Low-Cost Parlor Systems - Producer Survey

ISU Extension & Outreach Dairy Field Specialists
Jennifer Bentley
Leo Timms
Larry Tranel

ISU Extension & Outreach Farm and Agribusiness Specialist
Kristen Schulte
Producer Survey Response

- 18 producers responded
- Avg. installation age: 8.2 years
- Herd average: 54.3% increase
  - Before: 73 cows
  - After: 112 cows
- Average cost: $59,919
  - Includes building shell, parlor framework, and added milking equipment (lowest parlor built for $8,500)
Labor Efficiency

- Primary goal when installing a LCP
  - 2.44 hours of labor saved per day
  - Labor savings valued at $8,015/year
27.3% Decrease in Total Milking Labor

Milking Labor

Before LCP: 6.68
After LCP: 4.86

Hours of Milking Labor
43.8% Increase in Heat Detection

Heat Detection

- Before LCP: 0.16
- After LCP: 0.23

Hours of Heat Detection
32.5% & 17.6% Decrease in Manure Handling and Feed Labor

Skid steer scraping versus daily hauling with a barn cleaner

<table>
<thead>
<tr>
<th>Hours of Manure Handling</th>
<th>Hours of Daily Feed Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before LCP: 1.17</td>
<td>After LCP: 1.76</td>
</tr>
<tr>
<td></td>
<td>Before LCP: 0.79</td>
</tr>
</tbody>
</table>
Labor Efficiency

• Cows milked per labor hour
  – Increased from 25 to 47 cows
    • Some producers able to achieve the goal of 70 cows per labor hour including set-up and clean-up!

• Labor cost per hundredweight
  – Reduced from $1.83 to $0.95/cwt.

• Labor cost per cow
  – Reduced from $0.98 to $0.50 per cow

• If comparing milking labor savings at a constant herd size of 112 cows, savings would be equivalent to $16,373 annually.
  *actual reported labor savings is lower due to producers capitalizing on labor efficiency by increasing herd size while decreasing hours per milking.
Management Practices of Dairy Producers

Parlor type

- Built new facilities
- Used the parabone stall and remodeled existing barn

Cattle housing:
- 10: confinement
- 6: grazing
- 2: organic

18% Built new facilities
82% Used the parabone stall and remodeled existing barn
Management Practices of Dairy Producers

Management Practices

- **Freestall Housing***
  - Before LCP: 24%
  - After LCP: 78%

- **Skid Steer scraping***
  - Before LCP: 60%
  - After LCP: 100%

- **Sand bedding***
  - Before LCP: 100%
  - After LCP: 60%

*This change impacts the labor efficiency, possibly more than the LCP.
Milk Production and Quality

Milk Production, lbs/day

- Before LCP: 52
- After LCP: 60

Somatic Cell Count*

- Before LCP: 305,000
- After LCP: 207,000

*A change in housing system would presumably be a big factor in this difference.
Feeding Management

Before LCP | After LCP
---|---
TMR or PMR+grazing system | 50% | 83%
Component Feeding | 50% | 17%

IOWA STATE UNIVERSITY
Extension and Outreach
Healthy People. Environments. Economies.
Other Issues of Concern

• Reduced cull rate of 4%
• $7.52 per cow drop in electrical costs
• Water and chemical costs increased annually per cow by $0.23 and $0.27 respectively, possibly attributed to herd growth.
Satisfaction Index

• 100% of producers agree or strongly agree that:
  – The LCP has been a good personal, financial and management investment.
  – The LCP has improved cash flow.
  – The LCP has improved profitability.
  – The LCP has improved quality of life
    • By an average value of $23,818
Reasons for Installing a Low Cost Parlor System

1. Gain labor efficiency at a low cost (n=18)
   - Speeding up milking time, being able to reduce labor costs, and finding labor

2. Personal health and safety of milking (n=16)
   - Less wear on the body, making milking easier and less physically demanding

3. Ability to milk more cows and expand (n=7)
   - Not having to switch cows, being able to milk more cows in less time in order to expand

4. Extension advice and assistance (n=4)
   - Dairy Field Specialist’s resources, advice and encouragement

5. Desire to stay in dairy business (n=4)
   - Overcoming worn out facilities, a barn fire or moving to a new location
Investment Analysis

• Low annual investment cost due to parlor frame and stall work
  • Easily retrofitted, updated, or remodeled
• Annual investment cost assuming:
  – 15 year useful life:
    • $59.44 per cow or $0.32 per hundredweight
  – 10 year useful life:
    • $75.34 per cow or $0.41 per hundredweight
  – Total annual investment and labor cost:
    • $1.27/cwt. (15 yrs)--$1.37/cwt. (10 yrs)
Definition of LCP

• Can have different meanings to different people
  – Retrofit stall barn
  – Using own labor
  – New milking equipment
  – Average cost per stall: $2,521
    – Range ($542 - $4,667/stall)
Investment Analysis

• Payback period
  • Based on annual investment costs over the life, assuming a 15 year life
    – Based only on milking labor savings
      – 6.05 years
    – Range of investment cost* ($8,500-$150,000)
      • Payback range from 0.63-21.4 years based on initial cash investment and average labor savings.

*High labor efficiency and quick payback periods are possible with capital investment when LCP is kept low.
Summary

- LCP provided a positive quality of life, financial return and milking labor advantage over previous system.
  - Average of 54% more cows able to be milked with an average 2.44 less daily hours of labor.
  - Producers on average doubled their labor efficiency in number of cows milked per hour
  - Production increased 15% while SCC dropped 22.3%
  - Feeding and housing efficiencies were gained as well
  - Investment cost of LCP was $0.32/cwt. LCP allowed drop in labor cost of milking cows in half to $0.95/cwt for a total of $1.27/cwt.
    - (In certain situations, total cost of labor and investment <$1.00/cwt)

Bottom Line of LCP:
Cows and People like Them!