

## 2008 Review – ISU Swine Nutrition Management and Research, Ames, IA

### A.S. Leaflet R2479

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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. Several of the projects undertaken in 2008 represent cooperative efforts between the National Swine Research and Information Center (NSRIC) and the Animal Science Department.

#### Research Activities

Dietary sulfur impacts on pig performance and intestinal inflammation – Dr. Kerr

Variation in metabolizable energy due to source of crude glycerin – Dr. Kerr

Variation in metabolizable energy of corn co-products in growing swine – Dr. Kerr

Evaluation of commercially available enzymes on nutrient digestibility of swine diets containing DDGS – Dr. Kerr

Evaluation of the response of growing pigs to diets containing increasing levels of corn fiber – Dr. Weber

Molecular pathways involved in beta adrenergic enhanced muscle growth: Relationship to meat production – Dr. Reecy

Metabolic effects of two fiber types in growing pigs – Dr. Weber

Feeding bioenergy co-products to growing pigs – Dr. Honeyman

Validation of the startle test, approach test and novel object test as measures of fear/anxiety in pigs – Drs. Johnson and Millman

#### Education and Demonstration Activities

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