control of passenger traffic

Per SFVS officials, there are no uncontrolled border crossing points into Lithuania, but there are numerous crossings for passenger traffic and local transport that do not have veterinary inspection per se (APHIS 2004). These are controlled solely by the Customs Service and the military border patrol, and passage of animals or animal products is not permitted. All passengers from third countries must pass customs inspection, which is performed following Commission Regulation 2454/93, Council Regulation 2913/92, and regulations of the Lithuanian government (SFVS 2005).

There is considerable local passenger traffic between Lithuania, Belarus, and Russia, since many families and ethnic groups were separated when Lithuania regained its independence from the former Soviet Union. Fifteen percent of all passenger traffic is checked for illegal agricultural products under normal circumstances; the percentage increases to 85% if an outbreak is reported in the neighboring country (SFVS 2001b). Individuals attempting to cross the border with agricultural products at one of the Customs-controlled checkpoints are redirected to a BIP with veterinary inspection.

Commission Regulation 745/2004, which is directly applicable to all Member States, dictates that posters to promote public awareness of prohibited meat, milk, and meat and milk products be prominently posted at all border crossings. Under this Regulation, personal consignments of meat, meat products, milk or milk products from the Faeroe Islands, Greenland, Iceland, Liechtenstein, and Switzerland with a combined total weight not exceeding 5 kg are permitted entry, as well as personal consignments of these commodities from Andorra, Norway, and San Marino. APHIS has not evaluated many of these countries and considers the disease risk from them unknown, although none have reported an outbreak of CSF, SVD, or FMD in recent years, if ever.

The site visit team observed posters listing restricted items at some border ports, but not all (APHIS 2004). The team also observed prominently placed amnesty bins, which may serve to decrease the amount of illegal animal products carried across the border unintentionally.

7.7 Discussion

The BIPs visited by APHIS were impressive facilities that operated well within their resources. The EC standards for BIP approval are high and the approval and auditing processes are strict. The veterinary inspection staff appeared generally knowledgeable of relevant import control legislation and confident in implementing inspection procedures. Both electronic and paper records were well organized and readily accessible. Each BIP is inspected annually by the GVI and periodically audited by the FVO.

Based on the information presented here, the following pathways for disease introduction are of interest to APHIS: (1) import and trade of live animals; (2) import and trade of animal products; (3) incoming vehicular traffic; and (4) agricultural commodities for personal consumption. These pathways are discussed briefly below and in more detail in Section 12.

7.7.1 Import and trade of live animals

EC legislation imposes less stringent restrictions on sourcing of imported ruminants and swine than do APHIS requirements, which could result in a comparatively greater risk of FMD or CSF introduction into Lithuania. However, Lithuania has historically imported very few live animals from regions that APHIS does not consider free of these diseases, and live swine from Switzerland would appear to present a minimal risk of CSF introduction under current EC certification requirements. EC import policies and the restricted scope of SVD infection worldwide limit the risk of introducing this disease into Lithuania.

Intra-Community trade in live animals on the internal common market creates a potential risk of CSF introduction into Lithuania. Although standard control measures limit the movement of live swine from restricted areas, CSF outbreaks have occurred outside of established control zones within Member States where CSF is endemic in wild boar, posing a risk to the common and export markets until detected. APHIS considers the risk of introducing FMD or SVD into Lithuania via intra-Community trade in live animals to be low at present time.

Risk mitigation measures currently in place substantially reduce the risk of disease introduction into Lithuania via import or trade in live animals. These measures include a mandatory observation period and veterinary inspection prior to shipment, certification of disease status by an official veterinarian, and isolation procedures with veterinary spot-checks at the point of destination. Imported animals also undergo veterinary inspection at the port of entry into Lithuania.

EC certification requirements also reduce the risk of disease introduction and are generally comprehensive with regard to international standards. Country and commodity specific certificates are readily available to veterinary inspectors on the internet and the inspectors appeared familiar with the content and governing regulations. The observation periods and veterinary inspection greatly increase the likelihood of disease detection but depend in large part on the extent of clinical signs and the ability of the observers to recognize the diseases of concern. Serological testing for CSF, SVD, or FMD is generally not required for import or trade.

7.7.2 Import and trade of animal products

Harmonized EC legislation permits importation of fresh pork and pork products, as well as fresh meat from wild boar, from third countries that APHIS does not consider free of CSF, SVD, and/or FMD (countries of unknown risk). EC legislation also allows importation of fresh meat and meat products from domestic and wild ruminants from third countries that APHIS considers of unknown risk for FMD. In addition, EC legislation permits import of swine semen from Switzerland, which APHIS has not

evaluated and regards as unknown risk for CSF, as well as bovine semen and embryos from regions that APHIS considers of unknown risk for FMD.

Intra-Community trade in most animal products is prohibited from regions affected by CSF or SVD, which substantially limits the risk to the common market; however, CSF outbreaks occurring outside of established control zones pose a risk to the common and export markets during the time that they remain undetected.

Risk mitigation measures currently in place include approval of establishments for export or trade, veterinary certification requirements, and veterinary spot-checks at the point of destination. Imported products must also originate from authorized third countries and undergo veterinary inspection at the point of entry. Although veterinary inspection of imported animal products at the port of entry is comprehensive, testing for CSF, SVD, or FMD is generally not required. Consequently, veterinary inspection would likely detect irregularities in documentation or identity, but the physical examination would not detect virus if present.

However, EC certification requirements for meat, meat products, and genetic material are generally comprehensive with regard to international standards and must be signed by an official veterinarian of the country of origin. The certificate used depends on the commodity for export and includes specific guarantees for products from certain countries. Approval of exporting establishments substantially limits exports from authorized third countries, particularly for genetic material.

7.7.3 Incoming vehicular or human traffic

As discussed in Section 3, Lithuania shares land borders with several countries that APHIS has not evaluated and regards as unknown risk for CSF, SVD, or FMD, and there is considerable local traffic to and from these countries. None of the neighboring regions has reported outbreaks of these diseases in several years and the likelihood of such diseases in domestic animal populations is low. However, APHIS has little knowledge of the disease surveillance and reporting practices in some of these regions, particularly Russia and Belarus.

Lithuania currently does not have standard biosecurity measures in place for disinfection of live-haul trucks and other vehicular traffic at the point of entry from neighboring third countries. Implementation of such practices appears to depend heavily on reporting of disease outbreaks by neighboring regions. Officials indicated that, if an outbreak were reported, measures would be put in place to disinfect the undercarriage of vehicles as directed by the central veterinary authorities. Additional biosecurity measures would be enacted for airline passengers from affected regions in the event of an outbreak further abroad.

7.7.4 Agricultural commodities for personal consumption

The majority of border crossings are controlled by the Customs Service, without veterinary control per se. EC legislation permits personal consignments of products that could carry live CSF, SVD, or FMD virus from countries that APHIS has not evaluated and considers of unknown risk for these diseases. More importantly, the intensity of Customs inspections on the border with third countries appears to depend in large part on disease reporting in those countries; a relatively small percentage of the total passenger

traffic is given a thorough inspection in the absence of a reported disease outbreak. Signs indicating prohibited items and prominently placed amnesty bins may decrease the amount of illegal products unintentionally carried across the border.

8. Livestock demographics and marketing practices in the region

8.1 Livestock demographics

Lithuania has an extensive rural economy based primarily on small holdings with multiple animal species. Swine, cattle and small ruminants are distributed throughout the country, mainly on small farms with 1-5 pigs and 1-3 head of cattle (SFVS 2003a). There are few sheep or goats in Lithuania and these are mostly distributed in small numbers on individual farms. Cows are kept for milk production, and beef is produced by fattening bull calves and culling low-producing cows. Biosecurity measures in place on the dairy farm visited by the APHIS team would limit but not prevent contact with wildlife or with live virus on clothing or vehicles (APHIS 2004).

There are approximately 21 large swine operations with over 5,000 pigs (SFVS 2003a). These are confinement operations with restricted access, each of which is housed internally with perimeter fencing. The site visit team noted biosecurity measures such as limiting or excluding vehicular traffic onto the farm, thoroughly disinfecting any entering vehicles, limiting entry of nonessential personnel and visitors, requiring a change of clothing when entering the production areas, etc (APHIS 2004). Smaller holdings exhibited less attention to biosecurity and disease exclusion; however, swine on small holdings are often raised indoors. The large dairy farm visited had perimeter fencing on the pasture land which would not prevent direct or indirect contact with wildlife. Other biosecurity measures included footbaths and overalls for workers.

8.1.1 Ruminant census

Lithuanian agriculture has traditionally included dairy-beef husbandry (SFVS 2001a). In 2004, there were an estimated 946,345 head of cattle on 207,500 holdings (SFVS 2005) (see Table 8.1). Small farms predominated and fewer than 200 farms had over 150 head of cattle (SFVS 2001b). The major cattle breeds are the Lithuanian Black and White, Lithuanian Red, and Holstein (SFVS 2001a). There were also an estimated 34,857 sheep and 6,810 goats in 2004 (SFVS 2005). The major sheep breed is the semi-fine wool-producing Lithuanian Blackface (SFVS 2001a). Goats are mostly indigenous low-producing breeds, kept by individual owners.

Table 8.1: Ruminant demographics by county as of 1 January 2004

County	Cattle	Sheep	Goats
Alytus	56,494	1,651	137
Kaunas	131,605	3,660	1,505
Klaipėda	91,526	1,342	319
Marijampolė	106,549	1,455	376
Panevėžys	104,772	4,546	1,105
Šiauliai	137,294	3,363	934
Tauragė	106,784	1,649	218
Telšiai	75,670	3,329	418
Utena	62,395	8,215	621
Vilnius	73,256	5,647	1,177
Total	946,345	34,857	6,810

8.1.2 Domestic swine census

In 2003, there were an estimated 1.05 million domestic swine on 155,000 holdings (SFVS 2003a Annex V). The major pig breed is the Lithuanian White, although there are also significant numbers of Swedish and Finnish Yorkshire, and German and Finnish Landrace (SFVS 2001a). The number of swine in each county is given in Table 8.2, as is the swine density. The density figures should be interpreted in light of the number of large swine farms in the county – a map detailing the location of swine operations with over 5,000 pigs is shown in Figure 8.1. According to Lithuanian officials, these large farms are most likely to export swine and swine products to the United States.

Table 8.2: Porcine demographics, density, and land area by county

County	No. pigs*	Pig density per km^2	Estimated No. wild boar**	Wild boar density per km^2	Area (km^2)
Alytus	55,557	10.24	1,120	0.206	5,425
Kaunas	140,859	17.24	3,901	0.477	8,170
Klaipėda	94,449	16.44	1,893	0.329	5,746
Marijampolė	121,405	27.20	1,497	0.335	4,463
Panevėžys	175,298	22.24	3,601	0.457	7,881
Šiauliai	185,215	21.17	3,350	0.383	8,751
Tauragė	86,485	22.32	1,621	0.418	3,874
Telšiai	61,966	14.97	1,750	0.423	4,139
Utena	45,119	6.27	2,760	0.383	7,201
Vilnius	94,670	9.81	3,108	0.322	9,651
Total	1,061,023	16.25	24,601	0.377	65,301

*2003 data **2004 data

8.1.2 Wild boar census

In 2004, there were an estimated 24,600 wild boar distributed throughout Lithuania (SFVS 2005). The number of wild boar in each county is given in Table 8.2, as well as the relative wild boar density, which is fairly consistent throughout the country.

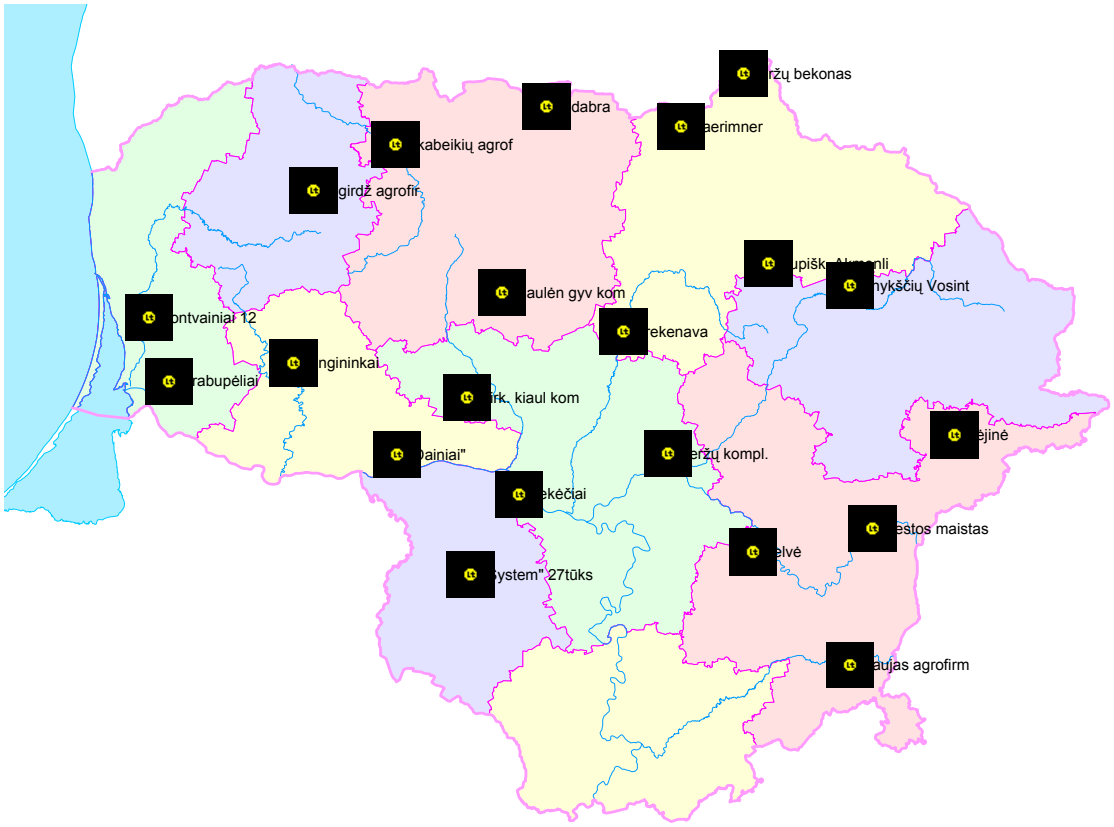
8.2 Animal identification system

Article 16 of the Law on Veterinary Activities provides for compulsory registration of animals and holdings, and obligatory identification of cattle, swine, sheep, and goats (SFVS 2003a Annex 3). Detailed animal identification and herd registration requirements are contained in 37 separate legal acts (APHIS 2004). An identification program for cattle started in 1999, for sheep and goats in 2001, and for swine in April 2004. The purpose of these programs is to enable identification and registration of animals, registration of animal keepers, and control of animal movement.

Animal owners are required to inform the veterinary authorities within 7 days of an event such as birth, sale, or death of an animal (SFVS 2001b). A form for this purpose can be filled out by a private veterinarian, an agricultural specialist, a veterinary assistant, or the farmer if he/she has had special training to fill out the form correctly. The form goes to

the district SFVS office, where the animal identification staff enters the data into a computer database which connects to the governmental Rural Information Center. Tags for ruminants have barcodes and are delivered to the district SFVS office, whereas orders for pig tags are placed by email and the manufacturer provides the tags directly to the farm. If a tag is lost the animal owner can apply for an identical replacement tag.

Figure 8.1: Location of swine operations with more than 5,000 pigs



There are separate animal identification systems for ruminants and for swine. Based on Lithuania requirements, newborn and exported cattle are issued passports, and all cattle are identified by two eartags (APHIS 2004). Cattle imported from third countries are given new eartags and information on the original identification is kept in the central database (SFVS 2001b). Eartags on cattle entering Lithuania from EU Member States remain valid. Lithuanian officials indicated that the bovine identification system is fully implemented and operational (APHIS 2004). However, the reports of an FVO mission in November 2004 indicated that only about 5% of the cattle population had passports and that requirements for issuance of passports to newborn animals were not enforced (FVO 2004).

The swine identification system consists of herd identification rather than individual animal identification (APHIS 2004). Each herd receives an 11-digit identification number consisting of a 1-digit species code, a 4-digit area code, and a 6-digit unique identification number. Events resulting in changes in herd numbers must be reported to

the veterinary authorities within 7 days. Individual swine are only identified if they leave the holding, using button tags (valuable/breeding animals) or a tattoo (most common).

Animal owners or keepers are responsible for maintaining an inventory of animals in the form of an on-farm register and recording information concerning births, movements, and deaths (SFVS 2003a; APHIS 2004). District officials arrange annual verification on approximately 5% of farms and confirm that the information in the central database matches the farm register and the actual situation. Herd owners are responsible for registering their herds with local veterinary officials and a registration number is necessary for payment of subsidies. There are currently three different registration systems for cattle farms but Lithuanian officials indicated that they are moving towards a single system. Lithuania has not been successful in registering all herd codes in a national database but anticipates a comprehensive system by the end of 2006 (APHIS 2004).

8.3 Marketing practices

Lithuanian officials indicated that no large marketing centers exist in the country (SFVS 2003a), and that the sale of animals generally takes place directly through the owner or at small local markets. A recent FVO report indicated that several animal markets are in the process of authorization (FVO 2004). Some of the large swine operations contract with a specific slaughterhouse for routine slaughter and processing. These agreements may be exclusive, creating a relatively closed system. Per Lithuanian officials, there is currently little export or trade in swine, but some trade in cattle (APHIS 2004).

8.4 Internal movement controls

Animal movement within Lithuania is governed by the Law on Veterinary Activities, animal welfare legislation, animal identification legislation, and regulations concerning export and trade. A health certificate is required for any animal movement (SFVS 2003a; APHIS 2004). Health certificates for internal movement can be signed by approved private veterinarians. Buyers cannot register an animal without a valid health certificate. When animals go to slaughter, one copy of the health certificate goes to the local SFVS offices and another goes with the animal to the slaughterhouse. The veterinary supervisor at the slaughterhouse enters the animal identification numbers into the central database for confirmation of slaughter.

8.5 Discussion

The large number of small holdings in Lithuania increases the difficulty for the official veterinary services in monitoring compliance with legislation concerning waste feeding, animal identification, and herd registration. The preponderance of small holdings could also hinder detection and reporting of an outbreak. However, small holders appear to value their animals and to have good working relationships with their veterinarian, which increases the likelihood of timely disease detection and reporting. In addition, the staffing at the district SFVS offices is sufficient to maintain a reasonable level of premises inspections, and the inspection process is thorough.

A good cattle identification system is in place but the herd/holding registration systems are in need of consolidation and simplification. Herd/holding registration systems are in the implementation stages for swine and small ruminants; in general, the larger producers are well integrated, but small producers are lagging behind. The current system would

most likely capture movement to slaughter, but relies heavily on reporting by the seller and purchaser for capturing other transactions. The combination of a relatively large number of unregistered small holdings and potential underreporting of animal movements could hinder an epidemiological investigation in an outbreak situation.

The large swine operations that are housed internally with perimeter fencing and restricted access are well protected from contact with wild boar. Standard biosecurity measures at the facilities visited would serve to minimize potential exposure to CSF, SVD, or FMD viruses via other routes as well. Pigs on smaller holdings are less protected and interaction with wild boar is possible, considering the distribution and overlap of the two species. The biosecurity measures on the dairy farm visited would not prevent direct or indirect contact with wildlife, or contact with live virus on clothing or vehicles.

In summary, small holdings predominate in Lithuania, which presents a challenge in terms of monitoring and enforcing compliance with existing legislation, as well as implementing and maintaining national animal identification systems. In addition, the relative lack of biosecurity measures on small swine holdings increases the probability of interaction with wild boar and introduction of CSF, SVD, or FMD viruses by other routes in comparison with the larger operations. Although these factors potentially increase the risk of introducing disease and establishing an outbreak prior to detection on small operations, exports to the United States will likely be derived from the larger operations, which have more stringent biosecurity measures in place and are more closely monitored by the official veterinary services.

9. Disease surveillance in the region

9.1 General information

National surveillance plans exist for CSF and SVD in domestic swine and for CSF in wild boar. Lithuania does not conduct surveillance for SVD in wild boar. Limited sampling for FMD occurs in cattle, domestic swine, roe deer, and wild boar. The surveillance plans are updated annually by means of an Order of the Director of the SFVS. Testing is financed through the SFVS budget each year with support from the Rural Support Fund and the EC (for CSF surveillance only) (SFVS 2005). Samples are taken by official and approved private veterinarians (APHIS 2004).

The Program on Control of Contagious Swine Diseases, approved by Order of the Director of the SFVS No. B1-13 in January 2003, lays out the general provisions for surveillance for FMD and SVD in domestic swine, and for CSF in both domestic swine and wild boar (SFVS 2003b Annex 1). The plan calls for random sampling of pigs in semen collection centers, breeding and production herds, and slaughterhouses. Sampling focuses on higher risk production farms as defined by animal density and therefore often targets larger swine operations (>1000 pigs).

The sampling protocols described below are generally designed to detect 5% prevalence with 95% confidence, at the county level. Sample sizes are calculated using freeware[6] that assumes 100% test sensitivity and specificity. Veterinary officials indicated that sampling for CSF will also occur at slaughter in 2005 (APHIS 2004).

9.2 CSF surveillance in domestic swine

Lithuania has carried out surveillance for CSF in domestic swine and wild boar since 1995, when 82 blood and tissue samples from domestic swine and 35 blood and tissue samples from wild boar were tested with negative results (SFVS 2003a). The number of samples increased gradually to the present level, as summarized in Table 9.1 and described in more detail in Annex 3. No confirmed positive laboratory test results have been reported. Surveillance peaked in 2003 in preparation for accession to the EU, and declined in 2004. The number of samples taken each year appears to exceed the target figure. Few, if any, suspicions of CSF are reported from the field annually (APHIS 2004).

The Surveillance Program for CSF in Lithuania of 2003 outlines procedures for sample collection and shipping during routine surveillance (SFVS 2003b Annex 4). Each county SFVS informs the central SFVS annually of the number of herds and the number of pigs per herd in the county, and the central office formulates a specific sampling plan. Sampling is discretionary at the county level and therefore varies among counties; for example, in 2003 Kaunas county sampled only large swine operations (2,000 – 25,000 pigs), whereas Alytus county sampled small, medium, and large holdings.

9.3 CSF surveillance in wild boar

CSF surveillance in wild boar is also organized from the central level. The wild boar population is estimated annually based on information from hunting units on the number of wild boar killed in the previous year (SFVS 2003b; APHIS 2004). The general

[6] WinEpiscope.

sampling plan calls for 58 serum samples in areas with more than 1.0 wild boar shot per square kilometer (densely populated) to detect a serological prevalence of 10% with 95% confidence, and 59 serum samples to detect a 5% prevalence with 95% confidence (SFVS 2003a; SFVS 2003b Annex 4). In areas with less than 1.0 wild boar shot per square kilometer, 29 samples are required to detect a 10% prevalence with 95% confidence.

During the site visit veterinary officials indicated that sampling is distributed evenly throughout Lithuania, since wild boar are fairly evenly distributed (APHIS 2004). Each county is directed to collect 60 samples (600 samples total). Some counties appear to have difficulty meeting their quota, although the total of 600 is attained by extra sampling in other counties.

The Order of the Director of the SFVS No. 48/5550 "Requirements for Veterinary Supervision at Hunting" stipulates the sampling practices in wild boar for CSF surveillance (SFVS 2003a). Each hunting unit must contract with an approved private veterinarian for sampling, which occurs at approved dressing sites (APHIS 2004). The official services inspect the dressing sites annually and the Committee on Environmental Sampling issues a license.

Table 9.1: Summary of CSF surveillance in domestic swine and wild boar January 1995 – September 2004

Year	Pigs	Wild boar
1995	82	35
1996	80	32
1997	1,109	170
1998	915	200
1999	881	126
2000	909	113
2001	1,697	170
2002	2,518	446
2003	15,911	643
2004	2,800	395

Since 1996, only serum samples have been tested for CSF in hunted wild boar (SFVS 2003a). Apparently healthy older boar, as evidenced by eruption of the third molar, are preferred. Although the Surveillance Program for CSF in Lithuania (SFVS 2003b Annex 4) stipulates that postmortem examinations should be conducted on wild boar found dead and tissue samples taken for surveillance purposes, veterinary officials indicated that this rarely occurs (APHIS 2004). Very few, if any, field suspicions of CSF in wild boar are reported annually (APHIS 2004). Summary sampling numbers for 1995-2004 are shown in Table 9.1 and more detailed results are given in Annex 3. No confirmed positive test results have been reported.

9.4 SVD surveillance in domestic swine

The surveillance plan for SVD was very similar to that for CSF in domestic swine in 2003; however, the number of samples taken in the years before and after was substantially reduced (see Table 9.2). Sampling presumably peaked in 2003 in preparation for accession to the EU; in 2004, the sampling plan called for 60 samples per county (APHIS 2004). The number of surveillance samples is summarized in Table 9.2 and additional surveillance results are given in Annex 4. No confirmed positive laboratory test results have been reported and no suspect cases of SVD have been reported from the field.

Table 9.2: Summary of SVD surveillance in domestic swine January 1995 – September 2004

Year	No. Samples
1995	1,010
1996	1,873
1997	504
1998	1133
1999	214
2000	63
2001	252
2002	725
2003	14,378
2004*	337

9.5 FMD surveillance

Samples for FMD surveillance in domestic swine are collected from breeding and production herds, as well as boars at semen collection centers in accordance with EC regulations (APHIS 2004). The official sampling plan for 2004 called for 72 samples per county on a schedule set by the central SFVS. FMD surveillance is also conducted in cattle, wild boar, and roe deer, and sampling is based on population density. Samples are taken from hunted wild species at approved dressing sites.

Table 9.3: Summary of FMD surveillance January 2000 – September 2004

Year	Cattle	Pigs	Wild boar	Elk	Deer	Roe	Fallow deer
2000	481	264	41	18	35	106	0
2001	230	977	101	6	25	142	5
2002	263	860	281	14	17	277	44
2003	704	1,583	549	0	0	381	0
2004*	518	1,255	653	1	0	215	0

Summary surveillance numbers for 2000-2004 are shown in Table 9.3, and addition surveillance results are given in Annex 5. The NVL has not reported any confirmed positive results and no suspect cases of FMD have been reported from the field in any species in recent years.

9.6 Discussion

Training and national simulation exercises as discussed in Section 1 aid in passive surveillance for foreign animal diseases by developing and maintaining the ability to quickly detect these diseases. However, the fact that there have been no suspect cases of CSF, SVD, or FMD in recent years raises the concern of whether veterinarians in the field are likely to recognize and report a suspect case when faced with compatible clinical signs.

9.6.1 Classical swine fever

Lithuania conducts ample risk-based surveillance to detect CSF in domestic swine, although the sampling scheme may underestimate the number of samples needed to detect the target 5% prevalence at the 95% confidence level. The sampling plan in domestic swine is not standardized between counties or districts and is generally targeted towards larger operations, which may not represent the holdings at greatest risk.

In addition, surveillance is based on serology for antibodies to the CSF virus, as is common throughout the world. Since antibodies occur late in CSF infection, serological surveillance would likely miss an early infection (e.g. first 21 days). Training and national simulation exercises as discussed in Section 1 aid in passive surveillance for CSF by developing and maintaining the ability to quickly detect these diseases. Passive surveillance is likely sufficient to detect overt clinical signs of CSF, but detection may be delayed in the case of moderate or low virulence strains.

Lithuania's sampling scheme in wild boar is also designed to detect CSF at 5% prevalence with 95% confidence at the county level, but may not be sufficient to quickly detect an outbreak. Surveillance efforts are hindered by the lack of positive incentive for sampling of wild boar by hunters and the low level of surveillance among wild boar found dead.

9.6.2 Swine vesicular disease

Lithuania conducts SVD surveillance in domestic swine at a considerably lower level than for CSF, and relies more on passive surveillance for this disease. Consequently, detection may be delayed in the absence of overt clinical signs, although serological surveillance would eventually detect the historical presence of the disease. These factors affect the timeframe for outbreak detection and the export risk to the United States, as discussed in Section 12. Lithuania does not conduct surveillance for SVD in wild boar, since this disease has never been reported in wild boar in the country.

9.6.3 Foot and mouth disease

Lithuania also conducts FMD surveillance in domestic ruminants, wild boar, and deer, at a comparatively low level, which may delay disease detection. The sampling plan in domestic swine is not standardized between counties or districts and generally targets

larger operations, which may not represent the holdings at greatest risk. In addition, surveillance is not conducted in reservoir populations such as sheep and goats.

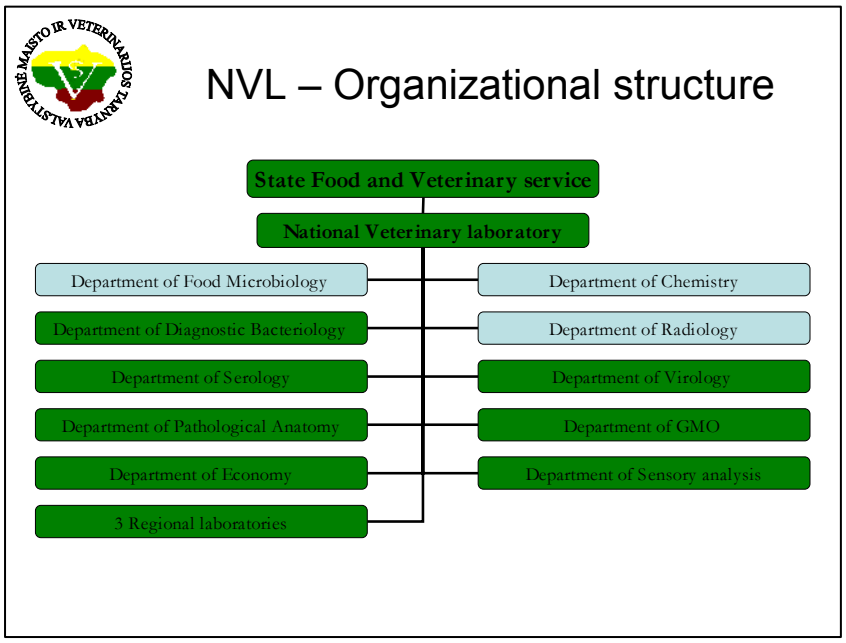
10. Diagnostic laboratory capacity

10.1 General information

The NVL is located in the capital city of Vilnius and is the national reference laboratory for animal diseases and food safety in Lithuania (SFVS 2004). Within the NVL there are 10 departments, as shown in Figure 10.1. There are regional laboratories in Kaunas, Panevėžys, and Šiauliai, and 6 smaller laboratories. The peripheral laboratories conduct bacteriologic, serologic, and anatomic pathologic examinations for domestic diseases (APHIS 2004). Per NVL officials, all tests are conducted according to OIE standards (SFVS 2003a).

The NVL employs a total of 120 people, with an additional 75 people working in the peripheral laboratories (APHIS 2004). Eighty-four employees have a university or equivalent degree, 4 have advanced scientific degrees, and 51 are specialists with higher non-university training (SFVS 2004). The NVL is ISO/IEC 17025 accredited and takes part in ring tests between EU reference laboratories regularly (APHIS 2004). The laboratory facilities were recently renovated and a BSL-3 containment space is due to be completed sometime in 2005.

Figure 10.1: Organizational structure of the NVL



Testing for CSF, SVD, and FMD occurs primarily in the Serology, Virology, and Molecular Biology (GMO) Departments of the NVL (SFVS 2004; APHIS 2004). Samples are received at a dedicated receiving area and initially assigned to a single department, e.g. Serology. If confirmatory testing by another department is required, it is the responsibility of the originating department to track the progress of testing and to include the confirmatory results in the final report (APHIS 2004). Animal health/disease control submissions are currently tracked by paper. Results are reported centrally to the

Animal Health Department of the SFVS as well as to the district veterinary office of origin and the private veterinarian who submitted the sample(s), if applicable.

10.2 Classical swine fever

The NVL performs the following diagnostic tests for CSF (APHIS 2004; SFVS 2004):

1. Serology – E^{rns} ELISA for detection of antibody (Ceditest)
2. Virology
   a. ELISA for detection of antigen (Bommeli)
   b. Direct fluorescent antibody test (DFAT) for antigen (Ceditest)
   c. Immunoperoxidase test (IPT) for antigen (Ceditest)
   d. Virus neutralization test for antibodies against CSF or BVD virus
3. Molecular biology – Reverse transcriptase PCR (RT-PCR)

Serologic samples for CSF detection are initially screened by the Serology Department using the antibody ELISA (APHIS 2004). The NVL can perform up to 20,000 CSF screening tests per year (SFVS 2003a). Sera giving suspicious reactions are forwarded to the Virology Department for confirmatory testing using the virus neutralization test, which is performed under BSL-2 conditions (APHIS 2004). Virus strains and control anti-sera used in the test are obtained from the EU Reference Laboratory, Institute of Virology, Hannover, Germany. The Virology Department also carries out the DFAT and IPT on frozen organ sections, as well as the antigen ELISA.

The site visit team noted that antibody ELISA is not as sensitive for screening purposes as virus isolation (APHIS 2004). It is satisfactory on the herd level but not at the individual animal level. Usefulness of this test as a surveillance tool is thus very dependent on the sampling design. NVL officials subsequently indicated that more sensitive assays such as virus isolation and real time RT-PCR are being phased in for use on a routine basis (SFVS 2005). The site visit team also noted that the Ceditest conjugate used in the DFAT gives weak signals on positive frozen organ samples and is therefore of questionable usefulness for surveillance purposes (APHIS 2004). NVL officials indicated that they are considering improving the quality of the conjugate and have applied to the U.S. Foreign Animal Disease Diagnostic Laboratory for assistance (SFVS 2005).

10.3 Swine vesicular disease

The NVL currently conducts an ELISA for detection of antibody against SVD virus (competitive ELISA utilizing MAb SVDV UK-22) and can perform up to 10,000 screening tests per year (APHIS 2004; SFVS 2003a). At the time of the site visit, no tests were conducted for SVD virus antigen detection (APHIS 2004). Samples for antigen detection and virus isolation are instead sent to the EC reference laboratory in Pirbright, United Kingdom, which could significantly delay reporting of a SVD outbreak. Subsequent to the site visit, Lithuanian officials indicated that the NVL is expanding the diagnostic capabilities for SVD by implementing a PCR assay to detect SVD virus nucleic acids (SFVS 2005).

10.4 Foot and mouth disease

The NVL conducts an ELISA for detection of antibody against FMD virus (Ceditest 3ABC competitive ELISA) and can conduct up to 3,000 tests for FMD per month (SFVS 2001b; APHIS 2004). External control sera are obtained from the World Reference

Laboratory for FMD in Pirbright. In addition to the control sera that are provided with each kit, internal control sera are routinely included in each test run. At the time of the site visit, no tests were conducted for FMD virus antigen. Samples for antigen detection and virus isolation are sent to the World Reference Laboratory for FMD, which could significantly delay recognition and reporting of a FMD outbreak. Subsequent to the site visit, Lithuanian officials indicated that the NVL is expanding the diagnostic capabilities for FMD by implementing a PCR assay to detect FMD virus nucleic acids (SFVS 2005).

10.5 Discussion

The NVL has adequate facilities, staff, and equipment to support surveillance for CSF, SVD, and FMD; however, at the time of the site visit, CSF surveillance was limited by the comparatively low sensitivity of the screening ELISA, and diagnostic capabilities for SVD and FMD were limited by reliance on serology. Lithuanian officials subsequently indicated that the NVL has taken steps to address these issues by phasing in virus isolation and real time RT-PCR for detection of CSF virus, working to upgrade the conjugate used in the DFAT test, and implementing PCR assays to detect SVD and FMD virus nucleic acids. Laboratory security practices appear adequate to prevent the escape of live virus.

11. Emergency response capability

11.1 General information

Lithuania has in place contingency plans and supporting legislation for control and eradication of CSF, SVD, and FMD outbreaks. These plans conform closely to the provisions of EC legislation and the control measures for all three diseases are very similar in several regards. A central element is that the Contagious Disease Control Centers (CDCC), which in Lithuania are subordinate to the SFVS, coordinate the response in case of suspicion or confirmation of CSF, in consultation with an expert group if necessary (SFVS 2003a Annex VII).

The CDCCs are hierarchically organized at the central, regional, and local levels. The main function at the central level is to aid in coordinating and supervising the emergency response at the regional and local levels. District SFVS officials, and in some cases county SFVS officials, are responsible for carrying out the technical investigation in accordance with Lithuanian regulations and EC provisions. District officials appeared familiar with the provisions of the contingency plans but indicated reliance on the central SFVS for guidance of the emergency response beyond the initial stages (APHIS 2004).

All of the contingency plans follow a stamping out policy that calls for destruction of animals on the affected premises with burial or incineration of the carcasses. All live animals, animal products, and genetic material which moved off the affected premises during the time between disease introduction and detection of the outbreak must be traced and destroyed. Protection and surveillance zones of 3 km and 10 km radius from the affected premises, respectively, are established and movement of live animals, animal products, and genetic material is suspended until the restrictions are lifted. Contingency plans are updated regularly at all levels of the SFVS.

11.2 Classical swine fever

The emergency response policies and regulations formulated by the central competent authority reflect control measures established in Council Directive 2001/89/EC and Commission Decision 2002/106/EC. The Lithuanian National Contingency Plan for CSF (Annex 6 of SFVS 2003b) was developed by the central SFVS and was approved by the EC under Commission Decision 2004/431/EC. The contingency plan reflects control measures outlined in the Order of the Director of the SFVS No. 283 of June 2002 "On approval of the requirements for control of CSF."

The CSF contingency plan details measures to be taken in case of suspicion or confirmation of CSF on a holding, in a slaughterhouse, at a livestock market, or in a means of transport, as well as control measures for contact holdings, epidemiological investigation practices, establishment of protection and surveillance zones, and control measures in these zones. The contingency plan also details cleaning and disinfection practices; repopulation practices; measures in case of suspicion or confirmation of CSF in feral pigs; eradication of CSF in feral pigs; diagnostic procedures and biosafety requirements; principles of emergency vaccination of domestic and feral pigs; and feeding of catering waste (prohibited).

EC and Lithuanian regulations allow removal of CSF restrictions in protection zones as early as 30 days after completion of preliminary cleaning and disinfection measures on

the infected holding (21 days in surveillance zones). Measures are lifted after clinical examinations and serology indicate that the pigs remaining in the zones are free of CSF.

11.2 Swine vesicular disease

The emergency response policies and regulations formulated by the central competent authority reflect control measures established in Council Directive 92/119/EEC and Commission Decision 2000/428/EC. The Lithuanian National Contingency Plan for SVD (Annex 5 of SFVS 2003b) was developed by the central SFVS; EC approval is not required for SVD contingency plans. The contingency plan reflects the control measures outlined in the Order of the Director of the SFVS No. 284 of June 2002 "On approval of regulations introducing measures for the control of certain animal diseases and specific measures relating to SVD."

The SVD contingency plan details measures to be taken in case of suspicion or confirmation of SVD on a holding, including epidemiological investigation practices; establishment of protection and surveillance zones and control measures in these zones; diagnostic procedures; cleaning and disinfection practices; and repopulation practices. The contingency plan does not directly address measures in case of suspicion or confirmation of SVD in feral pigs.

11.3 Foot and mouth disease

The emergency response policies and regulations formulated by the central competent authority reflect control measures established in Council Directive 2003/85/EC. The Lithuanian National Contingency Plan for FMD (Annex 7 of SFVS 2001b) was formulated according to the criteria established in Commission Decision 91/42/EEC and approved by the EC under Commission Decision 2004/435/EC.

The FMD contingency plan details measures to be taken in case of suspicion or confirmation of FMD in ruminants or swine on a holding, in a slaughterhouse, at a livestock market, or during transport. These include control measures for contact holdings, epidemiological investigation practices, sample collection and handling practices, establishment of protection and surveillance zones, and control measures in these zones. The contingency plan also details slaughter and carcass disposal methods; cleaning and disinfection practices; repopulation practices; principles of emergency vaccination; and public relations tactics. The contingency plan does not directly address measures in response to suspicion or confirmation of FMD in free-ranging wildlife.

11.4 Indemnity and compensation

Owners of animals killed on the authority of an official veterinarian are compensated at market value in accordance with various Orders of the Director of the SFVS (SFVS 2003a). A list of diseases to be compensated was approved in 2003 by Order of the Director of the SFVS No. B1-60 (SFVS 2003a). Funding comes from the State budget and the EC. The latter entity provides partial indemnity in case of an outbreak of certain diseases, including CSF and SVD, and in the past has passed critical legislation to financially support eradication of FMD outbreaks in Member States. Council Decision 90/424/EEC describes the conditions under which the EC would support a financial contribution for emergency control and eradication of CSF or SVD, most of which are covered in the respective Lithuanian contingency plans.

11.5 Discussion

The contingency plans for CSF, SVD, and FMD reflect outbreak control measures developed and promulgated by the EC. They are generally comprehensive, although the SVD and FMD contingency plans lack provisions for control of outbreaks in susceptible wild animals. Official veterinarians appeared to be familiar with the provisions of the contingency plans and the initial actions required of them in the event of suspicion and/or confirmation of an outbreak, although there is substantial reliance on the central level for guidance after this point. Training and national simulation exercises as discussed in Section 1 aid in developing and maintaining the ability to quickly detect and contain these diseases.

APHIS is concerned that 30 days following a CSF outbreak is insufficient to ensure that the area where an outbreak has occurred is no longer affected by the disease. CSF has recurred in several areas of the EU shortly after EC restrictions were removed from those areas and the movement of swine commenced. For example, in December 2001 a CSF outbreak was confirmed in Osama, Spain, 22 days after release of EC movement restrictions and 83 days after depopulation on the affected holding (APHIS 2004a). Similarly, a CSF outbreak in August 2002 in Luxembourg was epidemiologically linked to an outbreak that occurred in June 2002 (APHIS 2004a). The August outbreak occurred 27 days after release of EC movement restrictions and 56 days after depopulation.

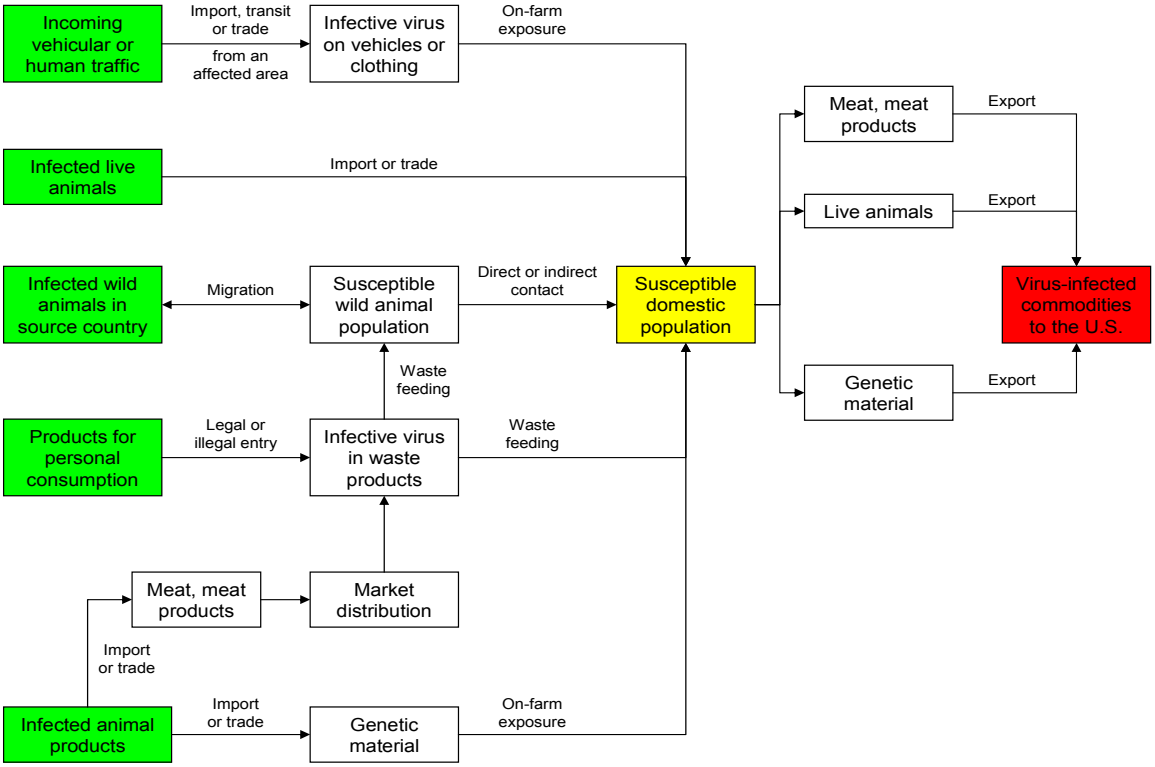
These observations suggest that 30 days may be an insufficient duration for restrictions. APHIS addressed this concern for the EU-15 in a previous regulation by establishing a process which would not allow swine, swine products, or semen from an area affected with CSF in domestic swine to be exported until 6 months after the last affected premises was cleaned and disinfected (APHIS 2006).

12. Discussion of identified risk factors

12.1 General discussion

The preceding 11-factor assessment identified five main pathways by which CSF, SVD, and/or FMD could be introduced into Lithuania from other EU Member States or third countries, resulting in exposure of a susceptible domestic animal population (see Figure 12.1). However, introduction of these diseases into Lithuania by the identified pathways would only affect export risk to the United States if a susceptible domestic animal population – either breeding animals as in a semen collection center or production animals raised for slaughter – became infected and this infection was not detected prior to export. The timeframe for detection of a disease incursion depends on a number of factors, including characteristics of the disease agent, surveillance practices, diagnostic capabilities, and the disease recognition capability of animal caretakers and veterinarians.

Figure 12.1: Pathway assessment for virus introduction and subsequent export



As discussed under the hazard identification section, some forms of CSF, SVD, and FMD are difficult to detect in live animals or on post-mortem examination without laboratory testing. For example, carrier sows that were exposed to low virulence CSF strains are capable of shedding virus for substantial periods of time without clinical signs. Subclinical SVD infection is common, although the period of virus shedding is generally short and persistent infection is rare. Both subclinical and persistent (carrier) infections are characteristic of FMD in ruminants, particularly sheep and goats. In addition, virus shedding may occur in animals incubating FMD prior to the appearance of clinical signs.

The ongoing training and national simulation exercises discussed in Section 1.3.2 theoretically aid in passive surveillance for CSF, SVD, and FMD by developing and maintaining the ability to quickly detect these diseases. However, the fact that no suspect cases have been reported from the field in recent years suggests that the level of awareness of these diseases is relatively low (*see* Section 9).

Active serological surveillance for CSF in domestic swine appears sufficient to detect the presence of the disease, although sampling may not represent the holdings at greatest risk for disease introduction (*see* Section 9). Serological surveillance for antibodies to CSF would likely miss an early infection, since antibodies occur relatively late (around 21 days). Passive surveillance could also overlook early infection with a moderate or low virulence strain, thereby delaying the time to detection.

CSF surveillance in wild boar may be hindered by the lack of positive incentive for sampling by hunters and the low level of surveillance among wild boar found dead (*see* Section 9.3). Detection may therefore be delayed, but serological surveillance would likely reveal the historical presence of CSF. Similarly, Lithuania conducts serological surveillance for SVD and FMD at a relatively low level and relies much more on passive surveillance to detect these diseases. Detection may therefore be delayed in the absence of overt clinical signs, particularly since no FMD surveillance is conducted in reservoir populations such as sheep and goats.

APHIS concludes from this discussion that the timeframe for detection of a CSF, SVD, or FMD incursion into Lithuania could be weeks or even months under certain circumstances. There would therefore be a period of time between virus introduction and outbreak detection during which infected animals and products could be presented for export to the United States. Physical inspection of individual animals is sufficient to detect clinically affected animals prior to live export, slaughter, or collection of genetic material. However, such inspection is unlikely to detect subclinical or persistent infection, which may be more apparent at the herd level.

As noted in the hazard identification section, each of the causative agents may remain viable through carcass maturation, transport, and storage, and may be present in genetic material as well. Consequently, if one or more of these diseases is introduced into a domestic animal population in Lithuania, the potential exists for it to remain undetected long enough for export of infected live animals, meat, meat products, and genetic material to the United States. Although APHIS considers the probability of this scenario occurring to be relatively low, it cannot be entirely disregarded. Consequently, the likelihood of disease introduction via the pathways identified in the previous sections resulting in exposure of a susceptible domestic animal population is examined below.

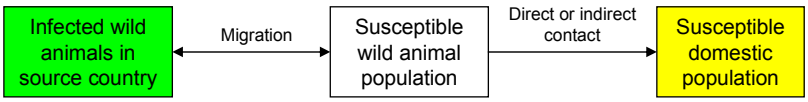
12.2 Natural movement of wild animals into Lithuania

12.2.1 Central risk issue

Infected wild animals migrating from neighboring affected regions, either third countries or other Member States, could introduce CSF, SVD, or FMD virus into Lithuania. As shown in Figure 12.2, direct or indirect contact with infected wild animals could spread the disease to a susceptible population of domestic animals, creating the potential for

export of infected animals or products to the United States. The likelihood of introduction of these diseases into Lithuania and the associated export risk are discussed below.

Figure 12.2: Pathway for disease introduction via migrating wild animals



12.2.2 Risk factors and existing mitigation measures

The likelihood of introducing CSF, SVD, or FMD into Lithuania via entry of infected wild animals from surrounding regions depends primarily on the disease status of wild animals in the neighboring regions and the extent to which natural barriers prevent movement of wild animals into Lithuania. Risk factors for disease introduction and associated mitigating factors identified in Sections 1-11 are summarized below.

Risk factors for disease introduction:

1. CSF, SVD, FMD – Lithuania shares common land borders with several countries that APHIS has not evaluated and regards as unknown risk for CSF, SVD, and/or FMD (*see* Sections 3.1 – 3.3). APHIS therefore cannot rule out the existence of these diseases in wild animal populations in these regions.
2. CSF – CSF in wild boar populations in the extended European region constitutes a reservoir for exposure of domestic swine (*see* Section 3.1).
3. CSF, SVD, FMD – Natural barriers do not protect against movement of wild animals into Lithuania from most of the neighboring regions (*see* Section 6).

Factors mitigating the risk of disease introduction:

1. FMD – FMD has not been reported in domestic or wild species in a region bordering Lithuania in the past 10 years (*see* Section 3.3).
2. SVD – SVD has never been reported in any neighboring country except Poland, which has not reported a case in over 30 years (*see* Section 3.2).

12.2.3 Summary discussion

APHIS considers the risk of introducing FMD or SVD virus into Lithuania via susceptible wild animals to be very low. However, the risk of CSF introduction into Lithuania via migration of wild boar from potentially affected neighboring regions is greater and is an issue of concern for exposure of domestic animals.

Current surveillance practices in Lithuania may not rapidly detect low-level incursions of CSF in wild boar (*see* Sections 9.3 and 9.6.2), allowing more time for infection to spread to domestic swine before detection. Exposure to infected wild boar is most likely on small swine farms with limited biosecurity. In contrast, strict production and biosecurity practices on swine confinement operations such as breeding farms, semen collection centers, and large production units limit the likelihood of direct or indirect exposure to wild boar (*see* Section 8.1). Production and slaughter systems in Lithuania are such that large confinement operations are the most likely source of swine commodities for export,

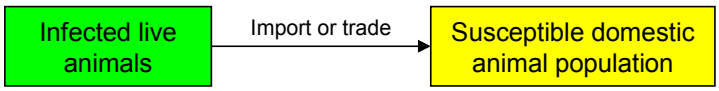
and commingling with swine from small holdings is unlikely. As a result, commercial production and biosecurity practices substantially mitigate the export risk to the United States.

12.3 Import, transit, or trade of infected live animals

12.3.1 Central risk issue

Infected live ruminants and swine may enter Lithuania legally through import from third countries or intra-Community trade, or illegally via smuggling from neighboring countries (see Figure 12.3). Legally imported live animals may be intended for breeding, production (i.e. fattening and slaughter), or direct slaughter. APHIS considers the likelihood of illegal entry of infected live animals into Lithuania to be low.

Figure 12.3: Pathway for disease introduction via live animals



12.3.2 Risk factors and existing mitigation measures

The likelihood of disease introduction via legal import or trade of live animals depends primarily on the provisions of the harmonized EC import legislation for ruminants and swine, the efficacy of limiting intra-Community trade from affected regions, and Lithuanian import and trade practices. Risk factors for disease introduction and associated mitigating factors identified in Section 1-11 are summarized below.

Risk factors for disease introduction:

1. FMD – Harmonized EC legislation allows Lithuania to import live ruminants from countries and territories that APHIS has not evaluated and regards as unknown risk for FMD (*see* Section 7.2.1).
2. CSF – Harmonized EC legislation allows Lithuania to import live swine from Switzerland, which APHIS regards as unknown CSF risk (*see* Section 7.2.1).
3. CSF, SVD, FMD – Veterinary inspection of imported animals at the ports of entry is unlikely to detect incubating or subclinical infection, or infection in species that show few clinical signs (e.g. FMD in small ruminants) (*see* Sections 7.2.3 and 7.7.1).
4. CSF – Outbreaks occurring outside of established control zones within affected Member States where CSF is endemic in wild boar pose a risk to the common and export markets until detected (*see* Section 3.1).
5. CSF – Outbreaks have recurred in several areas of the EU shortly after EC restrictions were lifted, suggesting that 30 days may be an insufficient duration for restrictions (*see* Sections 11.2 and 11.5).

Factors mitigating the risk of disease introduction:

1. SVD – APHIS considers the countries from which EC legislation permits Lithuania to import live swine to be free from SVD (*see* Section 7.2.1).

2. CSF, SVD, FMD – EC certification requirements for import, transit, or trade in live animals are comprehensive and must be signed by an official veterinarian of the country of origin (*see* Section 7.2.2).
3. CSF, SVD, FMD – Veterinary inspection practices at the point of entry are likely to detect clinically diseased animals (*see* Section 7.2.3).
4. CSF, SVD – EC legislation and the control measures put in place by affected Member States prohibit the sale of live swine from zones under restrictions for CSF or SVD (*see* Section 7.4).
5. CSF, SVD, FMD – EC requirements for isolation, observation, and veterinary inspection of live animals prior to transport increase the likelihood of detecting infected animals (*see* Sections 7.2.2 and 7.4).
6. CSF, SVD, FMD – Lithuania has imported very few live animals from countries that APHIS regards as unknown risk for CSF, SVD, or FMD (*see* Section 7.5).

12.3.3 Summary discussion

EC legislation imposes less stringent restrictions on the sourcing of imported ruminants than does U.S. legislation, which could result in a comparatively greater risk of FMD introduction into Lithuania and other Member States with which Lithuania trades. The same is true to a lesser extent for CSF in imported swine, and the potential exists for trade on the internal common market to introduce CSF or SVD from undetected infected herds in unrestricted areas or from herds in areas released from restrictions too quickly following an outbreak.

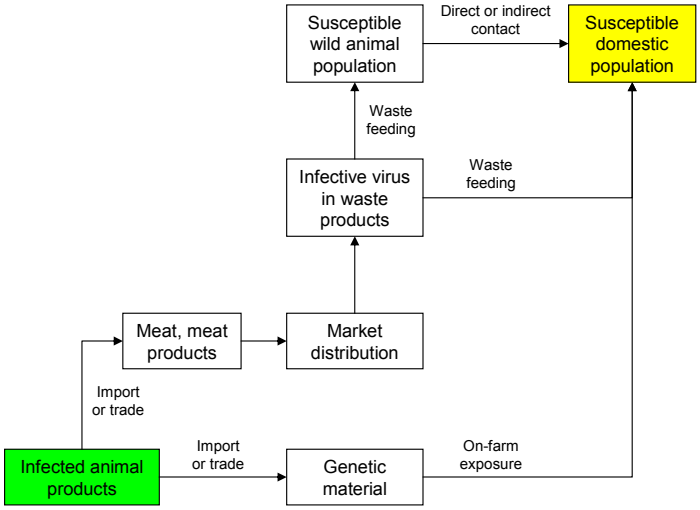
However, the mitigation measures currently in place substantially reduce the risk of CSF, SVD, or FMD introduction into Lithuania via import or trade of live animals. Isolation, observation, and veterinary inspection of animals at the point of destination further limit exposure of susceptible domestic animal populations. However, additional mitigation measures may be necessary to restrict sourcing of animals for the export process and to prevent commingling of live animals with those from regions APHIS regards as affected with FMD or CSF.

12.4 Import, transit, or trade of infected animal products

12.4.1 Central risk issue

Infected bovine or swine products such as fresh meat, meat products, semen, embryos, or ova can enter Lithuania legally through import or trade, or illegally via smuggling. Figure 12.4 shows the main pathways for introduction of CSF, SVD, or FMD virus via infected animal products.

Figure 12.4: Pathways for disease introduction via infected animal products



12.4.2 Risk factors and existing mitigation measures

The likelihood of introducing CSF, SVD, or FMD virus via infected animal products depends primarily on the provisions of the harmonized EC import legislation for ruminants and swine, the efficacy of limiting intra-Community trade from affected regions, and Lithuanian import and trade practices.

Risk factors for disease introduction:

1. CSF, SVD, FMD – Harmonized EC legislation allows Lithuania to import fresh pork and pork products, as well as fresh meat from wild boar, from third countries that APHIS has not evaluated and considers of unknown risk for CSF, SVD, and/or FMD (*see* Section 7.2.1).
2. FMD – Harmonized EC legislation permits Lithuania to import fresh meat and meat products from domestic and wild ruminants from third countries that APHIS considers of unknown risk for FMD, including Belarus and Russia (*see* Section 7.2.1).
3. FMD – Harmonized EC legislation allows Lithuania to import bovine semen, ova, and embryos from regions that APHIS regards as unknown risk for FMD (*see* Section 7.2.1).
4. CSF – Harmonized EC legislation allows Lithuania to import swine semen from Switzerland, which APHIS regards as unknown risk for CSF (*see* Section 7.2.1).
5. CSF, SVD, FMD – Veterinary inspection of imported animal products at the port of entry is unlikely to detect infective virus in animal commodities (*see* Sections 7.2.3 and 7.7.2).
6. CSF – Outbreaks occurring outside of established control zones within affected Member States where CSF is endemic in wild boar pose a risk to the common and export markets until detection (*see* Section 3.1).

7. CSF – Outbreaks have recurred in several areas of the EU shortly after EC restrictions were lifted, suggesting that 30 days may be an insufficient duration for restrictions (*see* Sections 11.2 and 11.5).

Factors mitigating the risk of disease introduction:

1. CSF, SVD, FMD – EC certification requirements for imported commodities derived from swine and ruminants in third countries are comprehensive and must be signed by an official veterinarian of the country of origin (*see* Section 7.2.2).
2. CSF, SVD, FMD – The EC approval process for exporting establishments, including semen collection centers and slaughterhouses, is rigorous and comprehensive, and substantially limits exports from approved third countries (*see* Section 7.2.1).
3. CSF, SVD – Control measures put in place by affected Member States effectively prohibit the sale of swine commodities from regions recognized by Member States as affected by CSF or SVD (*see* Section 7.4).
4. SVD, FMD – Lithuania has historically imported fresh pork and pork products from western European countries that are considered by APHIS to be free of FMD and SVD (*see* Section 7.5).

12.4.3 Summary discussion

APHIS considers disease introduction via meat and meat products, rather than genetic material, to be a primary risk concern. Although infected genetic material would most likely result in direct exposure of susceptible domestic animals, the strict biosecurity practices required of semen collection centers substantially reduce the risk of disease introduction from this quarter. Infected meat and meat products pose little exposure risk to wild or domestic ruminants, but could be fed as waste to wild boar or domestic swine.

Harmonized EC legislation imposes less stringent restrictions on sourcing of ruminant and swine commodities than does U.S. legislation, resulting in comparatively greater risk of introducing CSF, SVD, or FMD into Lithuania. However, the approval process for exporting establishments in third countries provides substantial risk mitigation and limits the number of countries actually exporting to the EU. As is the case for live animals, the potential exists for trade on the internal common market to introduce CSF via commodities from undetected infected herds in unrestricted areas. In addition, APHIS is concerned that 30 days following a CSF outbreak is insufficient to ensure that the area where the outbreak occurred is no longer affected by the disease.

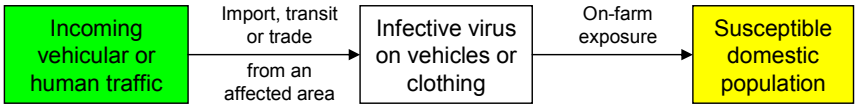
Noncompliance with the waste feeding ban is most likely on small swine holdings (*see* Section 1.1), as is exposure to infected wild boar. Biosecurity practices limit the risk of exposure on large confinement operations (*see* Section 8.1), which are the most likely source of swine commodities for export (*see* Section 8.1.2). However, additional mitigation measures may be necessary to prevent commingling of meat and meat products destined for export with that sourced from an affected country or region.

12.5 Incoming vehicular or human traffic

12.5.1 Central risk issue

CSF, FMD, or SVD could be introduced into Lithuania via incoming vehicular traffic, particularly improperly disinfected live-haul trucks coming from affected Member States or third countries. Virus could also be passively introduced by human traffic from affected regions through transmission of live virus on clothing, potentially resulting in on-farm exposure of a susceptible domestic animal population (see Figure 12.5).

Figure 12.5: Introduction pathways via vehicular or human traffic



12.5.2 Risk factors and existing risk mitigation measures

The likelihood of introducing CSF, SVD, or FMD into Lithuania via incoming vehicular or human traffic depends primarily on the disease status of neighboring regions and disinfection practices at the point of entry. Risk factors for disease introduction and associated mitigating factors identified in Sections 1-11 are summarized below.

Risk factors for disease introduction:

1. CSF, SVD, FMD – Lithuania shares common land borders with several countries that APHIS has not evaluated and regards as unknown risk for CSF, SVD, and/or FMD (*see* Sections 3.1 – 3.3).
2. CSF, SVD, FMD – Considerable local traffic occurs to and from neighboring countries and Member States (*see* Section 7.6).
3. CSF, SVD, FMD – No standard disinfection practices are in place for vehicular or human traffic from neighboring regions in the absence of a reported outbreak (*see* Section 7.1.2).

Factors mitigating the risk of disease introduction:

1. CSF, SVD, FMD – None of the regions bordering Lithuania has reported a CSF, SVD, or FMD outbreak in many years, if ever (*see* Sections 3.1 – 3.3).
2. CSF, SVD, FMD – The veterinary services are prepared to implement extensive biosecurity measures to prevent disease introduction via vehicular or human traffic if an outbreak is reported in a neighboring region (*see* Sections 7.6 and 7.7.3).

12.5.3 Summary discussion

APHIS considers the risk of introducing CSF, FMD, or SVD virus via incoming vehicular or human traffic to be low. The level of biosecurity on most ruminant and small swine holdings is likely insufficient to protect against virus exposure from this quarter. However, ruminant populations with the greatest potential for exposure to humans or vehicles are generally also those that are intensively managed, which increases the odds

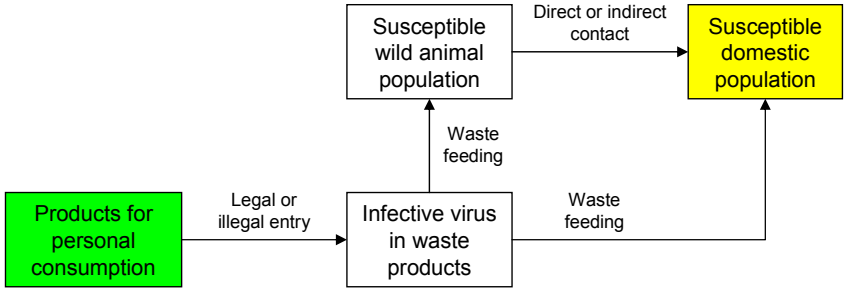
of rapid disease detection. As stated above, small swine operations in Lithuania are unlikely to contribute products for export. In this regard, existing husbandry and production conditions in Lithuania substantially mitigate the export risk to the United States.

12.6 Agricultural commodities for personal consumption

12.6.1 Central risk issue

Infected meat or meat products carried into Lithuania by human traffic for personal consumption could introduce CSF, SVD, or FMD into the country, as shown in Figure 12.6. Such products may be intentionally smuggled into the country or simply missed during Customs inspections at border crossings.

Figure 12.6: Introduction pathways via personal consignments



12.6.2 Risk factors and existing mitigation measures

The likelihood of CSF, SVD, or FMD introduction via agricultural products for personal consumption depends primarily on EC policies regarding allowable commodities for personal consumption; the extent of passenger traffic from affected regions; and Customs Service inspection, confiscation, and disposal practices at the point of entry.

Risk factors for disease introduction:

1. CSF, SVD, FMD – EC legislation permits personal consignments of meat, fluid milk, and meat and milk products from several countries that APHIS has not evaluated and regards as unknown risk for CSF, SVD, and/or FMD (*see* Section 7.6).
2. CSF, SVD, FMD – Considerable local traffic occurs from neighboring third countries that is subject to Customs inspection (*see* Section 7.6).
3. CSF, SVD, FMD – The Lithuanian Customs Service inspects a fairly low percentage of the total passenger traffic in the absence of a reported disease outbreak in the originating country (*see* Section 7.6).

Factors mitigating the risk of disease introduction:

1. CSF, SVD, FMD – None of the countries from which the EC allows personal consignments has reported outbreaks of CSF, SVD, or FMD in recent years, if ever (*see* Section 3.1 – 3.3).

2. CSF, SVD, FMD – None of the countries bordering Lithuania has reported outbreaks of CSF, SVD, or FMD in recent years, if ever (*see* Section 3.1 – 3.3).
3. CSF, SVD, FMD – Signs indicating prohibited items and prominently placed amnesty bins decrease the amount of illegal products unintentionally carried across the border (*see* Section 7.6).

12.6.3 Summary discussion

Although EC legislation permits personal consignments of products that could carry CSF, SVD, or FMD virus from potentially affected countries, APHIS considers the risk from this quarter to be low. More importantly, the intensity of Customs Service inspection depends in large part on disease reporting of other countries, and the standard level of inspection is not sufficient to allow detection and confiscation of all illegal commodities that could carry live virus.

APHIS regards the risk of introducing CSF or FMD into Lithuania as far greater than SVD, considering the limited distribution of the latter disease. In this regard, a risk assessment recently estimated the risk of disease introduction into Great Britain via illegally imported meat to be once in 10 years for CSF, once per 100 years for FMD, and once per billion years for SVD (DEFRA 2004).

Infective virus in agricultural commodities for personal consumption could result in direct exposure of susceptible wild boar or domestic swine populations via waste feeding. For reasons discussed above, noncompliance with the waste-feeding ban and exposure of domestic swine to infected wild boar are most likely to occur on small swine holdings, which are unlikely to contribute products for export to the United States. APHIS therefore considers the risk of CSF or FMD introduction into Lithuania illegal imports to be relatively high; however, existing production and biosecurity measures substantially reduce the export risk to the United States.

13. Release assessment conclusions

Based on the preceding assessment of the 11 factors specified in 9 CFR 92.2, APHIS has no evidence that CSF, SVD, or FMD currently exists in Lithuania. CSF has not been detected since 1992, FMD has not been detected since 1972, and SVD has never been reported. Although Lithuania's current surveillance practices for these diseases are unlikely to detect very low levels of infection, particularly in wild species, the surveillance and diagnostic measures are likely adequate to detect active outbreaks. In case of a recognized disease incursion, the Lithuanian veterinary services are well trained and equipped to contain and eliminate the outbreak.

However, APHIS considers that the potential for introduction of CSF, SVD, and FMD into Lithuania is greater in some regards than the current potential for introduction of these diseases into the United States. Specifically, Lithuania shares common land borders with several regions that APHIS does not consider free of these diseases, engages in free trade with other Member States that import live animals or animal commodities from such regions and, under harmonized EC legislation, could directly import live animal or animal commodities from such regions.

As a result, the risk profile of Lithuania resembles that of the EU-15. APHIS' regulations recognize an equivalent level of risk across the EU-15 due to harmonized EC legislation and trading on the internal common market. The EU-15 is considered a low-risk region for the purposes of export to the United States and is subject to the import conditions specified in 9 CFR 94.11 for meat or meat products from ruminants or swine; 9 CFR 94.13 and 94.24 for pork and pork products; 9 CFR 94.24 for breeding swine; and 9 CFR 98.38 for swine semen.

APHIS has recognized in previous assessments that a reservoir of CSF infections exists in wild boar in the EU-15 (APHIS 2000; APHIS 2004a). This reservoir is likely to produce continuing CSF outbreaks in domestic swine in the EU. However, in its prior assessments of the situation in the EU-15, APHIS concluded that EC control measures were sufficient to detect and contain any outbreaks that might occur. This assessment verified that the same EC control measures apply in Poland as in the EU-15.

Based on this evaluation, APHIS considers the export risk from Lithuania to be equivalent to that of the EU-15. Applying provisions of 9 CFR 94.11, 94.13, 94.24, and 98.38 to Lithuania would address the risk issues discussed in Section 12 and result in a level of risk that is equivalent to that portion of the EU authorized to export breeding swine, swine semen, and fresh pork to the United States.

The text of 9 CFR 94.11, 94.13, 94.24, and 98.38 is provided in Annex 1. In summary, these CFR sections mitigate the risks associated with less restrictive trade practices by (1) restricting the sourcing of swine and ruminants for live export or slaughter to regions free of the pertinent diseases; (2) prohibiting commingling of live animals, meat, or meat products for export with such commodities from regions not considered free of these diseases; (3) restricting the use of transportation equipment for live swine; and (4) requiring exporting slaughter establishments to be approved by the U.S. Food Safety and Inspection Service (FSIS). An official veterinarian of the exporting country must certify that these conditions have been met.

The CFR provisions do not directly address the risk of exporting infected live animals or animal commodities during the period between virus incursion and outbreak detection. However, 9 CFR 94.24 and 98.38 substantially mitigate this risk by prohibiting sourcing of swine from a restricted zone established because of detection of CSF in wild boar or a CSF outbreak in domestic swine, as well as for the 6 months following depopulation, cleaning, and disinfection of the last infected premises in the zone. In addition, swine semen centers must be approved by the national government of the exporting country, which provides substantial risk mitigation under EC legislation.

Biosecurity measures and production practices on swine confinement operations most likely to export to the United States limit exposure risk as discussed in Section 12. Other potential mitigation measures include a mandatory period of observation and/or diagnostic testing prior to live export or slaughtering for export. However, since the results of this assessment indicated that Lithuania is currently free of CSF, SVD, and FMD, these measures are not necessary.

Exposure assessment

An exposure assessment as defined by OIE describes the biological pathway(s) necessary for exposure of animals and humans in an importing country to the hazards released from a given risk source, and estimates the probability of the exposure(s) occurring (OIE 2005b). APHIS' regulatory authority is limited to animal health, however, so potential risks to animals are the primary focus of this evaluation.

APHIS considers that the most likely pathway of exposure of domestic livestock to CSF, SVD, and FMD viruses in meat (pork or beef) and meat products is through feeding of contaminated food waste to swine (APHIS 2001). Other exposure pathways are more direct and include contact with imported infected live animals or contact with infected genetic material.

1. Waste feeding to susceptible swine

1.3 Waste-feeding practices in the United States

The likelihood of exposure of susceptible species to virus-infected meat was evaluated in previous APHIS studies. In 1995, APHIS conducted a pathway analysis to estimate the likelihood of exposing swine to infected waste (APHIS 1995). The analysis included two pathways for exposure of swine to contaminated waste; namely, exposure associated with illegal household imports, and exposure associated with legal imports. The latter is the exposure pathway that would be applicable to importing meat or meat products from Lithuania. With 95% confidence, APHIS estimated that 0.023% or less of plate and manufacturing waste would be inadequately processed prior to feeding to swine (APHIS 1995). Based on this fraction, less than 1 part in 4,300 (reciprocal of 0.023%) of imported meat is likely to be fed to swine as inadequately cooked waste.

APHIS conducted a survey in 2001 of the U.S. swine waste-feeding sector to update a similar study done in 1994 (APHIS 2002). Based on this survey, VS estimated that the proportion of plate and manufacturing waste fed to swine diminished by about 50% between 1994 and 2001 due to a significant decrease in the number of waste-feeding premises. The study also found that:

1. Several more states prohibited feeding food wastes to swine;
2. The number of waste-feeding premises in the continental United States decreased by 40.5% from 1994-2001, and in Hawaii and Puerto Rico decreased by 37.5% and 52.3%, respectively; and
3. Institutions and restaurants provide nearly 90% of all plate waste fed to swine.

APHIS considers that prohibiting the feeding of unprocessed plate waste to swine has further contributed to the reduction of waste-feeding to swine. Waste-feeder operations must be licensed and inspected regularly by USDA inspectors (9 CFR 166). The licensing process requires that producers adequately cook the waste fed to swine using methods designed to destroy foreign animal disease agents.

Based on the 1995 estimate that a very small proportion of food waste is inadequately processed prior to feeding to swine, and the substantial reduction in waste-feeding operations in recent years, APHIS concludes that the likelihood of exposure of susceptible swine to CSF, SVD, or FMD viruses through inadequately processed food

waste is low. Based on the results of the release assessment, APHIS further considers the probability of exposure of susceptible swine to these viruses through inadequately cooked infected meat from Lithuania to be low.

2. Imported live animals

The likelihood of exposure of susceptible species to infected live animals was evaluated by briefly reviewing virus persistence and shedding in live swine and ruminants, as well as standard import requirements for these species. The exposure assessment focuses on breeding animals because transportation costs are prohibitive for export of other live animals (e.g. feeder pigs or cattle) to the United States from EU Member States. APHIS considers exposure of a susceptible U.S. animal population to illegally imported infected live animals from Lithuania to be highly unlikely.

The survival period of CSF virus within live swine ranges from 1 week to greater than 6 months depending on various host-pathogen factors. Similarly, up to 50% of ruminant animals may become carriers of FMD virus (Alexandersen 2003). The maximum reported duration of the carrier state is 3.5 years in cattle, 9 months in sheep, and 4 months in goats. Carrier virus is fully infectious and consequently the carrier state is associated with at least a theoretical risk of introducing FMD into a susceptible population. Although SVD virus is not known to cause persistent infection, a large percentage of infections are subclinical and therefore may remain undetected without diagnostic testing prior to export.

Consequently, APHIS considers this potential pathway for disease introduction to have high unmitigated risk. Current U.S. regulations require certification that ruminants and swine have been kept in a region entirely free of FMD for 60 days prior to export (9 CFR 93.405 and 93.505) and also require a minimum quarantine of 30 days for most imported ruminants (9 CFR 93.411) and 15 days for all imported swine (9 CFR 93.510). These requirements serve to partially mitigate the risk of exposure by increasing the probability of FMD detection in ruminants and detection of CSF and SVD in swine.

Based on the results of the release assessment, APHIS considers the probability of exposure of susceptible animals to CSF virus via live animals from Lithuania to be low, and the probability of exposure to SVD and FMD viruses via this pathway to be very low. With the mitigation measures for live swine described in 9 CFR 94.24, which further limit the sourcing of swine for export (see footnote on page 29), the probability of exposure of susceptible U.S. swine to CSF virus via infected swine from Lithuania is very low.

3. Imported genetic material

Genetic materials have been implicated in the introduction of foreign animal disease into susceptible populations, as well as the spread of established disease epidemics over considerable distances. For example, two semen collection centers became infected during the course of the 1997-1998 CSF epidemic in the Netherlands (Hennecken et al 2000). Potentially contaminated semen was distributed to 1,680 swine herds over the course of 5 weeks, during which the disease remained undetected in the donor boars. Although investigators concluded that only 36 farms had been infected through artificial

insemination, all suspect farms were subject to quarantine and testing, resulting in a tremendous expenditure of resources.

Survival of CSF virus in semen has been estimated in experimental studies to be 12-72 hours are 20^{o}C but ranges from 1 month to several years at 4^{o}C or below (Floegel et al 2000). Survival in embryos and ova is unknown (Floegel et al 2000; Glossup and Cameron 2002). Survival of SVD virus in genetic material is possible but is not considered to be a primary mode of transmission (OIE 2005a). FMD virus may be present in semen up to 4 days before clinical signs become apparent (OIE 2005a).

Based on the extended period of survival of CSF and FMD viruses in frozen semen, APHIS considers the unmitigated likelihood of exposure of susceptible animals to these viruses in infected semen to be high. However, based on the results of the release assessment, APHIS considers the probability of exposure of susceptible animals to CSF or FMD viruses via infected semen from Lithuania to be low. With the mitigation measures for swine semen described in 9 CFR 98.38, which require additional observation of the donor boar after semen collection (see footnote on page 29), the probability of exposure of susceptible swine to CSF or SVD virus via infected semen from Lithuania is very low.

Consequence assessment

A consequence assessment describes the biologic and economic consequences of introducing the hazards under consideration into the United States. This consequence assessment addresses both direct and indirect consequences as recommended by the OIE (OIE 2005b).

The magnitude of the biologic and economic consequences following an introduction of CSF, SVD, or FMD virus would depend on the location of the introduction; the virus serotype introduced; the rate of virus spread and whether other environmental conditions at the introduction site that might facilitate this spread; ability to detect the disease rapidly; livestock demographics and movement patterns; and the ease of employing eradication procedures (McCauley 1979). In addition, depending on the extent of export of livestock and their products, trade restrictions imposed by trading partners may result in severe economic consequences.

Direct consequences include effects of the disease on animal health and the subsequent production losses, the total costs of control and eradication, the effect on the environment, and public health consequences. Indirect consequences include impacts on international trade and associated domestic consequences.

1. Effects on animal health and production

1.1 Classical swine fever

Acute and chronic courses of CSF have been described. The severity of the disease depends largely on the age of the animal and virulence of the viral strain, with young animals usually more severely affected than older animals. In older breeding pigs the course of infection is often mild or even subclinical, whereas mortality rates may reach 90% in young pigs (Moennig 2000). Low virulence strains may manifest primarily as poor reproductive performance and birth of piglets with neurologic defects.

1.2 Swine vesicular disease

SVD is typically a transient vesicular disease of pigs. The virus causes essentially no mortality, and infected pigs generally recover within one week (up to three weeks). Some strains produce only mild clinical symptoms or are asymptomatic (OIE 2005a). Morbidity rates may be low throughout a whole herd but high in certain pens.

1.3 Foot and mouth disease

FMD causes significant distress and suffering to animals regardless of the size and sophistication of their livestock unit. Very high mortality rates in young animals can occur, particularly among pigs and sheep (Alexandersen 2003; Dunn and Donaldson 1997; Geering 1995). Mortality in older animals occurs less frequently but may be significant with certain virus strains.

FMD also causes significant losses in the production capacity of affected animals. Productivity losses of 10-20% are reported in FMD-infected livestock if the disease is allowed to run its course (McCauley 1979). In addition, FMD can cause a reduction in the growth rate of animals raised for meat (Doel 2003). The comparatively greater severity of FMD in pigs would imply at least similar losses to those described for cattle.

2. Control and eradication costs

The overall cost of control and eradication depends on the mitigation or policy option chosen to control and eradicate the disease. Potential costs include disease control measures such as imposing quarantine measures and movement controls, direct costs related to stamping out of affected and other herds, indemnity payments, vaccination costs, surveillance and laboratory testing, etc. For disease-free countries like the United States that have a substantial export market for livestock and livestock products, the preferred option for control and eradication has traditionally been to stamp-out infected herds without the use of vaccine.

The U.S. policy for most significant foreign animal disease emergencies is to follow strict quarantine measures and stamping-out of infected and contact herds with ongoing assessment for the need for and implementation of strategic vaccination. Available data do not allow quantification of the number of herds/farms that would be infected if one of these diseases were introduced. Nevertheless, the cost of control, eradication and compensation is likely to be significant.

1.1 Classical swine fever

Since there have been no CSF outbreaks in the United States from which economic estimates can be derived, estimates of economic effects in other countries are provided as illustrations. Saatkamp et al (2000) reviewed the economic aspects of control of small and large CSF outbreaks in the EU from 1990-1997. For the largest outbreak, involving 429 herds over 14 months, the cost of removal of affected swine was 426.9 million Euros, slaughter for welfare purposes cost 1.2 billion Euros, and program operational costs were 134.3 million Euros. Overall, the outbreak cost pig producers 712.4 million Euros, the national government 230.5 million Euros, and the EU 807.8 million Euros. Approximately 10 million pigs were destroyed during the course of the outbreak, primarily for welfare reasons (overcrowding or overweight) (Stegeman et al 2000). The total cost of smaller outbreaks ranged from 10.9 million Euros (8 affected herds over 2 months) to 208.7 million Euros (113 affected herds over 10 months) (Saatkamp et al 2000).

Garner et al (2001) estimated the potential economic impact of CSF on the pig industry of Australia using a stochastic modeling process. The model estimated a loss in gross income of 28-37% for the pig industry in the affected region, and a 9-11% loss in gross income for the national pig industry.

1.2 Swine vesicular disease

Little information exists on the cost of control and eradication of SVD in a previously free region. SVD virus generally does not spread as quickly as CSF virus; even on infected premises, spread from one pen to another may not occur in the absence of a common open drainage system or of frequent movement of pigs between pens (Lin and Kitching 2000). However, a SVD outbreak may not be detected for weeks or even months due to the frequently mild nature of the disease, allowing ample time for spread to other swine establishments. In addition, the virus is extraordinarily stable in the environment, which could lead to disease recurrence on previously infected farms.

In the absence of specific data on the cost of control and eradication, APHIS assumes a baseline cost similar to that of a small- to medium-sized CSF outbreaks (see above).

1.3 Foot and mouth disease

A few studies have estimated the potential consequences of an FMD outbreak in the United States. Bates et al (2003) used results from a FMD simulation model to estimate the direct costs associated with indemnity, slaughter, cleaning and disinfecting livestock premises for various vaccination and eradication strategies to control transmission of FMDV in a cattle population of 2,238 herds and 5 sale yards located in 3 counties of California. The study found that mean herd indemnity payments were USD 2.6 million and USD 110,359 for dairy and non-dairy herds, respectively. Cleaning and disinfection costs ranged from USD 18,062 – 60,205 per herd. The mean vaccination cost was USD 2,960 per herd and the total eradication cost ranged from USD 61 million – 551 million depending on eradication strategy.

At the national level, McCauley et al (1979) conducted a comprehensive study to assess the potential economic impact of FMD in the whole of the United States. The study estimated the direct costs (control and eradication program costs) and increased costs borne by consumers of FMD introduction over a 15-year period (1976-1990). Using the Consumer Price Index to update to 2001, the estimated total cost of a strict quarantine and slaughter policy was USD 34.4 million.

3. Effect on the environment

Environmental effects have been considered under all applicable environmental review laws in force in the United States. These are considered in a separate, but related, environmental assessment conducted for certain regions of the EU (APHIS 2003). The environmental assessment complies with the National Environmental Policy Act (NEPA) and implementing regulations (NEPA 1969).

4. Effect on public health

Although public health consequences are not issues under APHIS' regulatory authority, the issue is briefly addressed in this assessment. Direct public health consequences are insubstantial because the occurrence of CSF, SVD, or FMD virus in humans is quite rare. In fact, the number of cases reported is so small when compared with the number of persons exposed to these viruses that the World Health Organization generally does not consider CSF, SVD, and FMD to be a threat to humans.

Perhaps more importantly, a substantial foreign animal disease outbreak can result in severe psychosocial effects on farmers and farming communities. Farmers and their families can suffer from grief over losing animals, in some cases blood lines kept over many generations, as well as loss of control over their lives due to movement restrictions, disruptions in community life, and short- and long-term stress over their financial future. For example, a study of the social consequences of the 2001 FMD outbreak in the Cumbria community of the United Kingdom revealed high rates of depression, alcohol consumption, and mortality among farmers during the crisis (Anonymous 2004).

5. Indirect consequences

In addition to the direct costs of CSF, SVD, or FMD introduction, impacts on international trade and related domestic consequences need to be considered. Export losses due to restrictions imposed by trade partners on animals and products susceptible to these diseases could run into billions of U.S. dollars. The value of U.S. exports of pork and pork products, which would be immediately lost if an outbreak of one of these diseases occurred, was an estimated USD 1.3 billion in 2003 (FAS 2003). Similarly, the value of U.S. exports of beef products alone, which would also be lost in an FMD outbreak, was over USD 3 billion in 2001. Since the United States exports only small amounts of lamb and mutton, economic losses associated with these commodities are not likely to be significant compared to cattle and swine.

The impact of an outbreak of a foreign animal disease on the rural and regional economic viability, including businesses reliant on livestock revenue, could also be substantial. For example, Paarlberg et al. (2002) conducted a study to estimate the potential revenue impact of an FMD outbreak in the United States similar to the one that occurred in the United Kingdom in 2001. This study estimated the gross revenue losses for the animal sector as follows: live cattle (17%), beef (20%), milk (16%), live swine (34%), pork (24%), live sheep and lambs (14%), and sheep and lamb meat (10%).

Indirect economic losses to U.S. firms that support export markets for live animals and animal products could also be substantial. For example, such firms would stand to lose at least USD 2.5 billion annually if ruminant export markets were lost (Green and Grannis 2003). More than 33 thousand full-time U.S. jobs, accounting for almost $1 billion in wages annually, could be jeopardized by loss of these three markets. In the longer term, if trade restrictions persisted and alternative export markets did not develop, the U.S. ruminant production sector could contract, allowing other supplying countries to establish trade relationships in the absence of U.S. supply. Losses due to restrictions on live swine, pork, and pork products are likely to be significant as well.

Risk Estimation

Risk estimation consists of integrating the results from the release assessment, exposure assessment, and consequence assessment to produce overall measures of risk associated with the hazards identified at the outset. Thus, risk estimation takes into account the whole risk pathway from hazard identified to the unwanted event.

APHIS concludes from the release assessment that there is no evidence that CSF, SVD, or FMD viruses currently exist in Lithuania. APHIS considers the risk potential for introduction of these hazards from Lithuania into the United States via export of swine and ruminant commodities to be low. In keeping with previous analyses, APHIS also concludes that there is an equivalent low level of risk across all of the EU Member States that are unaffected by these hazards. If mitigation measures for Lithuania are implemented that are equivalent to those specified for other EU Member States in 9 CFR 94.11, 94.13, 94.24, and 98.38, the risk would be reduced even further.

APHIS concludes from the exposure assessment that the probability of exposure of susceptible U.S. livestock to CSF, SVD, or FMD viruses via meat or meat products, live animals, or genetic material from Lithuania is low. Applying risk mitigation measures similar to those described in 9 CFR 94.24 for live swine, pork, and pork products, and 9 CFR 98.38 for swine semen, would reduce that low risk even further.

Conversely, APHIS concludes that the animal health and economic consequences of a CSF, SVD, or FMD outbreak in the United States would be severe. Although control and eradication measures would be costly, the major economic impact would likely result from export trade losses.

In summary, although a CSF, SVD, or FMD outbreak in the United States would be likely to have severe animal health and economic consequences, APHIS considers the risk of infected live swine and ruminants, or commodities derived from these species, entering the United States from Lithuania and exposing U.S. livestock to be low. This risk is further mitigated if Lithuania is subject to the same mitigations measures as are specified for other EU Member States in 9 CFR 94.11, 94.13, 94.24, and 98.38.

Annexes

Annex 1: Text of Title 9 *Code of Federal Regulations* 94.11, 94.13, 94.24, and 98.38.

9 CFR 94.11: Restrictions on importation of meat and other animal products from specified regions.

(a) Austria, The Bahamas, Belgium, Channel Islands, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxembourg, The Netherlands, Norway, Papua New Guinea, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom, which are declared in Sec. 94.1(a)(2) to be free of rinderpest and foot-and-mouth disease, supplement their national meat supply by the importation of fresh (chilled or frozen) meat of ruminants or swine from regions that are designated in Sec. 94.1(a) to be infected with rinderpest or foot-and-mouth disease; or have a common land border with regions designated as infected with rinderpest or foot-and-mouth disease; or import ruminants or swine from regions designated as infected with rinderpest or foot-and-mouth disease under conditions less restrictive than would be acceptable for importation into the United States. Thus, even though this Department has declared such regions to be free of rinderpest and foot-and-mouth disease, the meat and other animal products produced in such free regions may be commingled with the fresh (chilled or frozen) meat of animals from an infected region, resulting in an undue risk of introducing rinderpest or foot-and-mouth disease into the United States. Therefore, meat of ruminants or swine, and other animal products, and ship stores, airplane meals, and baggage containing such meat or animal products originating in the free regions listed in this section shall not be imported into the United States unless the following requirements in addition to other applicable requirements of chapter III of this title are met. However, meat and meat products which meet the requirements of Sec. 94.4 do not have to comply with the requirements of this section. As used in this section the term ``other animal product'' means all parts of the carcass of any ruminant or swine, other than meat and articles regulated under part 95 or 96 of this chapter.

(b) All meat or other animal product from such regions, whether in personal-use amounts or commercial lots (except that which has been fully cooked by a commercial method in a container hermetically sealed promptly after filling but before such cooking and sealing produced a fully sterilized product which is shelf-stable without refrigeration) shall have been prepared only in an inspected establishment that is eligible to have its products imported into the United States under the Federal Meat Inspection Act (21 U.S.C. 601 et seq.) and the regulations in Sec. 327.2, chapter III of this title, issued thereunder, and shall be accompanied by a Department-approved meat inspection certificate prescribed in Sec. 327.4 in chapter III of this title, or similar certificate approved by the Administrator, as adequate to effectuate the purposes of this section, regardless of the purpose or amount of product in the shipment.

(c) Additional certification. Meat of ruminants or swine or other animal products from regions designated in paragraph (a) of this section must be accompanied by additional certification by a full-time salaried veterinary official of the agency in the national government that is responsible for the health of the product in the United States, the certification must be presented to an authorized inspector at the port of arrival. The certification must give the name and official establishment number of the establishment where the animals were slaughtered, and shall state that:

(1) The slaughtering establishment is not permitted to receive animals that originated in, or have ever been in, or that have been aboard a means of conveyance at the time such means of conveyance called at or landed at a port in, a region listed in Sec. 94.1(a) as a region infected with rinderpest or foot-and-mouth disease;

(2) The slaughtering establishment is not permitted to receive meat or other animal products derived from ruminants or swine which originated in such a rinderpest or foot-and-mouth disease infected region, or meat or other animal products from a rinderpest and foot-and-mouth disease free region transported through a rinderpest or foot-and-mouth disease infected region except in containers sealed with serially numbered seals of the National Government of the noninfected region of origin;

(3) The meat or other animal product covered by the certificate was derived from animals born and raised in a region listed in Sec. 94.1(a)(2) as free of rinderpest and foot-and-mouth disease and the meat or other animal product has never been in any region in which rinderpest or foot-and-mouth disease existed;

(4) The meat or other animal product has been processed, stored, and transported to the means of conveyance that will bring the article to the United States in a manner to preclude its being commingled or otherwise in contact with meat or other animal products that do not comply with the conditions contained in this certificate.

9 CFR 94.13: Restrictions on importation of pork or pork products from specified regions

Austria, the Bahamas, Belgium, Bulgaria, Chile, Denmark, France, Germany, Hungary, Luxembourg, the Netherlands, Portugal, Republic of Ireland, Spain, Switzerland, the United Kingdom (England, Scotland, Wales, the Isle of Man, and Northern Ireland), Yugoslavia, and the Regions in Italy of Friuli, Liguria, Marche, and Valle d'Aosta are declared free of swine vesicular disease in Sec. 94.12(a) of this part.

These regions either supplement their national pork supply by the importation of fresh (chilled or frozen) meat of animals from regions where swine vesicular disease is considered to exist, have a common border with such regions, or have trade practices that are less restrictive than are acceptable to the United States. Thus, the pork or pork products produced in such regions may be commingled with fresh (chilled or frozen) meat of animals from a region where swine vesicular disease is considered to exist, resulting in an undue risk of swine vesicular disease introduction into the United States. Therefore, pork or pork products and ship's stores, airplane meals, and baggage containing such pork, other than those articles regulated under part 95 or part 96 of this chapter, produced in such regions shall not be brought into the United States unless the following requirements are met in addition to other applicable requirements of part 327 of this title:

(a) All such pork or pork products, except those treated in accordance with Sec. 94.12(b)(1)(i) of this part, shall have been prepared only in inspected establishments that are eligible to have their products imported into the United States under the Federal Meat Inspection Act (21 U.S.C. 601 et seq.) and under Sec. 327.2 of this title and shall be accompanied by the foreign meat inspection certificate required by Sec. 327.4 of this title. Upon arrival of the pork or pork products in the United States, the foreign meat inspection certificate must be presented to an authorized inspector at the port of arrival.

(b) Unless such pork or pork products are treated according to one of the procedures described in Sec. 94.12(b) of this part, the pork or pork products must be accompanied by an additional certificate issued by a full-time salaried veterinary official of the agency in the national government responsible for the health of the animals within that region. Upon arrival of the pork or pork products in the United States, the certificate must be presented to an authorized inspector at the port of arrival. The certificate shall state the name and official establishment number of the establishment where the swine involved were slaughtered and the pork was processed. The certificate shall also state that:

(1) The slaughtering establishment is not permitted to receive animals that originated in, or have ever been in a region listed in Sec. 94.12(a) as a region in which swine vesicular disease is considered to exist;

(2) The slaughtering establishment is not permitted to receive pork derived from swine which originated in such a region or pork from swine from a swine vesicular disease free region which has been transported through a region where swine vesicular disease is considered to exist except pork which was transported in containers sealed with serially numbered seals of the National Government of a region of origin listed in Sec. 94.12 as a region considered free of the disease.

(3) The pork has been processed, stored, and transported to the means of conveyance that will bring the article to the United States in a manner that precludes its being commingled or otherwise coming in contact with pork or pork products that have not been handled in accordance with the requirements of this section.

9 CFR 94.24: Restrictions on the importation of pork, pork products, and swine from the EU-15.

(a) Pork and pork products. In addition to meeting all other applicable provisions of this part, fresh pork and pork products imported from the EU-15 must meet the following conditions:

(1) The pork or pork products must not have been derived from swine that were in any of the regions described in paragraphs (a)(1)(i) through (a)(1)(iii) of this section during the periods described,

unless the swine were slaughtered after the periods described:

(i) Any region when the region was classified in §§ 94.9(a) and 94.10(a) as one in which classical swine fever is known to exist, except for the EU-15;

(ii) In a restricted zone in the EU-15 established because of an outbreak of classical swine fever in domestic swine, from the time of the outbreak until the designation of the zone as a restricted zone is removed by the competent veterinary authority of an EU-15 Member State or until 6 months following depopulation of the swine on affected premises in the restricted zone and the cleaning and disinfection of the last affected premises in the zone, whichever is later; or

(iii) In a restricted zone in the EU-15 established because of the detection of classical swine fever in wild boar, before the designation of the zone as a restricted zone is removed by the competent veterinary authority of an EU-15 Member State.

(2) The pork and pork products must not have been commingled with pork or pork products derived from swine that were in any of the regions or zones described in paragraphs (a)(1)(i) through (a)(1)(iii) of this section at any time during the periods described, unless the swine were slaughtered after the periods described. Additionally, the pork and pork products must not have been derived from swine that were commingled with swine that were in any of the regions or zones described in paragraphs (a)(1)(i) through (a)(1)(iii) of this section at any time during the periods described, unless the swine were slaughtered after the periods described.

(3) The swine from which the pork or pork products were derived must not have transited any region or zone described in paragraph (a)(1)(i) through (a)(1)(iii) of this section during the periods described, unless moved directly through the region or zone in a sealed means of conveyance with the seal determined to be intact upon arrival at the point of destination, or unless the swine were slaughtered after the periods described.

(4) The pork and pork products must be accompanied by a certificate issued by an official of the competent veterinary authority of the EU-15 Member State who is authorized to issue the foreign meat inspection certificate required by § 327.4 of this title, stating that the applicable provisions of paragraphs (a)(1) through (a)(3) of this section have been met.

(b) Live swine. In addition to meeting all other applicable provisions of this title, live swine imported from the EU-15 must meet the following conditions:

(1) The swine must be breeding swine;

(2) The swine must not have been in any of the following regions or zones at any time during the periods described in paragraphs (b)(2)(i) through (b)(2)(iii) of this section:

(i) Any region when the region was classified in §§ 94.9(a) and 94.10(a) as one in which classical swine fever is known to exist, except for the EU-15, unless the swine are exported to the United States after APHIS removes its classification of the region as one in which classical swine fever is known to exist;

(ii) In a restricted zone in the EU-15 established because of an outbreak of classical swine fever in domestic swine, unless the swine are exported after the designation of the zone as a restricted zone is removed by the competent veterinary authority of an EU-15 Member State or after 6 months following depopulation of the swine on affected premises in the restricted zone and the cleaning and disinfection of the last affected premises in the zone, whichever is later; or

(iii) In a restricted zone in the EU-15 established because of the detection of classical swine fever in wild boar, unless the swine are exported after the designation of the zone as a restricted zone is removed by the competent veterinary authority of an EU-15 Member State;

(3) The swine must not have been commingled with swine that have at any time been in any of the regions described in paragraphs (b)(1)(i) through (b)(1)(iii) of this section during the periods described, unless the swine are exported after the periods described;

(3) The swine must not have transited any region or zone described in paragraph (b)(2) of this section during the periods described, unless moved directly through the region or zone in a sealed means of conveyance with the seal determined to be intact upon arrival at the point of destination, or unless the swine

are exported after the periods described;

(4) No equipment or materials used in transporting the swine may have previously been used for transporting swine that do not meet the requirements of this section, unless the equipment and materials have first been cleaned and disinfected; and

(5) The swine must be accompanied by a certificate issued by a salaried veterinary officer of the competent veterinary authority of the EU-15 Member State, stating that the conditions of paragraphs (b)(1) through (b)(4) of this section have been met.

(c) The certificates required by paragraphs (a)(4) and (b)(5) of this section must be presented by the importer to an authorized inspector at the port of arrival, upon arrival of the swine, pork, or pork products at the port.

9 CFR 98.38: Restrictions on the importation of swine semen from the EU-15.

In addition to meeting all other applicable provisions of this part, swine semen imported from the EU-15 must meet the following conditions, except as noted in paragraph (h) of this section with regard to swine semen imported from Denmark, Finland, the Republic of Ireland, Sweden, or the United Kingdom:

(a) The semen must come from a semen collection center approved for export by the competent veterinary authority of the EU-15 Member State;

(b) The semen must not have been collected from a donor boar that was in any of the regions or zones described in paragraphs (b)(1) or (b)(2) of this section at any time during the periods described, unless the semen was collected after the periods described:

(1) Any region when the region was classified in §§ 94.9(a) and 94.10(a) of this chapter as one in which classical swine fever is known to exist, except for the EU-15; or

(2) During the following time periods in any restricted zone in the EU-15:

(i) In a restricted zone in the EU-15 established because of an outbreak of classical swine fever in domestic swine, from the time of the outbreak until the designation of the zone as a restricted zone is removed by the competent veterinary authority of an EU-15 Member State or until 6 months following depopulation of the swine on affected premises in the restricted zone and the cleaning and disinfection of the last affected premises in the zone, whichever is later; or

(ii) In a restricted zone established because of the detection of classical swine fever in wild boar, before the designation of the zone as a restricted zone is removed by the competent veterinary authority of the EU-15 Member State.

(c) The semen must not have been collected from a donor boar that was commingled with swine that at any time were in any of the regions or zones described in paragraphs (b)(1) or (b)(2) of this section, unless the semen was collected after the periods described;

(d) The semen must not have been collected from a donor boar that transited any region or zone described in paragraphs (b)(1) and (b)(2) of this section during the periods described, unless the donor boar was moved directly through the region or zone in a sealed means of conveyance with the seal determined to be intact upon arrival at the point of destination, or unless the semen was collected after the periods described;

(e) The donor boar must be held in isolation for at least 30 days prior to entering the semen collection center;

(f) No more than 30 days prior to being held in isolation as required by paragraph (c) of this section, the donor boar must be tested with negative results with a classical swine fever test approved by the Office International des Epizooties (World Organization for Animal Health);

(g) No equipment or materials used in transporting the donor boar from the farm of origin to the semen collection center may have been used previously for transporting swine that do not meet the requirements of this section, unless such equipment or materials had first been cleaned and disinfected;

(h) Except for semen collected from swine in Denmark, Finland, the Republic of Ireland, Sweden, or the United Kingdom, before the semen is exported to the United States, the donor boar must be held at the semen collection center and observed by the center veterinarian for at least 40 days following collection of the semen, and, along with all other swine at the semen collection center, exhibit no clinical signs of classical swine fever; and

(i) The semen must be accompanied to the United States by a certificate issued by a salaried veterinary officer of the competent veterinary authority of the EU-15 Member State, stating that the provisions of paragraphs (a) through (f) of this section have been met.

Annex 2: Import data for Lithuania from 2003-2005.

Figure 2A: Import of live swine (GTA 2006)

Partner Country	Quantity			% Share		
	2003	2004	2005	2003	2004	2005
World	749	9771	24291	100.00	100.00	100.00
Poland	529	9186	21787	70.63	94.01	89.69
Latvia	120	340	1590	16.02	3.48	6.55
Germany	26	7	651	3.47	0.07	2.68
France	0	0	160	0.00	0.00	0.66
Denmark	74	238	88	9.88	2.44	0.36
Norway	0	0	15	0.00	0.00	0.06

Figure 2B: Export of live swine (GTA 2006)

Partner Country	Quantity			% Share		
	2003	2004	2005	2003	2004	2005
World	7565	4664	42797	100.00	100.00	100.00
Poland	0	0	21559	0.00	0.00	50.38
Latvia	7475	3381	13647	98.81	72.49	31.89
Germany	0	1283	4914	0.00	27.51	11.48
Denmark	0	0	2450	0.00	0.00	5.72
Russia	0	0	159	0.00	0.00	0.37
Belarus	10	0	68	0.13	0.00	0.16
Moldova	80	0	0	1.06	0.00	0.00

Figure 2C: Import of live cattle (GTA 2006)

Partner Country	Quantity			% Share		
	2003	2004	2005	2003	2004	2005
World	277	708	2690	100.00	100.00	100.00
Latvia	0	19	840	0.00	2.68	31.23
Germany	253	141	645	91.34	19.92	23.98
Poland	0	59	341	0.00	8.33	12.68
Belgium	0	31	285	0.00	4.38	10.59
Netherlands	0	31	217	0.00	4.38	8.07
France	0	211	143	0.00	29.80	5.32
Denmark	0	0	99	0.00	0.00	3.68
Finland	0	0	60	0.00	0.00	2.23
Sweden	24	156	60	8.66	22.03	2.23
Russia	0	36	0	0.00	5.08	0.00
Czech Republic	0	24	0	0.00	3.39	0.00

Figure 2D: Export of live cattle (GTA 2006)

Partner Country	Quantity			% Share		
	2003	2004	2005	2003	2004	2005
World	13291	23559	66998	100.00	100.00	100.00
Netherlands	0	3227	34489	0.00	13.70	51.48
Spain	0	4776	14223	0.00	20.27	21.23
Poland	64	1603	5176	0.48	6.80	7.73
Germany	245	3458	3845	1.84	14.68	5.74
Belgium	0	0	2232	0.00	0.00	3.33
Latvia	7274	5391	1674	54.73	22.88	2.50
Croatia	845	961	1655	6.36	4.08	2.47
Israel	0	0	1450	0.00	0.00	2.16
Hungary	65	912	1156	0.49	3.87	1.73
Italy	0	111	621	0.00	0.47	0.93
Ukraine	240	585	432	1.81	2.48	0.64
Bosnia & Herzegovina	2258	418	45	16.99	1.77	0.07
Estonia	0	13	0	0.00	0.06	0.00
Russia	2300	2104	0	17.30	8.93	0.00

Figure 2E: Import of live sheep and goats (GTA 2006)

Partner Country	Quantity			% Share		
	2003	2004	2005	2003	2004	2005
World	790	22	662	100.00	100.00	100.00
Germany	566	4	662	71.65	18.18	100.00
France	190	0	0	24.05	0.00	0.00
Poland	34	18	0	4.30	81.82	0.00

Figure 2F: Import of fresh, chilled, or frozen pork (GTA 2006)

Partner Country	Unit	Quantity			% Share		
		2003	2004	2005	2003	2004	2005
World	T	8739	21603	22848	100.00	100.00	100.00
Poland	T	1248	10323	9925	14.28	47.79	43.44
Estonia	T	4753	3861	3246	54.39	17.87	14.21
Germany	T	1763	3604	2734	20.17	16.68	11.97
Finland	T	45	1025	1879	0.51	4.74	8.22
Belgium	T	275	482	1543	3.15	2.23	6.76
Denmark	T	162	1082	1087	1.86	5.01	4.76
Sweden	T	183	449	502	2.10	2.08	2.20
France	T	246	359	461	2.81	1.66	2.02
Austria	T	0	21	457	0.00	0.10	2.00
Spain	T	43	232	420	0.49	1.08	1.84
Netherlands	T	12	152	302	0.14	0.70	1.32
Latvia	T	9	13	195	0.10	0.06	0.85
China	T	0	0	54	0.00	0.00	0.24
Italy	T	0	0	44	0.00	0.00	0.19

Figure 2G: Export of fresh, chilled, or frozen pork (GTA 2006)

Partner Country	Unit	Quantity			% Share		
		2003	2004	2005	2003	2004	2005
World	T	1214	848	792	100.00	100.00	100.00
Latvia	T	1212	715	359	99.79	84.33	45.39
Poland	T	0	0	114	0.00	0.05	14.38
Russia	T	0	12	91	0.00	1.39	11.52
Netherlands	T	0	2	56	0.00	0.26	7.02
Extra EU Provisions	T	0	32	41	0.00	3.81	5.18
Germany	T	0	39	41	0.00	4.55	5.18
Estonia	T	0	18	29	0.00	2.13	3.65
Denmark	T	0	0	22	0.00	0.00	2.79
Belarus	T	0	20	19	0.00	2.38	2.34
Sweden	T	0	0	14	0.00	0.00	1.76
Italy	T	0	0	4	0.00	0.05	0.52
Spain	T	0	0	1	0.00	0.00	0.16
Malta	T	0	1	1	0.00	0.12	0.11
Greece	T	0	0	0	0.00	0.04	0.00
Norway	T	0	0	0	0.00	0.00	0.00
Not Determined	T	0	0	0	0.01	0.00	0.00
Panama	T	0	0	0	0.00	0.00	0.00
Belgium	T	0	0	0	0.00	0.00	0.00
Cayman Islands	T	0	0	0	0.00	0.01	0.00
China	T	0	0	0	0.00	0.00	0.00
Cyprus	T	0	3	0	0.00	0.33	0.00
Finland	T	0	0	0	0.00	0.00	0.00
St. Vincent/Grenadines	T	0	0	0	0.00	0.01	0.00
United Kingdom	T	0	0	0	0.00	0.02	0.00
United States	T	3	4	0	0.21	0.51	0.00
Slovakia	T	0	0	0	0.00	0.00	0.00
Romania	T	0	0	0	0.00	0.01	0.00

Figure 2H: Import of fresh or chilled beef (GTA 2006)

Partner Country	Unit	Quantity			% Share		
		2003	2004	2005	2003	2004	2005
World	T	28	42	245	100.00	100.00	100.00
Poland	T	0	39	151	0.00	93.54	61.41
Latvia	T	6	0	81	21.55	0.00	32.89
Estonia	T	0	3	12	0.00	6.46	4.85
Germany	T	0	0	2	0.00	0.00	0.77
Netherlands	T	0	0	0	0.00	0.00	0.08
Italy	T	21	0	0	73.50	0.00	0.00
Russia	T	1	0	0	4.95	0.00	0.00

Figure 2I: Export of fresh or chilled beef (GTA 2006)

Partner Country	Unit	Quantity			% Share		
		2003	2004	2005	2003	2004	2005
World	T	3871	9137	20958	100.00	100.00	100.00
Russia	T	30	1539	5873	0.76	16.84	28.02
Belarus	T	0	2171	5829	0.00	23.76	27.81
Germany	T	27	915	2793	0.70	10.02	13.32
Netherlands	T	26	1153	2465	0.66	12.62	11.76
Latvia	T	2332	1484	1035	60.24	16.24	4.94
Estonia	T	400	400	1027	10.33	4.38	4.90
Italy	T	1057	784	812	27.30	8.58	3.87
Denmark	T	0	49	232	0.00	0.53	1.11
Spain	T	0	0	206	0.00	0.00	0.98
Sweden	T	0	8	200	0.00	0.09	0.96
United Kingdom	T	0	36	119	0.00	0.39	0.57
Poland	T	0	161	116	0.00	1.77	0.55
Austria	T	0	208	89	0.00	2.28	0.42
France	T	0	74	73	0.00	0.81	0.35
Finland	T	0	0	44	0.00	0.00	0.21
Belgium	T	0	0	41	0.00	0.00	0.19
Extra EU Provisions	T	0	2	5	0.00	0.02	0.02
Cayman Islands	T	0	0	0	0.00	0.00	0.00
China	T	0	0	0	0.00	0.00	0.00
Cyprus	T	0	1	0	0.00	0.01	0.00
Greece	T	0	16	0	0.00	0.18	0.00
Ireland	T	0	136	0	0.00	1.48	0.00
Malta	T	0	0	0	0.00	0.00	0.00
Norway	T	0	0	0	0.00	0.00	0.00
Not Determined	T	0	0	0	0.00	0.00	0.00
Romania	T	0	0	0	0.00	0.00	0.00
Slovakia	T	0	0	0	0.00	0.00	0.00
United States	T	0	0	0	0.01	0.00	0.00
Turkey	T	0	0	0	0.00	0.00	0.00

Figure 2J: Import of fresh, chilled, or frozen sheep and goat meat (GTA 2006)

Partner Country	Unit	Quantity			% Share		
		2003	2004	2005	2003	2004	2005
World	T	0	3	5	n/a	100.00	100.00
Latvia	T	0	1	2	n/a	25.00	46.00
Spain	T	0	0	2	n/a	0.00	44.00
Netherlands	T	0	1	1	n/a	42.86	10.00
Belgium	T	0	0	0	n/a	10.71	0.00
Germany	T	0	1	0	n/a	21.43	0.00

Figure 2K: Export of fresh, chilled, or frozen sheep and goat meat (GTA 2006)

Partner Country	Unit	Quantity			% Share		
		2003	2004	2005	2003	2004	2005
World	T	4	4	16	100.00	100.00	100.00
United Kingdom	T	0	0	10	0.00	0.00	62.11
Latvia	T	4	3	3	100.00	80.49	18.63
Estonia	T	0	0	1	0.00	0.00	8.70
Extra EU Provisions	T	0	0	1	0.00	2.44	7.45
Germany	T	0	0	1	0.00	0.00	3.11
Cyprus	T	0	0	0	0.00	2.44	0.00
United States	T	0	1	0	0.00	14.63	0.00

Annex 3: CSF surveillance results in domestic swine and wild boar from 2002-2004.

Table 3A: CSF surveillance results for 2002

County	Number of serum samples tested*	
	Domestic swine	Wild boar
Alytus	111	67
Kaunas	406	75
Klaipėda	181	41
Marijampolė	148	78
Panevėžys	281	31
Šiauliai	609	26
Tauragė	104	17
Telšiai	0	7
Utena	309	61
Vilnius	369	43
Total	2,518	446

* No sample confirmed positive for CSF.

Table 3B: CSF surveillance results for 2003

County	Number of serum samples tested*	
	Domestic swine	Wild boar
Alytus	300	83
Kaunas	1823	57
Klaipėda	740	44
Marijampolė	879	137
Panevėžys	5158	70
Šiauliai	2318	38
Tauragė	290	62
Telšiai	1388	35
Utena	1426	65
Vilnius	1589	52
Total	15,911	643

* No sample confirmed positive for CSF.

Table 3C: CSF surveillance results for January – September 2004

County	Number of serum samples tested*	
	Domestic swine	Wild boar
Alytus	432	60
Kaunas	409	16
Klaipėda	585	2
Marijampolė	60	99
Panevėžys	350	50
Šiauliai	500	20
Tauragė	32	13
Telšiai	0	53
Utena	427	28
Vilnius	5	32
Total	2,800	395

* No sample confirmed positive for CSF.

Annex 4: SVD surveillance results in domestic swine from 2003-2004.

Table 4A: SVD surveillance results 2003 and 2004*

County	2003	2004**
Alytus	300	13
Kaunas	1,531	24
Klaipėda	675	50
Marijampolė	879	60
Panevėžys	5,033	53
Šiauliai	1,676	29
Tauragė	290	22
Telšiai	1,391	0
Utena	1,352	81
Vilnius	1,551	5
Total	14,378	337

* No sample confirmed positive for SVD.
** January through September 2004.

Annex 5: FMD surveillance results in susceptible species from 2003-2004.

Table 5A: FMD surveillance in 2003*

County	Cattle	Pigs	Wild boar	Roe deer
Alytus	83	150	75	13
Kaunas	28	206	55	27
Klaipėda	21	22	28	29
Marijampolė	120	55	85	68
Panevėžys	99	707	70	83
Šiauliai	118	66	33	39
Tauragė	60	60	52	16
Telšiai	28	60	35	6
Utena	77	142	64	74
Vilnius	70	115	52	26
Total	704	1,583	549	381

* No sample confirmed positive for FMD.

Table 5B: FMD surveillance results January – September 2004*

County	Cattle	Pigs	Wild boar	Roe deer
Alytus	29	0	61	3
Kaunas	0	159	9	0
Klaipėda	12	49	23	6
Marijampolė	72	11	118	0
Panevėžys	0	278	49	0
Šiauliai	0	0	20	0
Tauragė	13	0	53	0
Telšiai	0	0	53	0
Utena	53	30	32	1
Vilnius	7	187	31	0
Total	173	727	409	10

* No sample confirmed positive for FMD.

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