

# Alternative Winter Farrowing Demonstration: A Progress Report

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## Introduction

Development of systems enabling producers to capture premiums offered by niche markets is of great interest to many Iowa farmers. Of key concern is a winter farrowing system that is both economical to operate and meets the criteria of natural pork buyers. This report details the results from the alternative winter farrowing system demonstrated at the ISU Allee Demonstration Farm near Newell during the winter of 2002/2003.

## Materials and Methods

In 2002, a 62 ft long, 150,000 Btu/hr radiant tube heater was purchased for \$2,306. The heater was installed in an existing 30 ft × 80 ft lean-to of a pole barn on the Allee Demonstration Farm near Newell. The lean-to has a concrete floor and has 10 ft insulated hinged doors on both ends. It is on the north side of the 80 ft × 60 ft pole barn that is oriented east to west. Insulation is one inch of foam board along the roof and exterior walls. The highest point of the lean-to ceiling at the southern end is 14 ft. It then slopes to a height of 9 ft. The radiant heater is set 4.5 ft from the southern wall, and 2.5 ft from the ceiling. Deflector shields attached to the tube protect the wooden rafters of the lean-to and direct the heat toward the floor.

Twenty 6 ft × 7 ft plywood, modified A-frame farrowing huts designed for outdoor farrowing are set-up in a double row down the center of the lean-to (Figure 1). The backs are set parallel

with a 3 ft creep area between the two rows. The lower backs of the huts are removed for a creep area. Heat lamps (250 W) are placed over the creep areas to create a warmer microclimate. As piglets reach 10-14 days of age, the partitions in the creep area are removed and a creep feeder is added. Six-inch-tall wooden barriers are added across the doorway of the huts and are used until piglets reach 7-10 days of age. Two pens, consisting of ten farrowing huts each, fit into the building space and allow for adequate alleyways (Figure 1). Sows are floor fed once a day by hand with free access to heated automatic nipple waterers in an unheated but enclosed area in the main shed. All huts and creep areas are bedded with wood chips and straw as needed. Dunging generally occurs in the alleys. Alleys are scraped daily to minimize manure build-up. Piglets are weaned at 5 weeks by removing the sows. Young pigs then remain in the farrowing room for an additional 1-3 weeks before being moved to deep-bedded hoop barns for finishing. Approximately 21 hours/group is spent removing huts, cleaning the barn, and re-setting the huts and creep areas.

## Results and Discussion

With the radiant heat, sow and pig comfort was very high and working conditions were excellent. In the winter of 2002/2003, 36 litters were farrowed in this facility. A total of 293 pigs were weaned for an average of 8.14 pigs/litter. To maintain room temperature near 50°F, 1150 gallons of LP gas were used. With LP gas costs of \$0.90/gallon and electrical costs at \$0.08/kwh, the total energy expense for producing those 293 pigs was \$4.94/pig weaned.

The arrangement of the huts and orientation of the heat sources combine to create an appropriate, warmer microclimate for the young pigs while maintaining a cooler zone for the

sows. Crushing occurrence resulting from restless and uncomfortable sows is thus reduced. A warm microclimate in conjunction with protection from sow crushing is critical to the success of the system. These results are comparable to ISU Swine Enterprise Records for the top one-third of operations, based on profitability, for farrow-to-finish producers.

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Figure 1. Pasture huts with radiant tube heater at ISU Allee Demonstration Farm, Newell, IA.

