

## PORK SAFETY

**Title:** National Animal Health Monitoring Survey for *Toxoplasma gondii* and *Trichinella spiralis* – NPB #12-121

**Investigator:** Dolores Hill

**Institution:** USDA, ARS, BARC, Animal Parasitic Diseases Laboratory

**Date Submitted:** 2/5/2014

### Scientific Abstract:

The United States Department of Agriculture (USDA) initiated the National Animal Health Monitoring System (NAHMS) in 1983 to collect, analyze, and disseminate data on animal health, management, and productivity in U.S. domestic livestock populations. The purpose of this study was to determine the national seroprevalence of *Toxoplasma gondii* and *Trichinella spiralis* in grower/finisher pigs using sera collected during the 5th National Swine Study (NAHMS Swine 2012). Sera was collected during the voluntary survey of 202 grower/finisher swine production sites located in 13 states accounting for ~90% of U.S. swine production (Iowa, Illinois, Indiana, Kansas, Minnesota, Missouri, Nebraska, North Carolina, Ohio, Oklahoma, Pennsylvania, South Dakota, and Texas). Sera and data on management practices at each surveyed site were collected beginning in July, 2012. Sera were analyzed for antibodies to *T. gondii* and *T. spiralis* by 2 commercial ELISA assays (Hill et al., 2010a; Hill et al., 2010b); all positive sera were retested by ELISA or by Western blot. A total of 5,688 sera were tested. *Toxoplasma* seroprevalence, as determined by ELISA testing, was found to be 3.79%, with a herd prevalence of 29.70%. A single sera was found to be positive for *Trichinella*; further investigation demonstrated that this sera was collected from a poorly managed farm where pigs were kept outdoors with potential access to wildlife. Increased risk of infection with *Toxoplasma* is associated with the presence of domestic cats, feral cats and wildlife, swine access to the outdoors, poor practices for disposal of swine carcasses, and the lack of barn-only boots in infected production sites. Increased risk of infection with *Trichinella* is known to be associated with access to wildlife and poor practices for disposal of swine carcasses. These results suggest that good production practices can be implemented to greatly reduce the risk of exposure to *Toxoplasma* and *Trichinella* in confinement-raised pigs, and that pigs with access to the outdoors are at greater risk for acquiring both *T. gondii* and *T. spiralis*.

---

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 • PO Box 9114 • Des Moines, IA 50306 USA • 800-456-7675 • Fax: 515-223-2646 • [pork.org](http://pork.org)

---