

## PORK SAFETY

**Title:** Survival of North American Genotypes of *Trichinella* in Frozen Pork – NPB # 07-088

**Investigator:** Dolores Hill

**Institution:** USDA, ARS, ANRI, APDL

**Date Submitted:** 7/15/08

### Scientific Abstract:

We have examined the North American genotypes of *Trichinella* (*T. nativa* (T-2), *T. pseudospiralis* (T-4), *T. murrelli* (T-5), and *Trichinella* (T-6)) for susceptibility to freezing in pork using established parameters for control of *T. spiralis*. Pig infections with North American genotypes of *Trichinella* were established by oral inoculation of 10,000 infective larvae in 3 month old pigs of mixed sex and breed. Infected pigs were humanely sacrificed 60 days following infection. Muscles from the tongue, masseters, diaphragm, triceps, hams, neck, rump, and loins were ground, pooled, and mixed to assure even distribution of larvae in tissue samples. Worm burdens in collected tissues were assessed by pepsin-HCl digestion. Pork samples containing each species/genotype were chilled by placing 20 grams of each sample in heat-sealable pouches and pressing to a uniform thickness of 2mm to assure consistent freezing and thawing rates between samples. Pork samples were transferred to a constant temperature refrigerant bath and maintained according to the time temperature combinations described. Pork samples were removed and thawed in a 5°C bath prior to analysis by digestion. Larvae recovered by digestion of cold treated pork samples were inoculated into mice to determine larval infectivity. Results demonstrated that the freezing parameters described for *T. spiralis* (T-1) in pork products are sufficient to render pork safe with respect to *T. nativa*, *T. pseudospiralis*, *T. murrelli*, and *Trichinella* T-6. *Trichinella nativa* and *Trichinella* T-6 have extremely low infectivity for domestic pigs, and where that risk remains, freezing pork at proscribed temperatures is sufficient to destroy these larvae. Further, demonstrating the effectiveness of freezing methods against *T. murrelli*, the most common sylvatic genotype in the U.S., and *T. pseudospiralis*, closes this gap in our current knowledge. Demonstration of susceptibility to currently used freezing methods should eliminate concern about the safety of frozen pork products from these species in pork.

*These research results were submitted in fulfillment of checkoff funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer reviewed*

### For more information contact:

**National Pork Board, P.O. Box 9114, Des Moines, Iowa USA**

800-456-7675, **Fax:** 515-223-2646, **E-Mail:** [porkboard@porkboard.org](mailto:porkboard@porkboard.org), **Web:** <http://www.porkboard.org/>