TIPS AND TRICKS FOR SEASONAL USE OF COMPOST PACK BARNS
Compost Bedded Pack Barn Concept

- Concept developed by Virginia dairy farmers
- Loose-housing with large, open resting area
- Potentially improved cow comfort
- Not your grandfather’s bedded pack barn!
- Intensively managed compost process
- Compost temperature can dry bedding
COMPOST BEDDED PACK BARN DESIGN

Janni et al., 2007
WHY COMPOST BARNs MAKE SENSE IN THE SOUTH

- Short winters
- Long summers
- Access to wood byproduct
- Smaller farms
- Lower investment
Comfortable Resting Surface
Easy to lay down or rise from resting without restrictions associated with freestall loops
Cows of different breeds and sizes can be housed together easily.
NATURAL COW BEHAVIOR
Cows exhibit heat well because of improved footing compared to concrete.
When managed properly, compost bedded pack barns provide a dry resting surface for cows resulting in clean cows and udders.
Facility Transition Case Study

Eckelkamp et al., 2014
KEYS TO MANAGING A CBP BARN

- Facility Design
- Effective Composting
- Adequate Ventilation
- Frequent Stirring
- Stocking Density
PACK MANAGEMENT

- 1.5 to 2 feet of bedding to start, may take 2-4 semi-loads of sawdust
- New bedding (2-8”) added when pack starts looking moist
- New bedding added every 1-8 weeks (more when humid or wet and in winter)
- Packs cleaned 1-2 times per year (fall & spring)
- Leave 6-12” (top layer) of old material to help start microbial activity
AERATION

- When cows are out of the barn during milking
- Start as soon as new sawdust is added
- Aerate at least 10-12”
Stirring Equipment Examples
Stirring Equipment Examples
Sweeps or Shovels Increase Mixing
Roto-tillers break up clumps of bedding material
Uniform Bedding with Roto-Tiller
Steam is Good But Doesn’t Mean Pack is Composting
Stirring in multiple directions or in circles increases air infiltration and helps break up clumps
Too many posts within the barn can make pack stirring difficult
Heavy Tractors Compact Bedding Material
MANAGEMENT CHECKS

- Temperature: 110 to 150 °F or “just hot enough you don’t want to touch it”
- Moisture: 45 to 55% or can you form a ball without too much water
- Fluffiness: subjective (looking for give in bedding as you walk across it)
- Distribution of cows within barn
- Dirty cows (next to last resort)
- SCC or clinical mastitis (last resort)
Temperature Monitoring

Example of compost heating well with high temperature and dry material.

Example of compost that is too wet with insufficient temperature.

Example of compost heating well with high temperature and dry material.

Example of compost that is too dry with insufficient temperature.
A dedicated thermometer, easily accessible within the barn, is recommended.
Dry, Fluffy Compost
High moisture, clumps, lack of uniformity
2011 COMPOST STUDY

- 43 Kentucky farms (51 barns)
- October 2010 to March 2011
- Compost samples collected from 9 equally distributed locations throughout each barn to produce a composite sample
- Producer questionnaire
- DHIA data
PRODUCER CITED BENEFITS OF COMPOST BEDDED PACK BARNs

- Improved cow comfort (n = 28)
- Improved cow cleanliness (n = 14)
- Low maintenance (n = 11)
- Good for heifers, lame, fresh, problem, and old cows (n = 10)
- Natural resting position (no stalls) (n = 9)
- Improved feet and legs (n = 8)
- Proximity to parlor (compared to pasture) (n = 8)
- Decreased SCC (n = 6)
<table>
<thead>
<tr>
<th>Benefit</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased heat detection</td>
<td>6</td>
</tr>
<tr>
<td>Ease of manure handling</td>
<td>3</td>
</tr>
<tr>
<td>Increased dry matter intake (compared to pasture)</td>
<td>3</td>
</tr>
<tr>
<td>Increased production</td>
<td>3</td>
</tr>
<tr>
<td>Increased longevity</td>
<td>3</td>
</tr>
<tr>
<td>Fewer leg and teat injuries</td>
<td>2</td>
</tr>
<tr>
<td>Minimizes time standing on concrete</td>
<td>2</td>
</tr>
</tbody>
</table>
SOMATIC CELL COUNT

![Bar chart showing somatic cell counts in primary and special housing categories before and after intervention.]

- **Primary Housing Category**
  - Before: 323,692 cells/mL
  - After: 292,146 cells/mL

- **Special Housing Category**
  - Before: 252,859 cells/mL
  - After: 299,577 cells/mL

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Kentucky mean DHIA SCC = 313,000 cells/mL (Norman et al., 2010)

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1Primary housing = CBP acts as primary housing facility
Special housing = CBP houses portion of herd, typically lame, fresh, or sick cows
Changes in productive parameters for primary housing farms before and after moving into a CBP

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before(^1)</th>
<th>Transition(^2)</th>
<th>After(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily milk production, lbs</td>
<td>64.5 ± 0.6(^a)</td>
<td>66.2 ± 0.6(^{ab})</td>
<td>67.5 ± 0.6(^b)</td>
</tr>
<tr>
<td>Rolling herd average, lbs</td>
<td>19,661 ± 174(^a)</td>
<td>20,227 ± 161(^b)</td>
<td>20,687 ± 163(^b)</td>
</tr>
<tr>
<td>SCC, cells/mL</td>
<td>411,230 ± 20,209(^a)</td>
<td>305,410 ± 19,704(^b)</td>
<td>275,510 ± 20,080(^b)</td>
</tr>
</tbody>
</table>

\(^1\)Before represents the 12 m before moving into the CBP  
\(^2\)Transition represents the 12 m after moving into the CBP  
\(^3\)After represents the 13 to 24 m after moving into the CBP  
\(^4\)Different subscripts within a row denote a significant difference (\(P < 0.05\))
Culling rate before and after moving into a CBP barn used as primary housing

Calculated using 12 months before move in and 6 to 12 months after move in.
SCRAPING FREQUENCY EFFECT ON HYGIENE

Hygiene Score

Scraping Frequency (Times/Day)

1X

2.51

2X

2.05

P = 0.0086
Hygiene depends on management!
Four hygiene categories (Cook, 2007)

- 1: clean, little or no evidence of manure
- 2: clean, only slight manure splashing
- 3: dirty, distinct pieces of manure
- 4: filthy, confluent pieces of manure

At least 50 cows per barn
- If fewer than 50 cows, every cow was scored

Cows randomly selected based on tag number (i.e. multiples of 3, even tag number)
Hygiene Score Relationships

Predicted Hygiene Score and Ambient Temperature

Predicted Hygiene Score and Pack Moisture

Predicted Hygiene Score and Mean of Surface and 10.2 cm Pack Temperatures
HYGIENE

- Heat generated by composting process dries bedding material creating a drier lying surface.
- Drier packs decrease hygiene score which may reduce exposure to mastitis pathogens.
- Effective composting more critical to cow hygiene during winter.
# Bacteria Levels

<table>
<thead>
<tr>
<th>Bacteria</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em></td>
<td>43</td>
<td>$13.31 \log_{10} \text{cfu/g}$</td>
<td>1.44</td>
</tr>
<tr>
<td>Coliform</td>
<td>43</td>
<td>$14.07 \log_{10} \text{cfu/g}$</td>
<td>1.30</td>
</tr>
<tr>
<td>Streptococcal species</td>
<td>43</td>
<td>$16.04 \log_{10} \text{cfu/g}$</td>
<td>1.63</td>
</tr>
<tr>
<td>Staphylococcal species</td>
<td>43</td>
<td>$17.54 \log_{10} \text{cfu/g}$</td>
<td>1.09</td>
</tr>
</tbody>
</table>
Bacteria load high in all compost bedded packs.

Coliform and Staphylococcal species seem to thrive in optimal composting conditions.

Streptococcal species may be more susceptible to composting heat.

Bacteria likely flourish in warmer ambient conditions.
Managing the CBP moisture and temperature can improve cow hygiene, which may help in the prevention of mastitis.

Each bacteria acts differently in the composting environment (Streptococcal species most affected).

Mechanism for reduced SCC in CBP cannot be explained by bacteria content:

- Dry resting surface
- Immune function???
- Clinical mastitis incidence and milk culture study needed
## RECOMMENDED FACILITY CHANGES

<table>
<thead>
<tr>
<th>Change</th>
<th>Count (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase size or capacity of the barn</td>
<td>15</td>
</tr>
<tr>
<td>Higher sidewalls and improved ventilation</td>
<td>12</td>
</tr>
<tr>
<td>Add a retaining wall</td>
<td>6</td>
</tr>
<tr>
<td>Add Curtains</td>
<td>5</td>
</tr>
<tr>
<td>More fans</td>
<td>5</td>
</tr>
<tr>
<td>Larger ridge vent</td>
<td>5</td>
</tr>
<tr>
<td>No posts in pack</td>
<td>4</td>
</tr>
<tr>
<td>Change number or location of waterers</td>
<td>4</td>
</tr>
<tr>
<td>Change location or size of feed bunk</td>
<td>4</td>
</tr>
<tr>
<td>Length of overhang or eaves</td>
<td>3</td>
</tr>
</tbody>
</table>
### INVESTMENT COSTS

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Barns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn cost</td>
<td>$85,362</td>
<td>$10,900</td>
<td>$300,000</td>
</tr>
<tr>
<td>Cost/cow @ 100 sqft/cow</td>
<td>$855</td>
<td>$215</td>
<td>$1,875</td>
</tr>
<tr>
<td><strong>Barns with Attached Feed Bunk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn cost</td>
<td>$103,729</td>
<td>$30,000</td>
<td>$300,000</td>
</tr>
<tr>
<td>Cost/cow @ 100 sqft/cow</td>
<td>$1,051</td>
<td>$421</td>
<td>$1,876</td>
</tr>
<tr>
<td><strong>Barns without Attached Feed Bunk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn cost</td>
<td>$51,454</td>
<td>$10,900</td>
<td>$155,000</td>
</tr>
<tr>
<td>Cost/cow @ 100 sqft/cow</td>
<td>$493</td>
<td>$196</td>
<td>$833</td>
</tr>
</tbody>
</table>
DAILY BEDDING COSTS

Cost per Cow per Day

- Summer: $0.30
- Winter: $0.44

Minimum = $0.01  Maximum = $1.44
University of Kentucky
New Dairy Housing Facility Investment Analysis Dashboard

Created By: Randi Black and Dr. Jeffrey Bewley
Contact: rablac3.com or jeffrey.bewley@uky.edu

This dashboard has been developed as a decision support tool for dairy farmers considering building a new dairy housing facility using their personal situation and housing goals. Everything in this dashboard is changable, allowing parameters to be set to those values appropriate for a particular situation or different from the default values. However, default values are those found in scientific literature or from expert opinion and can be used in situations when a value is not available for the farmer’s personal situation.

The white buttons are located throughout the dashboard and can be used to better define a particular input or output in this dashboard. Simply roll the mouse over the button to obtain additional information.

The reset button on this page may be used to reset all values to the defaults.

http://www2.ca.uky.edu/afsdairy/DairyHousingInvestment
The full extent of benefits are not typically realized immediately. Indicate the percentage of the full amount of benefits that will be experienced in each year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75%</td>
</tr>
<tr>
<td>2</td>
<td>85%</td>
</tr>
<tr>
<td>3</td>
<td>100%</td>
</tr>
<tr>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>6</td>
<td>100%</td>
</tr>
<tr>
<td>7</td>
<td>100%</td>
</tr>
<tr>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>9</td>
<td>100%</td>
</tr>
<tr>
<td>10</td>
<td>100%</td>
</tr>
</tbody>
</table>

http://www2.ca.uky.edu/afsdairy/DairyHousingInvestment
Predicted Daily Increase in Production per Cow
- 5.8%

Predicted % Reduction in SCC
-33.0%

Predicted SCC
- 174,133

Predicted % Clinical Mastitis Cases
- 25.0%

Predicted Lameness Incidence Rate
- 12.0%
## Annual Milk Yield Revenue Change

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$44,456.68</td>
</tr>
<tr>
<td>Year 2</td>
<td>$50,384.24</td>
</tr>
<tr>
<td>Year 3</td>
<td>$59,275.57</td>
</tr>
<tr>
<td>Year 4</td>
<td>$59,275.57</td>
</tr>
<tr>
<td>Year 5</td>
<td>$59,275.57</td>
</tr>
<tr>
<td>Year 6</td>
<td>$59,275.57</td>
</tr>
<tr>
<td>Year 7</td>
<td>$59,275.57</td>
</tr>
<tr>
<td>Year 8</td>
<td>$59,275.57</td>
</tr>
<tr>
<td>Year 9</td>
<td>$59,275.57</td>
</tr>
<tr>
<td>Year 10</td>
<td>$59,275.57</td>
</tr>
</tbody>
</table>

## Annual SCC Bonus Revenue Change

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$12,162.00</td>
</tr>
<tr>
<td>Year 2</td>
<td>$12,255.30</td>
</tr>
<tr>
<td>Year 3</td>
<td>$12,395.25</td>
</tr>
<tr>
<td>Year 4</td>
<td>$12,395.25</td>
</tr>
<tr>
<td>Year 5</td>
<td>$12,395.25</td>
</tr>
<tr>
<td>Year 6</td>
<td>$12,395.25</td>
</tr>
<tr>
<td>Year 7</td>
<td>$12,395.25</td>
</tr>
<tr>
<td>Year 8</td>
<td>$12,395.25</td>
</tr>
<tr>
<td>Year 9</td>
<td>$12,395.25</td>
</tr>
<tr>
<td>Year 10</td>
<td>$12,395.25</td>
</tr>
</tbody>
</table>

## Annual Change in Lameness Treatment Cost

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$312.4</td>
</tr>
<tr>
<td>Year 2</td>
<td>$354.0</td>
</tr>
<tr>
<td>Year 3</td>
<td>$416.5</td>
</tr>
<tr>
<td>Year 4</td>
<td>$416.5</td>
</tr>
<tr>
<td>Year 5</td>
<td>$416.5</td>
</tr>
<tr>
<td>Year 6</td>
<td>$416.5</td>
</tr>
<tr>
<td>Year 7</td>
<td>$416.5</td>
</tr>
<tr>
<td>Year 8</td>
<td>$416.5</td>
</tr>
<tr>
<td>Year 9</td>
<td>$416.5</td>
</tr>
<tr>
<td>Year 10</td>
<td>$416.5</td>
</tr>
</tbody>
</table>

[Source: http://www2.ca.uky.edu/afsdairy/DairyHousingInvestment]
Compost Barn

Net Present Value: $87,002.52
Internal Rate of Return: 21%
Payback Period: 3.97 years
Breakeven Barn Price: $217,022.30

Mattress Freestall Barn

Net Present Value: $31,958.82
Internal Rate of Return: 11%
Payback Period: 5.72 years
Breakeven Barn Price: $230,666.72

Sand Freestall Barn

Net Present Value: $68,739.65
Internal Rate of Return: 17%
Payback Period: 4.49 years
Breakeven Barn Price: $212,673.55

http://www2.ca.uky.edu/afsdairy/DairyHousingInvestment
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herd Size (Including Dry Cows)</td>
<td>179 cows</td>
<td>NASS, 2012</td>
</tr>
<tr>
<td>Rolling Herd Average</td>
<td>21,300 lbs</td>
<td>NASS, 2012</td>
</tr>
<tr>
<td>Current Clinical Lameness Incidence Rate</td>
<td>17.4%</td>
<td>Olmos, 2009</td>
</tr>
</tbody>
</table>
## CURRENT HOUSING (PASTURE) DEFAULT VALUES

### FINANCIAL VALUES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Term Milk Price</td>
<td>$0.19/lb</td>
<td>Westhoff et al., 2012</td>
</tr>
<tr>
<td>Lactating Cow Feed Cost</td>
<td>$0.09/lb DM</td>
<td>FAPRI, 2012; Bailey and Ishler, 2008</td>
</tr>
<tr>
<td>Labor Cost</td>
<td>$10.00/hr.</td>
<td>Billikopf, 2009</td>
</tr>
<tr>
<td>Discount Rate</td>
<td>8.0%</td>
<td>Bewley et al., 2010</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>6.0%</td>
<td>Personal Communication</td>
</tr>
<tr>
<td>Tax Rate</td>
<td>30.8%</td>
<td>Personal Communication</td>
</tr>
<tr>
<td>Length of Loan</td>
<td>10 yr.</td>
<td>Model Assumption</td>
</tr>
</tbody>
</table>
## Comparison of Default Values Among Housing Systems

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Compost</th>
<th>Mattress Freestall</th>
<th>Sand Freestall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Barn</td>
<td>$1,050/cow Black et al., 2012</td>
<td>$1,950/stall Horner et al., 2007</td>
<td>$1,800/stall Horner et al., 2007</td>
</tr>
<tr>
<td>Cost of Bedding</td>
<td>$20.34/day</td>
<td>$19.31/day</td>
<td>$27.52/day</td>
</tr>
<tr>
<td>Predicted SCC</td>
<td>252,860 cells/mL Black et al., 2012</td>
<td>357,000 cells/mL USDA, 2012</td>
<td>272,000 cells/mL USDA, 2012</td>
</tr>
<tr>
<td>Predicted Lameness Incidence Rate</td>
<td>12.0% Black et al., 2012</td>
<td>30.3% Cook, 2003</td>
<td>19.8% Cook, 2003</td>
</tr>
</tbody>
</table>
INVESTMENT ANALYSIS – NET PRESENT VALUE

CBP = Compost bedded pack   FSM = Mattress freestall   FSS = Sand freestall

All input values held at defaults
INVESTMENT ANALYSIS – PAYBACK PERIOD

All input values held at defaults

CBP = Compost bedded pack  FSM = Mattress freestall  FSS = Sand freestall
DESIGN CONSIDERATIONS

- Site selection
  - Maximize natural ventilation (summer winds)
  - Slightly elevated (minimize runoff)
- Clay or concrete base
- Modified freestall barn designs
- Barn dimensions account for feed and water space
BUILDING DESIGN: NEW RECOMMENDATIONS

- Think about summer and winter as different systems
- Build for number of cows milking
- Consider milk production and cow size
- Start thinking about feed and water space early
- Packs must be stirred twice per day every day, no exceptions
- Green sawdust is OK (just use more of it)
- Use e.coli vaccines (J5, J-VAC, or ENDOVAC-BOVI)
• The system is unforgiving to overstocking

• Providing less than 100 square feet of resting area per cow is a recipe for disappointment

• The amount of moisture deposited through urine and manure is too much to overcome
Most winds come from the south

Long side of the barn should be oriented east-west to

- Minimizes the time with direct sunlight entering the barn (see diagrams below)
  - Maximizes natural ventilation in the summer

Of course, the lay of the land doesn’t always allow for correct orientation
Sun Angles for N-S Freestall - August 21st
40 Degrees North Latitude (Omaha - Springfield)

NOTE: Sidewall is 14' with a 139° opening due to 2' overhang

Brouk et al, 2001
Sun Angles for E-W Freestall - August 21st
40 Degrees North Latitude (Omaha - Springfield)

Brouk et al, 2001
Open Ridge, High Sidewalls
3” of opening (X) for every 10 feet of building width (minimum 12”)

McFarland et al, 2007
Overshot Ridge Less Desirable
• An overshot roof can provide reasonable air removal when the opening is high enough as depicted in these barns.

• However, good air removal only occurs when wind moves across the higher side.

• When wind moves toward the opening, the wind actually forces air back into the barn.
- 3” of opening (X) for every 10 feet of building width (minimum 12”)

McFarland et al, 2007
• High, open sidewalls like those depicted in the pictures above maximize cross ventilation

• A minimum of 14 feet of opening should remain between the top of the retaining wall and the bottom of the barn eave
Hoop structures don’t provide enough ventilation for cows or pack
A concrete retaining wall provides separation between the feed alley and the pack area (A) which is helpful in managing pack moisture. Additionally, on the outside of the barn (B), the retaining wall keeps bedding material within the barn.
Wide alleys (14 foot recommended) improve cow flow, minimize chances for cow injuries, and allow for easy access to feed and water.
Eave overhangs can help minimize the amount of wind, precipitation, and sunlight entering the barn. Overhangs should be 1/3 of the eave height.
Properly positioned fans help cool cows and dry bedding material.
High volume low speed fans (HVLS) have been added to many compost bedded pack barns. These fans distribute air well across a wide area.
Bunching can be a challenge without proper consideration of air and light flow.
Curtains Can Help in Winter
No access to water from pack
Adequate water access is critical. Most compost bedded pack barn do not meet the...
Wide Entrances and Entrances on Short End of Barn are Too Wet
To minimize this effect, multiple, build narrow entrances along the long side of the barn. Entrances should be spaced every 50 feet.
Dedicating a storage area for sawdust supplies helps keep bedding supplies dry and allows for stockpiling of bedding material for times of high demand or low supply.
WHY DON’T ALL PACKS WORK?

- Barn design flaws
- Stocking density (too many cows!)
- Material used (straw, cedar)
- Stirring frequency/depth
- Inadequate/ineffective stirring
- Starting pack in the winter
- No curtains in winter
COMPOST BARNs AND GRAZING OPERATIONS OPPORTUNITIES

- Lowers operating cost of compost barn
  - Less bedding
  - Less moisture deposited in barn
- Potentially lower investment cost without feed alley
- Potential performance improvements
  - Cow cooling in summer
  - Dry resting surface during wet weather
  - Protection from elements during winter
COMPOST BARNs AND GRAZING OPERATIONS CHALLENGES

- Keeping compost active
- Seasonal grazing may be challenging
- Start pack before weather cools off
- Need to continue stirring
- Possibly once per day without cows on pack
- Adding moisture during times of non-use may help
UK Compost Resources

Cooperative Extension Service - University of Kentucky College of Agriculture, Lexington

Compost-Bedded Pack Barns in Kentucky
Jeffrey M. Bewley, Animal and Food Sciences, and Joseph L. Taraba, Biosystems and Agricultural Engineering

Kentucky Compost-Bedded Pack Barn Project
Randi Black and Jeffrey Bewley, Animal and Food Sciences; Joe Taraba and George Day, Biosystems and Agricultural Engineering; and Flavio A. Damasceno, Agricultural Engineering, Federal University of Viçosa, Brazil

University of Kentucky
New Dairy Housing
Investment Analysis

The decision to build a housing facility is one that is not easy, nor is it to be taken lightly. This tool is to be used to help make that decision easier.

Choose between a new compost bedded pack barn and a new freestall barn using this simple to use net present value tool.

Use your current herd performance and management, coupled with predicted outcomes of the two housing facilities.

Based on a 10 year investment period and assumes barn has no salvage value.

Mouse over the white buttons for more information on an input or output.

Results not guaranteed. Calculations based on assumptions.