

2007 Review – ISU Swine Nutrition Management and Research, Ames, IA

A.S. Leaflet R2377

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Swine Nutrition Unit

History

The present facility was constructed in 1990-1991, providing opportunities to continue research programs that had previously taken place at the old facility south of campus. Two small buildings from that initial research site and an Intensive Growth unit constructed in 1992 have also been incorporated into the overall research program in Swine Nutrition at Iowa State University.

Farm Area and Land Use

The main research unit occupies 20 acres in the approximate center of a 320 acre parcel of land, most of which is also owned by the university. Other than occasionally contributing small quantities of liquid waste as requested, the Swine Nutrition Management and Research Center (SNMRC) is not involved in the research programs conducted on the surrounding land.

Facilities

At the 1127 XL Ave location:

Production Facilities:

- 168-sow breeding and gestation unit
- 32-sow farrowing unit (4 rooms X 8 crates)
- 576 head nursery unit (4 rooms X 144 head/room)
- 300 head growing unit (60 pens X 5 head/pen)
- 300 head finishing unit (60 pens X 5 head/pen)
- 420 head finishing unit (28 pens X 15 head/pen)

Intensive Research Facilities:

- Animal surgery unit
- Metabolism pen unit (up to 24 head)
- 64 head growing room
- 48 head finishing room
- 32 pen nursery pig metabolism unit
- Laboratory facilities leased to USDA for excretion studies

Feed Preparation Facility

Maintenance and Support Facility

At the State Street location:

- 100 head intensive growth unit
- 40 pen growth unit

Most of the facilities have been constructed or extensively remodeled in the last 12-15 years and are in relatively good shape. A major factor concerning the main

facility on XL Avenue is that there is no provision for segregated production, a substantial deviation from current industry practices.

The XL Avenue facility continues to follow protocols designed to retain a high health status – shower-in and 24-hour downtime precautions. The National Swine Research and Information Center (NSRIC) continues to lease a significant portion of the Intensive Research section of this facility. Several of the projects undertaken in 2007 represent cooperative efforts between the Swine Research Center and the Animal Science Department.

Research Activities

Efficacy of antibiotic alternatives in treatment of post weaning diarrhea in pigs – Dr. Stahl/Sara Cutler

Obesity study with Ossebow pigs – Dr. Spurlock

Dietary Evaluation of Fat Sources – PUFA and Lard – Dr. Spurlock

Utilization of crude glycerin in growing-finishing pigs: Impact on performance, carcass composition and meat quality – Dr. Kerr

Effect of adaptation to dietary fiber on nitrogen and energy utilization in finishing pigs – Dr. Kerr/Dr. Weber/Dr. Zeimer

Impact of genetic source and dietary fiber on performance and nutrient metabolism in nursery, growing and finishing pigs – Dr. Weber/Dr. Kerr

Impact of inert markers on nitrogen and energy balance, and gastrointestinal microbial ecology, in pigs – Dr. Kerr/Dr. Weber/Dr. Zeimer

Impact of dietary sulfur on pig performance and intestinal inflammation – Dr. Kerr/Dr. Weber

Mineral balances of diverse swine genetic sources as affected by dietary phosphorus levels – Dr. Stahl

Effect of genetics and nutrition on bone metabolism – Dr. Stahl

Oxidized biomarkers in blood of pigs – Dr. Stahly

Education and Demonstration Activities

Provide pigs at various stages of development for Swine Production Systems Management, AnSci 425.