



# NCR-SARE Grant Remodeling Project 2012-2014

# Sustainable Straw Based Animal Welfare Friendly Growing Unit For Hogs

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Wabasso, MN

# 240 acre crop and livestock farm

## LIVESTOCK:

- Farrow to finish hog operation. Sells finishers to Niman Ranch.
- Beef Cow/calf, using rotational grazing of pastures.

## CROPS:

- corn, beans, alfalfa, grass hay, pasture,
- oats, wheat, and also have CRP

# Farming Practices:

- Rotational grazing of cows.
- In the 5th year of a CSP contract for rotational grazing, pasture watering system that includes wildlife escape, nitrogen management, resource conservation crop rotation, and cover crops to scavenge nitrogen.
- Fenced in 160 acres and set up grazing paddocks on 40 acres and year-around watering system.
- Living snow fence on the farm in 1997.
- In 2001, I modified an existing pole barn into a deep bedded sow and piglet nursery.
- After the hog market collapse of 1998, I remodeled my existing raised crate farrowing barn into a deep straw farrowing barn.

After becoming informed, I decided that raising hogs sustainably and having a specialized market through Niman Ranch was the approach that I wanted to take.

This presentation is about converting a nursery/ growing confinement building, with a pit, into a deep-bedded growing unit that meets Niman Ranch standards for improved animal welfare, while utilizing existing resources.



- I was awarded this grant on the basis of demonstrating that a 24X64 confinement building with a partial pit could successfully be converted to an animal welfare-friendly straw system that can house pigs in a healthy environment during their initial growing phase.



# Project Goals

- (1) Renovate an existing 24 by 64 foot confinement building with a partial pit that would make the building suitable as a straw based animal welfare friendly growing unit.
- (2) Look at pig performance and pig flow for the entire hog operation.
- (3) Design the building to be easy for cleanout.
- (4) Ensure good air quality in the building that exceeds its previous use as a confinement unit.
- (5) Have a pleasant atmosphere to work in after the remodel.
- (6) Have a space and pen(s) designed to address sick or injured pigs.

In addition...

I wanted to end up with a multifunctional building, one which was easy to clean, had less of an odor issue, and was not so labor-intensive.

# **The Outside**

**(facing south and east)**

- Newly installed windows—natural lighting!

Sept 2012



Nov 1, 2012



Sept 2012

New sliding  
door in progress  
(facing east)



Nov 1 2012

New sliding door and  
cement platform completed  
(facing east)



**Bulk bins**  
**(facing south)**

Nov 8, 2013



Nov 11, 2013



Jan, 2014

**East side of nursery**  
**(inside)**

Sept 2012

(Picture of old interior)



Sept 2012



Construction of 8' wall dividing door between east and west rooms.

Nov 1 2012

## New cement platforms for feeders

Having 2/3 of the  
slats capped  
improved air quality.

Capping slats with  
2 in. of cement  
(U of M consulted)



Nov 8, 2013

Insulation board beneath cement



Also reinsulated the  
ceiling

Nov 1 2012

East side slats for water drainage.



- East side

Nov 8, 2013



Jan 2, 2014



- Note: 8X8 slatted area (major dunging area)

# Jan 2, 2014

- Note: light durable
- gating



Jan 2, 2014





# Jan 6, 2014

- Note:  
modified feed system



Jan 6, 2014



Note:  
placement of  
the heater

**West side of nursery**  
**(inside)**

Nov 1, 2012



Nov 8, 2013

- West side
- Raised platform with steps



- West side

Nov 8, 2013



- West side

Nov 8, 2013



- West side

Nov 8, 2013



- West side

Nov 8, 2013

Placement of the heater is incorrect because it is blowing heat away from the bedded area, when in fact the principle is to blow heat into the bedded area



# Slide 36

- The placement of the plastic pipe at the top of the steps is meant to prevent belly ruptures when pigs are going between the bedded area and the slated area.
- The concept behind the raised steps is to prevent bedding from getting into the slated area.
- Capped half of pit using 5-6 inches of cement using rerod spaced apart every 6 inches to support skidsteer weight.  
(U of M consulted)

- West side

Nov 11, 2013



- West side Nov 11, 2013



- West side

Water spill area

Nov 8



Nov 11



Jan 2014



- West side Painting!



Feb 11

(More painting)

Feb 13





- West side February 2014



- West side



- West side



- West side





- West side



Individual Pens for Sick or Injured Pigs



Another View of Sick/Injured Pig Area







Materials recycled/used from 4 other hog projects







# Building Issues and Response

(1) Wanted to use the pit in both rooms but didn't want straw to end up in the pits, accomplished that with fencing and raised access pads to keep straw out of the pit.

(2) Wanted the major dunging to occur in the slatted area, accomplished that by water placement in the slatted areas kept.

(3) Wanted good air quality, accomplished that by capping 2/3 of the slats and good variable speed pit fans

(4) Wanted a pleasant atmosphere to work in, accomplished that by putting in windows and painting.

(5) Wanted easy clean out, accomplished that by making skid loader access for dry straw manure

(6) Wanted a treatment area for sick or injured pigs, accomplished that by special small pen designed for that.

# Results

- (1) Now suitable as a straw based animal welfare friendly unit.
- (2) Two feed trials showed improved pig performance in the building, using 40% less feed per pound of gain compared to pigs in this weight category fed outside.
- (3) Easy to clean because the pigs can be gated into the feeding area during clean out. The gating is portable, light, and easy to move.
- (4) Air quality in the building is superior to when it was previously used as a pig confinement unit. The audit team for both Niman Ranch and Chipotle thought it was exceptional. Capping 2/3rds of the pit was a main factor in improving air quality.
- (5) The atmosphere in the building after the remodel is pleasant, windows installation made an exceptional difference. The dungeon effect is gone.
- (6) Having a sick and injured pen area makes the facility easy to deal with for those animals.



Any questions?

# Thank you!

Paul Sobocinski's SARE project number is FNC12-890, “Sustainable Straw Based Animal Welfare Friendly Growing Unit for Hogs” The full report can be found at [www.sare.org](http://www.sare.org) under Project reports (enter FNC12-890 in the search terms).

