

## Milk Harvesting Costs

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The cost of harvesting milk can be broken into several categories. The typical categories are supplies (chlorine, soap, acid, towels, teat dip, hot water, etc.) that occur before, during, and after milking, labor costs, repair costs, and Investment costs (interest and depreciation on the investment in the milking system).

The investment required to convert from milking cows in stanchions to milking in some type of parlor very widely. The cost can be as low as \$25,000 for a double 8 flat-barn parlor in an existing barn to almost a million for a high-technology double 20 parlor with all the bells and whistles. This article will look at a range of parlors and will direct you to a web site where you can download the program that was used to do these calculations. After downloading the Excel spreadsheet you can then change any of the inputs to do a cost analysis with your site-specific information.

Table 1 show some possible parlors; their estimated cost, years of useful life, cows milked per hour, and number of operators required. The useful life of the flat-barn parlor was set at 5 years, the pit-parlor with used equipment at 10 years, and the parlor with new equipment at 15 years.

All the parlors except the cheapest have a “cow milked per hour” equal to 4 times the number of cows in a “turn.” The number of cows milked in a “turn” is the number of stalls in the parlor. The cheap flat-barn is assumed to only have the ability of 3.5-turns per hour.

**Table 1. Investment and capacity of various-sized parlors.**

	Flat-Barn milking facility Double 8	Mid-sized low-capital pit parlor Double 8 used equip	Lg. Basic- technology new parlor Double 12 new equip	Lg. Moderate technology new parlor Double 16 new equip	XL high - technology new parlor Double 20 new equip
Cost	\$ 25,000	\$ 75,000	\$ 300,000	\$ 650,000	\$ 900,000
Useful Life (Years)	<b>5</b>	<b>10</b>	15	15	15
Cows milked/hour	56	64	96	128	160
Operators required	1	1	1	1	1
Wage rate/hour	\$ 10.00	\$ 10.00	\$ 10.00	\$ 10.00	\$ 10.00
Pounds milk/cow/day	75	75	75	75	75

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For the initial analysis purposes, the herd size will vary from 300 to 857 cows. This is required in order to have the various parlors in operation 9 hours per day with 2 milkings per day. Also, an interest rate of 9.0% repair costs of 5.0%, the percentage of the herd dry is 16%, and 2 milking per day were used. Remember, if you would like to look at the results with other values just download the program from the web site listed at the end of the article.

Table 2 shows the costs comparison of 5 different parlor systems. The results show that the larger-more-cows per hour parlors increase the cost to harvest a hundredweight of milk. This occurred even though the herd size was increased so each parlor was used the same number of hours per day. In fact, the cost to harvest milk is approximately 50 percent more (\$0.58 versus \$0.90) per hundredweight in the highest cost parlor versus the lowest cost parlors (the flat barn parlor and the double-8 pit parlor with used equipment).

**Table 2. Same Hours of Operation with 2 time per day milking.**

<b>Herd Size</b>	<b>300</b>	<b>343</b>	<b>514</b>	<b>686</b>	<b>857</b>
Cows milked	252	288	432	576	720
Hours operated/day	9.0	9.0	9.0	9.0	9.0
Investment/cow	83	219	583	948	1,050
Investment/cwt	\$ 0.36	\$ 0.95	\$ 2.54	\$ 4.12	\$ 4.57
Investment Cost/cwt	\$ 0.09	\$ 0.14	\$ 0.28	\$ 0.46	\$ 0.51
Repair cost/cwt	\$ 0.02	\$ 0.05	\$ 0.13	\$ 0.21	\$ 0.23
Labor cost/cwt	\$ 0.48	\$ 0.42	\$ 0.28	\$ 0.21	\$ 0.17
<b>Total Cost/cwt</b>	<b>\$ 0.58</b>	<b>\$ 0.60</b>	<b>\$ 0.69</b>	<b>\$ 0.87</b>	<b>\$ 0.90</b>

Note: these are not the total costs of operating the parlor. These calculations assume other costs (chlorine, soap, acid, towels, teat dip, hot water, etc.) that occur before, during, and after milking are the same for all parlors.

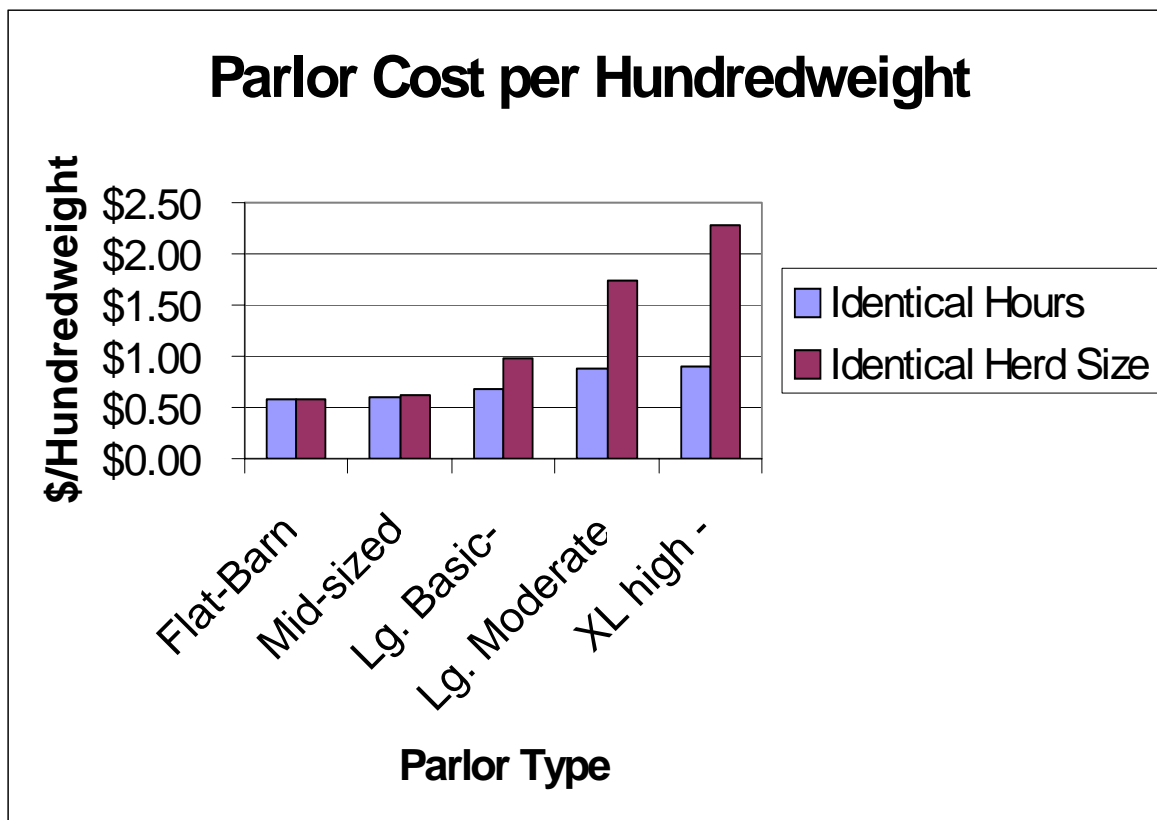
The other problem is a parlor may not be used to capacity. This is generally the case. Many managers are planning on milking a certain herd size, in the near future, but will build a parlor for a much larger herd size. This will cause the parlor to be used a less than an efficient number of hours per day, in the short run. The overbuilding of parlors is one of the major reasons for cash flow problems after an expansion. Managers who use their parlors 21 hours (7 hours per milking and 3 milkings per day) or 22 hours (11 hours per milking and 2 milkings per day) per day have the most efficient parlors. This means a double 8 can handle a herd in excess of 500 cows.

Table 3 shows what happens to costs when all the parlors milk the same number of cows each day. Note the cost of the highest cost parlor, X-large-high-technology, is over 3 times the cost of the low cost parlors.

**Table 3. Same Herd size with 2 time per day milking.**

Herd Size	300	300	300	300	300
Cows milked	252	252	252	252	252
<b>Hours operated/day</b>	<b>9.0</b>	<b>7.9</b>	<b>5.3</b>	<b>3.9</b>	<b>3.2</b>
Investment/cow	83	250	1,000	2,167	3,000
Investment/cwt	\$ 0.36	\$ 1.09	\$ 4.35	\$ 9.42	\$ 13.05
Investment Cost/cwt	\$ 0.09	\$ 0.16	\$ 0.49	\$ 1.05	\$ 1.46
Repair cost/cwt	\$ 0.02	\$ 0.05	\$ 0.22	\$ 0.47	\$ 0.65
Labor cost/cwt	\$ 0.48	\$ 0.42	\$ 0.28	\$ 0.21	\$ 0.17
<b>Total Cost/cwt</b>	<b>\$ 0.58</b>	<b>\$ 0.63</b>	<b>\$ 0.98</b>	<b>\$ 1.73</b>	<b>\$ 2.28</b>

Figure 1. Graph of Total Cost/Cwt from Tables 2 and 3



These calculation are available as a Excel spreadsheet on our homepage at: [WWW.WISC.EDU/dairy-profit/](http://WWW.WISC.EDU/dairy-profit/) then select "Software, Spreadsheets and CD-ROMs" and finally PARLOR.XLS The spreadsheet allows you to change the interest rate, the repair percentage, the number of cows in the herd, the cost of the parlor, the number of cows milked per hour, the milk per cow per day, etc.