

CEI Impact Worksheet Foot and Mouth Disease, United Kingdom

Summary

Foot-and-mouth disease (FMD), a highly contagious viral disease of ruminants and swine, was confirmed on a farm near Guildford in Surrey County, England on August 3, 2007. The source of the outbreak is still under investigation. There are currently two sites involved, and each site has three separate geographic areas. The British government has depopulated the farm where the initial outbreak took place and has begun culling at the second site. A total of 97 animals have been culled to date. Officials are carrying out regulatory and surveillance activities. FMD was last diagnosed in Great Britain in 2001. In 2006 and 2007 (January – May), the United States imported approximately 2.1 million kg of fresh or frozen pork from the United Kingdom. Additional U.S. imports from the United Kingdom during this period include dairy products, wool, wool grease, hides, bovine semen, fertilizers, and animal hair.

Current outbreak and status of foot and mouth disease in the United Kingdom

On August 3, 2007, FMD serotype O was confirmed on a beef cattle finishing operation in Normandy, near the city of Guildford. The outbreak, which began on July 29, is located on a site with 38 cattle and is owned by a farm enterprise that has two other sites within close proximity. The latter sites house 22 and 4 cattle, respectively. Clinical signs were reported to the local animal health office and restrictions were put in place on August 2. After FMD was confirmed, a 3 km protection zone and a 10 km surveillance zone were set up around the infected farm.

On August 4, 64 cattle were culled at the three sites. An additional 33 animals, including goats, sheep, and pigs, were also culled from dangerous contact premises. While the initial outbreak site did not receive any new animals recently, it did have two movements off of the premises in the last

month for slaughter. One animal housed at the farm's second location tested positive for FMD, even though no clinical signs were seen.

The protection zone was expanded to include the second FMD-positive site, and the surveillance zone was expanded accordingly. The Institute for Animal Health (IAH) and Merial Animal Health Ltd., a private vaccine manufacturer co-located with the IAH on the Pirbright Laboratory campus, are part of the epidemiological investigation and were included in the protection zone.



On August 6, a second FMD outbreak was suspected and culling began that day. The second outbreak in Surrey County was confirmed on August 7. The protection and surveillance zones were expanded to include the newest location, which is between Pirbright and the index farm in Normandy. The second outbreak is on a site with 40 cattle, and is one of three sites owned by a single farm enterprise. The other two sites have a total of 62 cattle, and authorities are evaluating whether these sites should be considered dangerous contact premises. All culled carcasses from the outbreaks are being incinerated.

Beginning on August 3, the United States banned all products from the United Kingdom that are derived from FMD susceptible species, including products already in transit. Although many live ruminant and ruminant derived products from the United Kingdom were already subject to entry restrictions due to concern about bovine spongiform encephalopathy, the restrictions now include pork and pork products.

Great Britain has banned the movement of all ruminants and pigs, and has voluntarily suspended the export of cloven-hoofed animals and their products, including meat, milk, and carcasses. While the government has encouraged increased biosecurity measures throughout the country, within the surveillance and protection zones many biosecurity measures are required. These include controls on transportation of dung/manure, bedding, and animal feed. Products from animals in these zones will be subject to treatment to ensure destruction of the FMD virus.

Some European countries have announced precautionary health checks on livestock species, especially animals recently imported from the United Kingdom. In keeping with European Union (EU) legislation and OIE guidelines, the United Kingdom is not planning to vaccinate livestock for FMD, but has ordered 300,000 doses from its vaccine bank should emergency vaccination be deemed necessary.

Although the source of the outbreak is still unknown, the investigation has been focusing on the Pirbright campus located about 5 km from the site of the initial outbreak.

The strain of FMD identified near Guildford is a 01 BFS67-like virus, and appears to be the same strain of FMD that was isolated in the 1967 FMD outbreak in Great Britain. This particular strain has not recently been found in animals, but is used extensively in laboratory testing and in vaccine production. Both Merial and the IAH used this strain of FMD recently, and Merial manufactured a 10,000-liter batch of the vaccine in mid-July 2007. There is no indication that the exposed animals had been vaccinated. Merial has voluntarily halted vaccine production, and inspectors from the Health and Safety Executive (HSE) have begun investigating Pirbright's biosecurity measures and biological agent controls for both the IAH and Merial. A preliminary HSE report on August 7 stated that the likelihood of an airborne escape of FMD virus from the laboratory is negligible, but release by human movement is considered a real possibility. In addition, flooding has largely been ruled out as contributing to the outbreak, although other potential waterborne routes are still being investigated.

The United Kingdom experienced an outbreak of FMD in 2001, devastating the British livestock

industry. More than 6 million animals were slaughtered, costing an estimated 17 billion dollars.

Sources: Department of Environment, Food and Rural Affairs (Defra) <http://www.defra.gov.uk/footandmouth/ProMED-mail>
<http://www.promedmail.org/pls/promed/f?p=2400:1000>
 OIE WAHID Interface, Weekly Disease Information
http://www.oie.int/wahid-prod/public.php?page=weekly_report_index&admin=0

United Kingdom share of the international market for cattle, pigs, and sheep

The United Kingdom had 10.2 million cattle, 4.9 million pigs, 34.7 million sheep, and 96 thousand goats in 2006 (Table 1). These numbers represent less than 1% of world stocks for cattle, pigs, and goats and 3% of world stocks for sheep. The United Kingdom produced 762 thousand metric tons of cattle meat, 706 thousand metric tons of pig meat, and 331 thousand metric tons of sheep meat in 2006. These numbers represent 1%, less than 1%, and 4% of world production of cattle, pig and sheep meat, respectively. U.K. production of cow's milk and greasy wool in 2006 represented 3% of world production for each of these products.

Table 1: Animal stocks and production, United Kingdom, 2005 and 2006

	2005	2006	
	Stocks (1000 head)	Stocks (1000 head)	% of World Stocks
Cattle	10,378	10,160	<1
Pigs	4,851	4,933	<1
Sheep	35,253	34,722	3
Goats	92	96	<1
	Production (Metric tons)	Production (Metric tons)	% of World Production
Cattle meat	762,000	762,000	1
Pig meat	706,000	706,000	<1
Sheep meat	331,000	331,000	4
Goat meat	na	na	na
Milk, cow	14,577,000	14,577,000	3
Wool, greasy	60,000	60,000	3

Source: United Nations FAO; na = not available

The United Kingdom exported 19.2 thousand cattle, 109.7 thousand pigs, 12.9 thousand sheep, and 528 goats in 2006 (Table 2). U.K. exports of live cattle in 2006 went almost exclusively to EU countries, with the majority (89%) going to the Netherlands. Live swine were exported to 18 countries in 2006, with the majority going to Ireland (62%) and Russia (26%). Live sheep were exported to France, Romania, and Ireland, with the majority going to France (99%). Live goats were exported only to Tanzania in 2006.

In 2006, the United Kingdom exported 40.9 thousand metric tons of cattle meat, 94.7 thousand metric tons of pig meat, 86.9 thousand metric tons of sheep meat, and 22 metric tons of goat meat (Table 2). Cattle meat exports went primarily to the

Netherlands, Ireland, and France. Swine meat exports went primarily to Germany, the Netherlands and Ireland, with lesser amounts going to 60 other countries. France received 71% of the U.K. sheep meat exports, with lesser amounts going to 39 other countries. Goat meat exports went to France (84%) and Ireland (16%) in 2006. Raw hides, skins (other than fur-skins), and leather valued at \$483 million were exported to 199 countries in 2006. Exports of dairy products valued at almost \$1.2 billion went to more than 84 countries in 2006. The quantity of U.K. exports of sheep meat, dairy products, and hides and skins represented 9%, 4%, and 5% of world exports in 2006.

Sources: United Nations FAO, *Global Trade Atlas*, 2007

Table 2: Exports of relevant live animals and animal products, United Kingdom, 2005 and 2006

Exports	2005 ¹		2006 ¹		% of World in 2005 ²	
	Quantity (# head or mt)	Value (1000 \$)	Quantity (# head or mt)	Value (1000 \$)	Quantity	Value
Live (head)						
Cattle	0	0	19,172	6,286	0	0
Pigs	79,889	16,639	109,673	26,207	<1	<1
Sheep	0	0	12,932	3,482	0	0
Goats	636	213	528	210	<1	<1
Products (metric tons)						
Cattle meat	8,566	44,196	40,939	171,253	<1	<1
Pig meat	91,521	189,996	94,727	183,464	1	<1
Sheep meat	84,992	385,898	86,909	427,834	9	10
Goat meat	65	189	22	95	<1	<1
Dairy ³	957,428	1,177,097	974,065	1,185,827	4	3
Hides & skins, raw, leather ⁴	na	499,081	na	483,213	5	4

Source: ¹Global Trade Atlas (GTA); ²United Nations FAO, individual products included in dairy and hides & skins categories do not match exactly those in Global Trade Atlas, ³ GTA HS codes 401-406 including milk, cream, yogurt, buttermilk, cheese, whey, and butter; ⁴ HS code 41; na = not available

U.S. imports of relevant animal species and related products from United Kingdom

The United States imported approximately 1.4 million and 694 thousand kg of fresh or frozen pork from the United Kingdom during 2006 and 2007 (January – May), respectively (Table 3). Seven different dairy products were imported from the United Kingdom to the United States in 2006 and 2007 (January – May), valued at almost \$42 million dollars in 2006 and \$15 million dollars in 2007. Other products imported by the United States in 2006 and 2007 include wool, wool grease, hides, bovine semen, fertilizers, and animal hair.

Canada and Mexico imports of relevant animal species and related products from United Kingdom

Canada imported 628,775 and 260,353 kg of dairy products from the United Kingdom in 2006 and 2007 (January – May), respectively (Table 4). It also imported sausage, wool, bovine semen, hides, and fertilizer during the same period.

Mexico imported 3,243,883 and 879,163 kg of dairy products from the United Kingdom in 2006 and 2007 (January – May), respectively (Table 5). Mexico also imported wool grease and hides.

Table 3: U.S. imports of relevant animals and animal products from United Kingdom, 2006 and Jan – May 2007

Product	2006		Jan - May 2007	
	Quantity	\$Value (thousands) (U.S. dollars)	Quantity	\$Value (thousands) (U.S. dollars)
Pork, Fresh or Frozen (KG)	1,411,771	7,305	694,350	3,251
Milk and cream (L)	101,247	987	34,971	392
Yogurt (KG)	12,553	42	0	0
Buttermilk (L)	408	5	0	0
Whey (L)	14,937	5	0	0
Other Milk Products (KG)	446	4	0	0
Butter (KG)	657,480	1,969	39,384	184
Cheese and Curd (KG)	5,658,041	38,744	2,244,497	14,960
Hair of Hog or Badger (KG)	903	284	70	145
Wool	n/a	4,971	n/a	2,759
Wool Grease (KG)	452,150	5,125	316,511	2,480
Raw Bovine or Equine Hides (PCS)	243	22.5	1	1
Goat Hides (PCS)	0	0	30	1
Sheep Hides (PCS)	31	7	0	0
Bovine Semen (DS)	93,076	755	117,461	735
Animal/Vegetable Fertilizers (T)	1,536	469	1,258	310
Total	8,404,822	60,694.5	3,448,533	25,218

Source: World Trade Atlas

DS = Doses; KG = Kilogram; L = Liter; PCS = Pieces; T = Metric Tons

Table 4: Canada imports of relevant animals and animal products from United Kingdom, 2006 and Jan – May 2007

Product	2006		Jan - May 2007	
	Quantity	\$Value (thousands) (Canadian dollars)	Quantity	\$Value (thousands) (Canadian dollars)
Milk and cream (KG)	41,769	346	16,309	177
Whey (KG)	0	0	2	335
Butter (KG)	50,725	128	0	0
Cheese and Curd (KG)	536,281	6,083	244,042	2,868
Bovine Semen	n/a	105	n/a	62
Sausage (KG)	9	n/a		
Raw Bovine or Equine Hides (PCS)	271	15	0	0
Wool	n/a	192	n/a	108
Animal/Vegetable Fertilizers (KG)	188,254	22	114,377	21
Total	817,309	6,891	374,730	3,571

Source: World Trade Atlas

KG = Kilogram; PCS = Pieces

Table 5: Mexico imports of relevant animals and animal products from United Kingdom, 2006 and Jan – May 2007

Product	2006		Jan - April 2007	
	Quantity	\$Value (thousands) (U.S. dollars)	Quantity	\$Value (thousands) (U.S. dollars)
Milk and cream (KG)	525,000	1,189	650,000	2,132
Butter (KG)	2,718,847	6,537	228,660	519
Cheese and Curd (KG)	0	0	489	7
Bovine Semen (KG)	36	445	14	144
Wool Grease (KG)	71,188	356	4,417	51
Raw Bovine or Equine Hides (KG)	24,286	40	0	0
Sheep Hides (KG)	120,480	99	21,553	39
Total	3,459,837	8,666	905,133	2,892

Source: World Trade Atlas
KG = Kilograms

Amount of air passenger traffic arriving in the United States from the United Kingdom

During 2006, an estimated 8,835,237 airline passengers arrived in the United States on direct flights from the United Kingdom. This includes residents and non-residents of the United Kingdom.

As part of the APHIS-PPQ agricultural quarantine inspection monitoring program, 14,515 airline passengers from the United Kingdom were sampled for items of agricultural interest in fiscal year 2006. Of the sampled passengers, 425 were found to be carrying items of interest that were seized upon entry. Items of interest included pork (89 kg), beef (51 kg), unidentified meat (37kg), and lamb (9 kg). Additionally, 76 passengers were found to be carrying sandwiches of beef or unidentified meat. None of the surveyed passengers reported coming from a farm; however one group of passengers reported that they were planning to visit a farm in the United States.

Source: USDA APHIS-PPQ Agricultural Quarantine Inspection databases, Bureau of Transportation Statistics

CEI's plans for follow-up

CEI will continue to monitor the FMD outbreak situation in the United Kingdom but has no plans at this time to issue additional reports. If you would like additional information or would like to comment on this worksheet, you may reply to this message, or contact CEI at (970) 494-7000 or cei/aphis/usda@aphis.usda.gov.

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