

## Making Millionaire Model Dairy Producers, Part IV

by Dr. Larry Tranel, ISU Extension Dairy Specialist

### A 10 Year Dairy Case Study – Reviewing the Past to Prepare for the Future

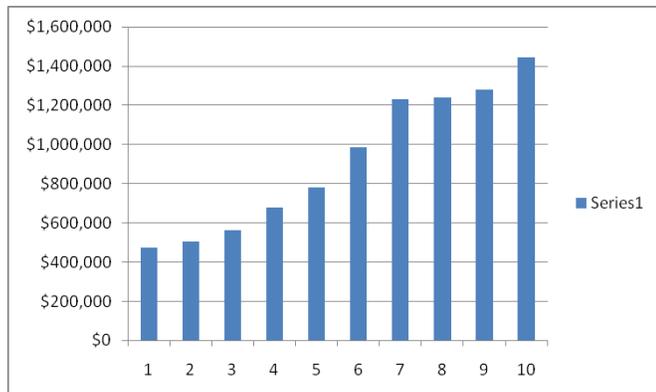


LEOPOLD CENTER  
FOR SUSTAINABLE AGRICULTURE

In 1999, a 34 year old dairy couple milking 80 cows in a 52 cow stall barn became interested in following Extension's Model for dairy grazing. First step was to reduce crop work and swine enterprise to have labor to add more cows. By 2001, the couple was milking 115 cows in the stall barn. The physical stress led to the stall barn being converted to a low cost swing 16 milking parlor at a cost of \$38,000 in 2002. The pastures, the parlor, the low cost facilities, the crossbreeding, the labor efficiency and the annual financial analysis were the keys to their success.

The herd size gradually grew along with the family size and by 2010, the couple was milking around 170 cows. This dairy couple was able to fulfill the desire to become millionaires as depicted in the chart below. The chart below displays farm net worth with growth of about \$1 million in just these 10 years.

Substantial investments in both family living and non-farm assets would be over and above this yet. It is extremely important to note that land appreciation accounted for \$561,700 or 58% of this growth. The 137 acres of owned land was valued at \$1,900/acre in 2001 and at \$6,000/ acre in 2010.



A view of estimated farm net worth growth on this Case Study Millionaire Model Dairy Farm over 10 years.

The **milk price** averaged **\$15.15** in this 10 year time frame ranging from a high of \$19.57/cwt. to a low of \$11.67. Milk sales averaged \$2,665 per cow. Total cash income averaged \$418,319 or \$2,949 per cow.

The **culling rate** averaged **14.77%** during this time. Low culling rates allowed sizeable livestock inventory adjustments to occur averaging \$14,200 per year. In addition, capital sales of livestock for breeding purposes also occurred at a value of over \$10,000 per year. Coupled together, this low cull rate meant over \$24,000 per year in additional income, often converted to non-farm investments.

On the expense side of the equation the vet costs averaged \$44.36 per cow; purchased feed averaged \$779.72 per cow with much higher figures in the 2007-2010 timeframe. Total cash expense was \$261,510 or \$1,844 per cow without interest costs included and not all labor was paid in cash.

**Net Cash Income** averaged \$156,809 or \$1,106 per cow. After adding a \$3,867 average inventory adjustment, **Net Farm Income** averaged \$160,676. An equity charge around 5.8% across all assets owned averaged \$52,344 per year leaving a **Return to Unpaid Labor** of **\$108,332** per year to the owner-operator. This owner-operator averaged 3,550 hours per year and thus earned \$33.16 per hour worked if calculated by dollar average earned per year or \$30.51 per hour if calculated by average return to unpaid labor divided by average hours worked. **Either way, labor earnings were very significant.**

**The average total cost to produce milk was \$12.82.** This ranged from a low of \$9.59 to a high of \$17.98 and includes all labor and equity/interest costs on capital. These costs also included fair market value of depreciation averaging \$11,339 annually. Older equipment and low cost buildings are used to reduce depreciation and ownership costs.

**Net profit after all costs**, including all unpaid labor and equity was \$2.33/cwt of milk sold or **\$65,832 annually**. This case study averaged 48 hours of labor per cow, paid and unpaid, and thus is at a very good level of labor efficiency. Labor efficiency is a high priority on Millionaire Model Dairy Farms.

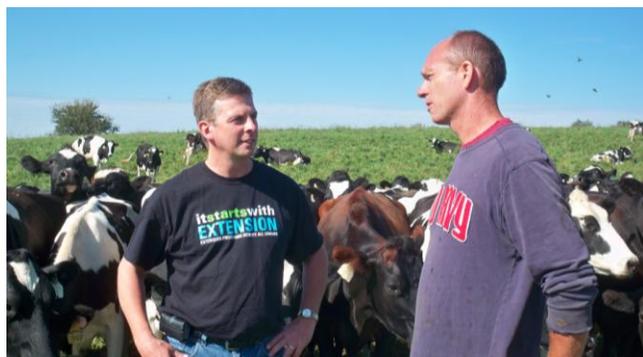
## A Competitive Case and Challenge for Efficiency

This case study deserves a critical review for efficiency standards for both strengths and weaknesses. Gross return per Full Time Equivalent (FTE) labor (3,000 hours annually) averaged \$191,700 and had a net return per FTE of \$66,842 over the 10 years. These numbers were highly variable from year to year but were strong each year.

**Cows per FTE laborer grew greatly (37%)** from 46 cows in the stall barn years to an average of 63 cows per FTE laborer after the Swing 16 milking parlor was built. Hundredweights of milk sold per FTE laborer also increased significantly (>41%) to over 1 million pounds sold after the parlor was incorporated.

**Pounds of milk sold per cow averaged 17,484 per cow** annually and varied from 15,573 to 19,450. Though these are crossbred cows grazing 6-7 months per year, this level of milk production can still be improved through increased cow comfort, feed quality, dry matter intake and genetic improvement. In lower feed price years, this level of milk production has proven to be sustainable. However, in higher feed price eras, the profit equation increases the need for higher levels of milk production per cow.

This higher level of milk production per cow increases the amount of feed going into milk production versus body maintenance. It should not be taken lightly that each additional pound of dry matter intake above maintenance is worth 2 – 2.5 pounds more milk. **It pays to feed thy cows well.**



*Discussing pasture management and genetic improvement as a means of further increasing profits.*

For example, in 2003, this model farm was advised to increase production per cow as the next best step to improve profits as labor and pasture efficiencies were already doing very well. Taking this advice, the milk production was increased from 16,555 pounds per cow in 2003 to 19,450 pounds per cow in 2004. The reward for doing this was 186,200 pounds more milk from 11 fewer cows. The feed cost savings was estimated at \$11,880 and the addition milk was worth \$30,146. **Why not make \$42,026 more for milking 8% fewer cows?** This milk production level subsequently dropped as more cows were added.

## A Higher Feed Cost Challenge for the Future?

As higher feed prices changed the playing field since 2007, higher levels of milk production per cow should be sought to continue strong levels of profitability. In the past feed costs were 50-60% of milk production costs. In 2010, feed costs for this case study was **71% of total costs**. Even though total feed costs per cow were reasonable at \$1,846 per cow with replacements, feed costs per cwt of milk sold was actually quite high at \$10.76/cwt. relative to a 2010 benchmark of \$9.00/cwt. The 2010 milk income over feed costs was only \$5.36/cwt. with a benchmark in 2010 of \$7.00/cwt. Feed cost per cwt of milk sold is an important figure to analyze for the milking cows.



*Discussing TMR feeding management as a means of increasing dry matter intake and milk production.*

This model dairy has increased cow numbers relative to acres operated substantially and focused on producing forages while purchasing grains and commodities. Higher feed prices demand more judicious purchases and attention to higher quality feed production and pasture management for the future to increase production per cow as top priority.

This needs to be coupled with genetic improvement using a structured, long term breeding program using AI as a basis. Transition cow housing on this model farm like most dairy farms, also needs to be a priority focus to help transition cows before calving into higher levels of milk production while reducing metabolic problems, too. Last but not least, further reducing somatic cell counts to increase both milk production and milk price premiums is needed.

These seem to be the necessary areas of focus for the future of most Millionaire Model Dairy Farms.

The Millionaire Model Dairy Farm Project was designed by Dr. Larry Tranel, ISU Extension Dairy Specialist, NE/SE Iowa. Thanks to the Leopold Center at ISU for their support of this project and the dairy producers who have so graciously shared their financial data for others to learn from.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Many materials can be made available in alternative formats for ADA clients. To file a complaint of discrimination, write USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964.

For more dairy related extension information visit the ISU Dairy Team at: [www.extension.iastate.edu/dairyteam](http://www.extension.iastate.edu/dairyteam) or [www.extension.iastate.edu/dubuque/info/dairy+publications.htm](http://www.extension.iastate.edu/dubuque/info/dairy+publications.htm)