

# Do Cows Last Longer in Compost Barns?

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“My cows last longer in the compost barn” is a comment often made by dairy producers whose herds are housed in compost barns. Some dairy farmers provided DairyComp records for their herds, allowing us to look at culling rates in compost barns.

There are two objectives in this study. The first to compare the culling rates of herds in predominantly tie-stall barns with the culling rates when the herds are moved into compost barns. The second objective is to assess the economic value of changes in culling rates in moving into a compost barn.

The DairyComp records from seven farms were used in the analysis. We looked at three time periods relative to the compost dairy barn (CDB): 1) Up to 18 months prior to moving into the compost barn (Pre-CDB); 2) 1 to 12 months in the compost barn (Transition-CDB); and 3) 13 to 24 months in the compost barn (CDB).

Figure 1 shows the percent of the dairy cows by lactation: first lactation, second lactation and third or more lactation. Zero (0) on the bottom axis is when the herd moved into the compost barn. In the Pre-CDB period, on average 37% of the milking cows were first lactation and 35% were third lactation or older. In CDB period, on average 23% of the milking cows were first lactation and 39% were third lactation or older. There does appear to be a small increase in the percent of older cows in the milking herd.

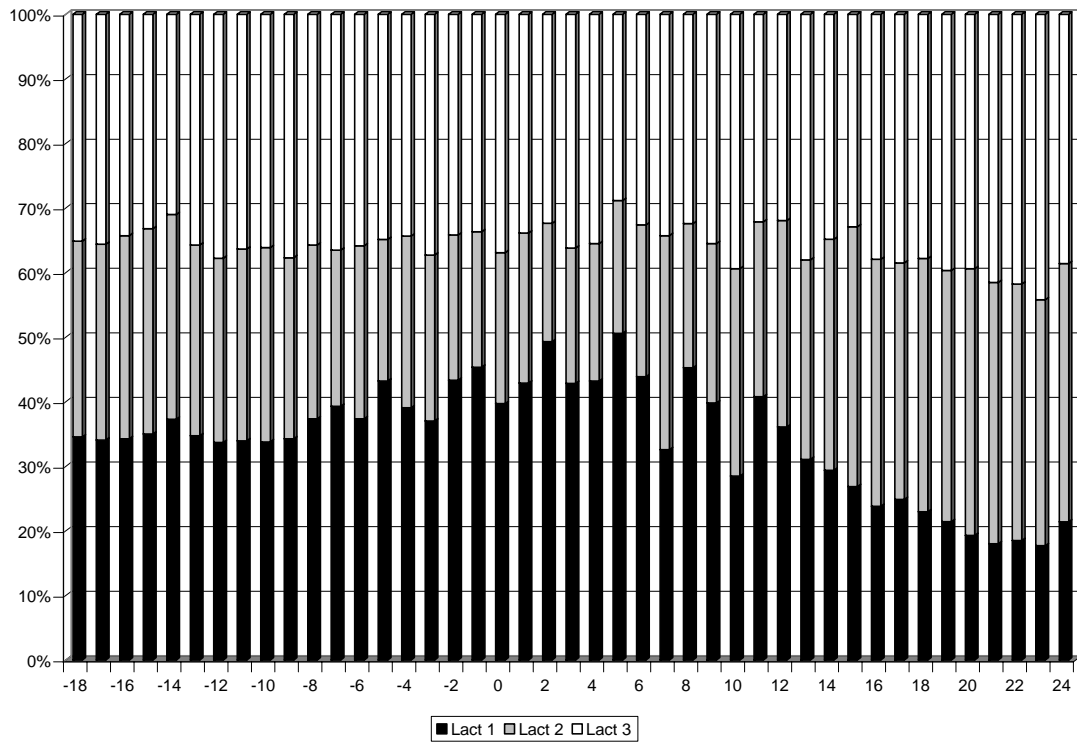


Figure 1. Herd composition.

Measuring culling or turnover can be challenging. In each of the three periods defined above, I calculated the number of lactating animals leaving the herd as a percentage of the number of animals freshening. I made no distinction between cows that were sold and cows that died. I calculated culling for first lactation heifers and older cows, defined as second lactation and older. If cows were lasting longer, I would expect to see fewer older cows leaving the herd. If fewer older cows were leaving the herd, I would expect more first lactation heifers to be leaving the herd if the dairy herd is not expanding. Culling is presented in Table 1.

**Table 1. Number of animals freshening and leaving the milking herd.**

	Number of animals freshened	Number of animals leaving the herd	Number leaving the herd as a percent of number freshened
<b>Pre-CDB</b>			
Heifers (1 <sup>st</sup> lactation)	302	55	18%
Cows (2 <sup>nd</sup> + lactation)	461	163	35%
<b>Transition-CDB</b>			
Heifers (1 <sup>st</sup> lactation)	168	37	22%
Cows (2 <sup>nd</sup> + lactation)	370	121	33%
<b>CDB</b>			
Heifers (1 <sup>st</sup> lactation)	116	23	20%
Cows (2 <sup>nd</sup> + lactation)	376	88	23%

Culling of older cows has declined from 35% to 23%. It is important to note the changes in milk production systems as producers moved to the compost barn. Most herds transitioned from tie-stall barns with pipelines to compost dairy barns with milk parlors and feeding TMRs. The reduction in culling most likely due to a combination of factors including the compost dairy barn.

Reducing culling or turnover provides opportunity to expand the herd internally or sell more cows for dairy purposes if expansion is not a goal. Assume a 100-cow herd. Reducing turnover of older cows from 35 to 25% means that 10 cows that are available to sell or 10 cows that do not need to be purchased if expanding. Assuming that the value of milk cows is \$1,650<sup>1</sup> means the additional 10 cows can be worth as much as \$16,500.

Bedding cost in compost barns is a substantial cost. It can run upwards of \$0.60/cow/day. Compare this to 2005 bedding costs \$0.06/cow/day<sup>2</sup> in a tie-stall barn and \$0.14/cow/day<sup>3</sup> in free stall barns. Table 2 provides a comparison of bedding costs of three housing systems. The difference in annual bedding cost between a tie-stall and compost barn is \$19,812. The difference in bedding cost between the free-stall and compost barn is \$16,699.

**Table 2. Estimated bedding costs in different housing systems.**

	Tie-stall	Free-stall	Compost
\$/cow/year	\$20.88	\$52.01	\$219.00
\$/cow/day	\$0.06	\$0.14	\$0.60
\$/year for 100 cows	\$2,088	\$5,201	\$21,900

The value of the reduced culling does not break-even with the increased bedding cost when moving from a tie-stall to a compost dairy barn. If we can expect a similar reduction in culling in moving from free-stall to compost barn, the improved culling could offset the increased bedding cost.

<sup>1</sup> NASS Agricultural Prices.

<sup>2</sup> University of Minnesota, Center for Farm Financial Management  
<http://www.finbin.umn.edu/FinB.dll/generate?Recl=81470>.

<sup>3</sup> University of Minnesota, Center for Farm Financial Management  
<http://www.finbin.umn.edu/FinB.dll/generate?Recl=81471>.