

## Northeast Iowa Community Based Dairy Foundation Pre-Weaned Calf Center: Design and First Year Results

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#### Summary and Implications

A first of its kind ventilation design was tried on the new 30' x 136' calf barn at the Northeast Iowa Community Based Dairy Foundation Dairy Center at Calmar. It has capacity for 60 individual calf pens. The two 30 head calf rooms are separated in the middle with a feed room which is preheated. The ventilation design is 5 ft high curtains for summer on both long sides and a fresh air only supply polytube for winter and mild weather with a 12" variable speed fan to inflate it and another 12" variable speed fan to exhaust the room air. The air exits the six o'clock hole (bottom) positions from the overhead polytube instead of the traditional 9 and 3 o'clock positions. The un-insulated curtains are fixed in cold weather so they do not operate. The feed room which has an insulated ceiling

uses self-adjusting ceiling air inlets and a heater to maintain a minimum temperature of 45°F. The calf rooms have a 1/4 inch thick foil insulation under the metal roof to minimize dripping. There is not a ceiling in these rooms. The average capacity of the room has been 20 calves. Geotextile fabric is placed over the pea rock calf pen base which has a 4" drain tile under the pea rock that goes to an outside sealed tank. Straw bedding is placed on the geotextile fabric. Jennifer Bentley has run the calf barn this first year with mortality rates under 1% which indicates good management and a ventilation system design which is working well. The calf breeds vary from Jersey to Brown Swiss to Holstein.

This new ventilation design will help a lot of dairymen who house calves in sheds with sidewall openings for summer ventilation. The winter and mild weather time period in the past has caused health challenges which this new design can alleviate.



Figure 1. Open house on new calf barn.



Figure 2. Straw is on geotextile above pea gravel.