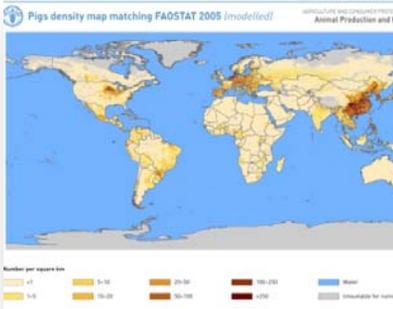


Scientists in the Reproduction Research Unit perform research dealing with Reproduction and Genomics of Livestock. Areas of research include:

- **Whole Genome Analysis of Swine**
- **Reproductive Efficiency of Swine**
- **Development of Genetic Markers for Pork Tenderness**
- **Fertility in Beef Cattle**



Whole Genome Analysis of Swine

Scientists in the RRU discovered approximately 20% of the genetic markers currently incorporated into the Illumina Swine SNP 60 beadchip, and contributed significantly to the International consortium that developed this valuable resource. The Swine SNP 60 chip is currently being used by swine researchers worldwide for whole genome analysis of swine for a variety of traits. We have also used the chip to genotype approximately 3000 pigs for genetic marker development for a variety of important growth, reproductive, behavioral and meat quality traits that have been collected by scientists in the RRU and other research units at USMARC.

Development of Genetic Markers for Pork Tenderness

Scientists in the RRU, with support from the National Pork Board, further developed genetic markers for pork tenderness based on the *Calpastatin* gene, a gene known to regulate the tenderization of meat. Results indicated that the newly developed markers were useful in diverse populations of swine. Improvement in pork tenderness has been identified by the National Pork Board as a priority research topic.



Reproductive Efficiency of Swine

We perform research in high priority topics of swine reproduction including sow productive lifetime, efficient gilt development, and piglet preweaning survival. We recently developed a simple, rapid and inexpensive method to measure the success of initiation of nursing between sows and piglets within 24 hours of birth. Failure to nurse contributes to piglet mortality and the method should be useful in developing and assessing management strategies to improve the nursing interaction.

Fertility in Beef Cattle

Physiologists in the RRU are investigating practical methods to improve and assess fertility in cattle. One promising approach is the use of ultrasound to count ovarian follicles. Our studies indicate that the number of follicles on the ovary is associated with pregnancy rates. Ultrasound is a noninvasive technique that could be used to screen replacement heifers entering the breeding herd.

