

CAHFSE Stage 1: Swine

Study Population

The study population will consist of 60 pork-production sites with weaned market hogs in selected counties of IA, NC, MN, MO, and TX. The pork-production sites will voluntarily participate in 8 quarterly visits between July 2003 and June 2005.

Each state will sign up 12 production sites. The sites in each state will be divided into 3 groups so that 4 sites will be visited during each month of the quarter. In each state, a total of 4 farms will be visited in a given month to conduct a brief questionnaire and collect blood and fecal samples. Once farms are assigned to a group, they should always remain in that group so that the same farms are contacted each quarter in the same month sequence. For example, farms visited in July will be visited in October, January, and April.

Site Selection Guidelines

Quota sampling will be used for selecting sites with respect to type of operation and facility type. Quotas are approximated from distribution of Swine 2000 sites within each state.

Site description	IA	MN	NC	TX	MO	All
Indoor, Frw-to-Finish	3	4	2	3	4	16
Outdoor, Frw-to-Finish	3	1	1	6	6	17
Indoor, Finish only	4	6	9	1	2	22
Outdoor, Finish only	2	1	0	2	0	5
Total	12	12	12	12	12	60

The quotas are intended as guidelines in order to avoid having just one production type represented in a state.

Counties in each state have been classified as high density, low density, and other eligible counties. At least 5 sites in each state must come from high-density counties, at least 4 sites should be from low-density counties; and the balance from any eligible county. No one county should contribute more than 3 sites, so the minimum number of counties involved in a state is 4.

Data Collection

The Annual Questionnaire will be the first questionnaire administered. It includes questions about management styles, breeding herd source, and facilities. This information will be asked again at the beginning of the second year of participation. The facility ID that is defined in section 4 will be used on all subsequent questionnaires.

The Quarterly questionnaire will be conducted once a quarter on all participating operations to update site inventory, weaned-pig source data, and building inventory.

It must be completed within 2 weeks of the biological collection and preferably on the same day as the biological sampling.

The Age-Group questionnaire will be conducted once a quarter on all participating operations when the blood and fecal samples are collected. Four distinct age groups will be sampled per site, ideally pigs 7, 12, 17, and 22+ weeks old (\pm 1 week). History of antibiotic use will be collected for each age group.

For each of the 4 age groups identified in the Age-Group Questionnaire, 10 ml of blood will be collected from 15 randomly selected pigs. Animals should be from a variety of pens on the site. Blood samples are shipped overnight on ice to the University of Minnesota for testing of *Lawsonia intracellularis* antibodies via ELISA.

Forty fecal samples will be collected from the floor of pens containing market pigs 22 weeks of age and older. Samples should be taken from a variety of pens or lots. In the typical confinement arrangement, 5 samples must be taken from each of eight pens. However, two or more sets of 5 samples can be collected from the same large pen or lot. Fecal samples are packed in ice packs (to keep chilled) and shipped overnight to ARS in Athens, Georgia, for culture of *Salmonella*, *Campylobacter*, generic *E. coli* and *Enterococci*. Isolates undergo further characterization to describe species/serotype and antimicrobial resistance patterns.