Internationally, the United States is among the lowest-cost pork producers in the world.

A barrier to expanding the U.S. pork export market is international concern over the perceived risk of Trichinella spiralis in U.S. swine. The lack of a program to address the perception of Trichinella infection in swine creates a negative impact on consumer perception and the pork export market.

In the past, Trichinella prevention focused on post-harvest methods including processing techniques (heating, curing, freezing and irradiating), pathogen detection methods in pork at slaughter (compression and digestion) and consumer food safety education programs.

Currently, pork producers implementing good production practices to reduce trichinae risk factors are not recognized. This year, the USDA proposed to administer and implement a voluntary National Trichinae Certification Program to ensure the quality and safety of pork products from the farm through slaughter.

Under the program, pork producers following certification criteria will be able to market their swine as "trichinae-safe", according to the USDA’s Draft Environmental Assessment.

**FSRIO Web site: A Resource for Food Safety Research Projects**

For detailed information and descriptions of trichinella-related research projects, search the Food Safety Research database at http://fsrio.nal.usda.gov/quicksearch.php

The ARS National Program 108 Food Safety Annual Report 2005:

http://www.ars.usda.gov/research/projects/projects.htm?ACCN_NO=409642

**GENERAL FACTS**

- There are five species and two types of the nematode parasite Trichinella. The species are: T. spiralis, T. nativa, T. britovi, T. nelsoni and Trichinella pseudospiralis. The types are: Trichinella T-5 and Trichinella T-6.

- Most human infections are caused by T. spiralis, followed by T. native and T. britovi.

- Trichinella species can infect swine, horses, and wild animals (foxes, wolves, bears, skunk, raccoons, rats, and other small mammals).

- All species can cause the human foodborne illness, Trichinellosis or Trichinosis, when raw or improperly cooked meats containing the larvae of the parasite are consumed. Clinical manifestations of the infection can vary from asymptomatic to moderate gastrointestinal distress to severe cardiac and neurologic complications.

- All stages of Trichinella’s life-cycle are completed in one host. Trichinella is transferred from one host to another by the ingestion of muscle tissue infected with the encysted larvae. The complete development takes between 17 to 21 days. Adult worms will continue to produce larvae for several weeks until they are finally expelled.

- Enzyme-Linked Immunosorbent Assay (ELISA) is a detection method that has been used to test pigs in both pre- and post-slaughter.

**RESEARCH AREAS**

Determine the role of cytokines in the development of neonatal immune systems to understand and stimulate appropriate protective mechanisms against T. spiralis.

Develop new methods to detect Trichinella pathogens in serum and meat juice samples. Provide educational materials to pork producers on risk reduction strategies.

Conduct quality control testing and training in Trichinella inspection methods approved by the EU and Russia.
This fact sheet is one of several information products developed by the Food Safety Research Information Office (FSRIO) at the USDA’s National Agricultural Library (NAL). Fact sheets on specific food safety research topics are available on the FSRIO web site at:

http://fsrio.nal.usda.gov/topics.php

FSRIO is a unique resource for the food safety research community. The program features a web site that serves as a gateway to research information and includes a database of federally-funded research projects. The database is available for researchers, policymakers, consumers and others to learn about research initiatives, and assist the government in assessing food safety research needs and priorities, thereby minimizing duplication of effort. FSRIO also provides a reference service at no charge.

Created by: Dietetic Intern, Cynthia Lechman
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Food Safety Research Information Office
10301 Baltimore Ave Room 304, Beltsville, MD 20705-2351
Phone: 301-504-7374     Fax: 301-504-7680
Email: fsrio@nal.usda.gov