

Milk production costs: Actionable strategies that don't negatively impact the cows

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AT A GLANCE

Manage rising costs on the dairy farm by utilizing strategies such as focusing on interest on operating capital and opportunity costs of land, capital recovery, custom services, equipment breakdowns, fuel, lube, electricity usage and more.

In recent years, dairy farming costs have risen across several categories, posing challenges to farm profitability. However, not all costs are beyond a farmer's control. By focusing on specific actionable items, farmers can manage expenses effectively without negatively impacting cow health or milk production.

A recent analysis of dairy production costs from 2021 to 2023 reveals key areas where targeted strategies can help mitigate cost increases and improve operational efficiency. The costs of producing milk in the U.S. have increased significantly over the past few years, particularly in areas such as interest on operating capital, repairs and custom services. These rising expenses are forcing dairy farmers to make smarter decisions about where to focus their efforts to control costs without compromising the quality of their product or the health of their herd.

Figure 1 shows how much some individual items have increased between 2021 and 2023. While being aware of which costs have increased the most is important, even more critical is knowing which to tackle first since it hits your income harder.

Table 1 provides a comprehensive overview of the operating costs and total costs of production for dairy farming from 2021 to 2023, as reported by the USDA Economic Research Service (ERS). Among these expenses, feed stands out as the largest itemized cost, accounting for a substantial 77.2% of operating costs and 50.7% of total costs in 2023. This highlights the critical role that feed plays in the overall finances of dairy operations.

Given its significant impact on both cost structure and cow health, it is crucial to approach feed management with caution. While there may be opportunities for minor adjustments – such as optimizing feed additives or improving feed efficiency – care must be taken to ensure these changes do not negatively affect animal health or milk production. Any alterations in the feed strategy must be backed by data demonstrating clear benefits for the well-being of the cows, which is key to maintaining productivity and profitability on the farm.

Capital recovery of equipment

In 2023, capital recovery of equipment accounted for 17.2% of total costs of production, making it the second-largest expense after feed. Reducing these costs can significantly enhance financial performance. Strategies to manage capital recovery include addressing machinery depreciation, repairs and equipment acquisition through leasing, sharing equipment with neighboring farms and improving maintenance practices to extend equipment lifespan.

Although interest on operating capital saw the largest increase over the past three years, it only represented 1.6% of total costs in 2023. Therefore, focusing on capital recovery presents a more substantial opportunity for

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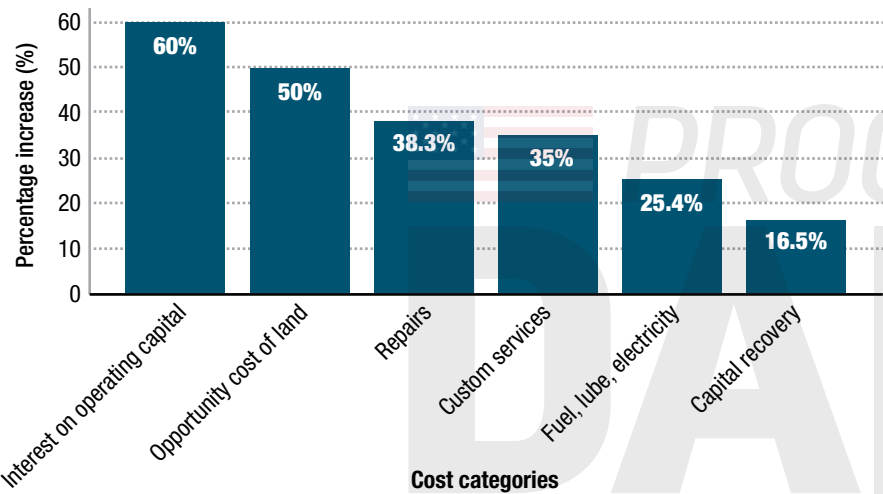
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FIGURE 1 Rising costs in dairy farming



cost reduction. Leasing instead of purchasing machinery can lower upfront costs and depreciation, while preventive maintenance helps prolong equipment life.

When it comes to tasks requiring expensive machinery, such as harvesting, farmers should weigh the benefits of outsourcing against the costs of handling these tasks in-house.

Custom services

This is the only itemized cost in Figure 1 that made it to the prioritized actionable items list. In 2023, custom services accounted for 3.14% of total costs, often encompassing outsourced tasks such as harvesting, manure handling or spraying. To manage these expenses effectively, one should shift as many tasks in-house as possible, reducing reliance on costly external providers. However, when outsourcing is necessary, negotiating better rates or scheduling services during off-peak seasons can help lower costs. It's also important to reassess which custom services are essential and consider eliminating noncritical ones to improve overall efficiency.

Given the significant price increases for custom services, including fieldwork, silage chopping and manure management, farmers need to explore alternatives. Investing in equipment can provide greater flexibility and reduce dependence on contractors, although this may come with higher upfront costs. For smaller farms, sharing equipment with neighboring farms can alleviate the financial burden of purchasing and maintaining machinery. Negotiating long-term contracts with service providers can secure better rates and protect against future price hikes.

Equipment repairs

Equipment repairs, which have risen nearly 38%, represent the most significant expense (around 3% of the total cost of production) of these three additional itemized costs. A well-planned maintenance schedule for machinery such as tractors and milking systems is essential for preventing costly breakdowns. Regular inspections, timely oil

changes and part replacements can identify minor issues, such as hydraulic leaks, before they worsen. Using diagnostic tools to monitor equipment performance minimizes repair costs. It is also crucial to train personnel effectively and avoid rushing them through tasks, as well-trained staff can greatly enhance equipment durability and efficiency.

Other costs

Fuel, lube and electricity accounted for 2.95% of total costs in 2023, making effective management of these expenses essential for reducing operating costs. To lower fuel consumption, farmers should optimize fuel efficiency through regular machinery maintenance, minimizing idle time and upgrading to more fuel-efficient equipment, such as Tier 4 tractors, which can improve savings by 10%-15%.

Enhancing energy efficiency by upgrading lighting to LEDs, using motion sensors and conducting energy audits can further reduce electricity use – potentially by up to 75% – while sealing barn air leaks and installing energy-efficient windows lowers heating and cooling costs, improving animal comfort.

Implementing variable rate technology (VRT) in field operations ensures optimal fuel consumption without sacrificing productivity. Timely maintenance practices, such as oil changes and proper tire inflation, prolong machinery life and enhance fuel efficiency.

Additionally, adopting energy management systems to monitor usage, shifting tasks to off-peak hours and optimizing ventilation systems can lead to significant savings. Using energy-efficient water heaters, automated milking and feeding systems, and maintaining refrigeration units also contribute to energy efficiency. Finally, minimizing phantom energy by unplugging unused equipment and utilizing smart thermostats can further enhance overall efficiency.

What about the most significant itemized cost increases?

Once the four itemized costs with the largest impact on the milk

TABLE 1 Milk cost of production per hundredweight (CWT) – U.S. average

Category	2021	2022	2023
Purchased feed	7.99	9.92	8.79
Homegrown harvested feed	3.91	4.82	4.73
Grazed feed	0.03	0.03	0.03
Total feed costs	11.93	14.77	13.56
Veterinary and medicine	0.62	0.70	0.70
Bedding and litter	0.18	0.20	0.21
Marketing	0.16	0.18	0.18
Custom services	0.71	0.80	0.84
Fuel, lube and electricity	0.63	0.91	0.79
Repairs	0.70	0.77	0.80
Other, operating costs	0.01	0.01	0.01
Interest in operating capital	0.00	0.22	0.43
Total operating costs	14.94	18.56	17.57
Hired labor	1.94	2.11	2.23
Opportunity cost of unpaid labor	1.34	1.43	1.50
Capital recovery of machinery and equipment	4.00	4.43	4.59
Opportunity cost of land	0.02	0.02	0.02
Taxes and insurance	0.20	0.22	0.24
General farm overhead	0.50	0.56	0.57
Total, allocated overhead	8.00	8.77	9.17
Total costs listed	22.94	27.33	26.74

Source: USDA-ERS

check have been addressed, the focus can shift to areas that have seen the most significant increases. The sharp rise in interest on operating capital (60%) impacts dairy farm costs but is roughly only 1.5% of the total costs for the entire U.S. Refinancing long-term loans to secure lower or fixed rates helps avoid future increases. Additionally, paying off high-interest debt quickly reduces overall expenses, and loan consolidation simplifies repayment, potentially offering better rates. Negotiating with lenders for lower rates or extended repayment periods can ease financial pressure, while refinancing can improve cash flow by lowering monthly payments and freeing up funds for operations or investments.

While the opportunity cost of land was second in the rate of increase (50%), it is very low as a percentage of the total costs. For example, the state with the highest opportunity cost is Indiana at 10 cents, followed by Iowa at 8 cents per hundredweight (cwt) of milk. This represents 0.27% and 0.33% of total costs for both states, respectively.

Successful dairies are maximizing the use of their land by enhancing productivity per acre. They implement several strategies to achieve this. First, they apply manure judiciously, improving soil health through precise sampling, testing and application. Increasing the production of high-quality forage per acre is important from this perspective. Some leading dairy



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farms have adopted the use of diverse cover crop mixes (legumes, grasses and brassicas). These mixes enhance soil health, prevent erosion and boost organic matter, adding value to their cropland.

Conclusion

Managing rising costs in dairy farming is an ongoing challenge that requires proactive and strategic approaches. By focusing on capital recovery, custom services, equipment breakdowns, fuel, lube and electricity, farmers can implement actionable strategies that lead to significant cost reductions without compromising milk production. Additionally, addressing factors contributing to rising expenses – such as interest on operating capital and opportunity costs of land – can further enhance profitability, positioning themselves for long-term success.

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