Brucella melitensis, Bulgaria June 16, 2006 Impact Worksheet

Summary:

On June 12, 2006, the Bulgarian delegate to the OIE reported brucellosis caused by *Brucella melitensis* on a traditional goat farm in southern Bulgaria. Four goats were diagnosed with *Brucellla melitensis* infection, all of which were destroyed. Conventional disease control measures have been implemented and Bulgaria considers the disease event to be resolved. Prior to this outbreak, Bulgaria last reported *Brucella melitensis* to the OIE in 1941.

In recent years and through the first four months of 2006, the US imported substantial amounts of cheese and curd from Bulgaria, the majority of which is made from milk of sheep. Upon proper treatment, milk products are not considered to be at risk for *B. melitensis* and are permitted to be imported into the US.

During 2005, Bulgaria's stocks of live cattle and goats amounted to an estimated 671,579 and 718,117 animals, respectively, while its national sheep flock totaled about 1.7 million animals. Bulgaria's share of world animal and animal product exports is relatively small.

How extensive is *Brucella melitensis* in Bulgaria, and what was Bulgaria's disease status prior to the outbreak?

On June 12, 2006, the Bulgarian delegate to the OIE reported brucellosis, caused by *B. melitensis*, on a traditional goat farm in Bulgaria. The farm is located in Zlatograd, Smoljan Province, southern Bulgaria (see map). Four animals were found to be infected, all of which were destroyed. The illness reportedly started on June 7, 2006 and was confirmed at the National Diagnostic Research Veterinary Medical Institute. Disease control measures were implemented including herd depopulation, premises quarantine, disinfection, dipping/spraying, zoning, and halting of animal movements to and from the affected property. The Bulgarian government considers this brucellosis event resolved. *Brucella melitensis* is endemic in many European countries, including several of the countries surrounding Bulgaria. Prior to this outbreak, Bulgaria last reported *Brucella melitensis* to the OIE in 1941.

Background

Brucellosis, caused by the bacterium *B. melitensis*, is an infectious zoonotic disease of small ruminants, primarily goats and sheep. Because of its serious affects on both livestock and humans, this disease plays an important role in the national economy and public health of many developing countries.

Brucella melitensis mainly affects the reproductive tract of goats and sheep, and in regions where the disease is enzootic it is the major cause of abortion in these animals. It can also impair fertility and lactation over the longer term. *B. melitensis* is the most virulent of the *Brucella* species for humans and has the broadest host range, infecting cattle, camels and dogs, in addition to sheep, goats and humans. People infected with *B. melitensis* can

suffer serious complications, including infection and inflammation of the bones and joints, and occasionally, the heart and brain.

Although first described in the coastal areas of the Mediterranean, *B. melitensis* also occurs in small ruminants throughout the Middle East, Mongolia, Russia, Mexico, Latin America, and parts of Africa. In the United States, the first report of a large population of animals infected with *B. melitensis* was in October 1999, when four cows and a large flock of goats and sheep from southern Texas were diagnosed with the pathogen. Previously, there had been only a few sporadic cases in the US. The likely source of the brucellosis outbreak in Texas was infected goats from northern Mexico, which may have been introduced into this naive population.

Sources: OIE, FAO; Elzer et al. 2002. Veterinary Microbiology 90:425-431

What is Bulgaria's place in the international market for potentially affected ruminants and their products?

During 2005, Bulgaria's stocks of live cattle and goats amounted to an estimated 671,579 and 718,117 animals, respectively, while its national sheep flock totaled about 1.7 million animals (Table 1). Bulgaria's combined production of bovine, ovine, and caprine meat products totaled 68 thousand metric tons during 2005 and its total milk production amounted to 1.6 million metric tons. Bulgaria's animal stocks and products shown in Table 1 amounted to less than 1% of world stocks and products except for sheep milk which comprised 1.3% of world sheep milk production.

Table 1: Relevant animal stocks and production, Bulgaria, 2004 and 2005

	2004	2005	
	Stocks (head)	**Stocks (head)**	**Percent of World Stocks**
Buffalo	7,875	7,973	<1%
Cattle	728,336	671,579	<1%
Goats	725,300	718,117	<1%
Sheep	1,598,556	1,692,507	<1%
	Production (Mt)	**Production (Mt)**	
Beef / veal	30,676	24,885	<1%
Buffalo meat	120	189	<1%
Mutton / lamb	36,900	36,500	<1%
Goat meat	6,208	6,386	<1%
Buffalo milk	6,229	7,003	<1%
Cow milk	1,334,750	1,358,593	<1%
Goat milk	129,381	109,320	<1%
Sheep milk	117,682	115,644	1.3%

Source: United Nations FAO

During 2004, Bulgaria's share of world animal and animal product exports amounted to 1% or less of world exports for all relevant animals and animal products (Table 2). Between 2003 and 2004, Bulgarian exports of live sheep and goats increased substantially; however, remained 1% or less of world exports for these livestock categories.

Table 2: Exports of relevant live animal and animal products, Bulgaria, 2003 - 2004

	2003		2004		% of World in 2004	
Exports	Quantity (# head or mt)	Value (1000 $)	Quantity (# head or mt)	Value (1000 $)	Quantity	Value
Live (head)						
Cattle	24,739	5,143	24,432	4,414	<1%	<1%
Sheep	160	9	149,992	9,034	1%	<1%
Goats	965	18	5,167	169	<1%	<1%
Animal Products (metric tons)						
Bovine meat	863	4,669	876	4,416	<1%	<1%
Mutton/lamb meat	7,031	29,928	7,047	34,752	<1%	1%
Goat meat	550	2,316	298	1,973	<1%	2%
Cow milk	112	77	126	128	<1%	<1%
Butter of cow milk	34	59	149	172	<1%	<1%
Cream, fresh	79	161	99	218	<1%	<1%
Cheese and curd	13,834	33,448	15,170	44,308	<1%	<1%

Source: United Nations FAO

What are US imports of ruminants or their products from Bulgaria?

The US does not import live animals from Bulgaria. The only relevant product imported from Bulgaria into the US was cheese and curd. More than one million kg. of cheese and curd products were imported by the US from Bulgaria during the first four months of 2006. During 2005, the US imported from Bulgaria over 3.6 million kg. of cheese and curd with a value of about 11.6 million dollars. Almost all of the cheese and curd that the US imports from Bulgaria is made of sheep milk. However, it should be noted that when properly processed, cheese made of sheep milk is not considered a risk product for *B. melitensis*. Following Italy and France, Bulgaria ranks third in the amount of this type of cheese that the US imports.

The US already has import restrictions on Bulgaria, due to the presence of foot and mouth disease (FMD). Meat and dairy products can be imported from FMD-endemic countries as long as the products are prepared or processed in a manner that will prevent disease transmission. Because US imports of sheep, goats, and cattle are regulated for FMD, these import restrictions also affect animals and animal products that have the potential to transmit brucellosis.

Source: World Trade Atlas; Global Trade Atlas; VS Import Tracking System

What are Canada and Mexico's imports of ruminants or ruminant products from Bulgaria?

Canadian imports of relevant ruminant products from Bulgaria are also limited to cheese and curd. Canada imported 209,401 kg. of cheese and curd valued at 1.08 million Canadian dollars during 2005. In 2006 (Jan – Apr), Canada imported just over 62,000 kg. of cheese and curd form Bulgaria. As is the case with US imports of Bulgarian cheese, the vast majority of the cheese and curd that Canada imported uses sheep milk as the source product. Mexico did not import any ruminants or products derived from ruminants from Bulgaria during 2005 and between January and April of 2006.

Source: World Trade Atlas

What is the level of passenger traffic arriving in the United States from Bulgaria?

A total of 16,565 residents of Bulgaria arrived on flights to the US during 2005.

As part of USDA, APHIS-PPQ's Agricultural Quarantine Inspection Monitoring system, 279 Bulgarian air passengers arriving in the US during fiscal year 2005 were sampled for items of agriculture interest. Of the sampled passengers, 14 were found to be carrying a combined total of 22 kg. of meat or cheese, potential risk items for brucellosis if not properly processed. None of the 14 passengers reported coming from a farm or planned to travel to a farm while in the US.

Source: Office of Travel & Tourism Industries, US Department of Commerce, USDA APHIS-PPQ Agricultural Quarantine Inspection databases

CEI's plans for follow up:

No follow-up is currently planned regarding the outbreak of *B. Melintensis* in Bulgaria. If you need more information or would like to comment on this worksheet, please contact Wolf Weber at (970) 494-7222 (wolf.d.weber@aphis.usda.gov) or Steven Sweeney at (970) 494-7267 (steven.j.sweeney@ahpis.usda.gov).

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