

Managing a Profitable Dairy Farm

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Introduction

Profitable managers create a mission, by which they establish a solid direction and objectives with clear goals and measurement criteria to evaluate performance. This process is very important to identify strengths and weaknesses of available resources and extract the most out of available resources and supplement the remainder. Measurement of key performance areas, compared to establish pertinent industry benchmarks and fine-tune goals to meet the performance criteria, is of utmost importance. Goals must be written, understood, assigned for implementation, and assigned accountability. Diligent and regular review of progress must be performed to reconfirm direction or change as required.

There are several websites that will provide you with numbers, ratios, and formulas, etc. The list is daunting. You must select a pool of number criteria that is most meaningful and attainable to your specific set of circumstances. At the end of the day, this black and white approach is what will dictate whether or not you were a profitable manager and whether or not you will be in business. However, the “journey is as important as the destination”. Everyone is looking for that single factor that makes the difference in profitability. The one consistent factor is that there is no one single factor. The objective of this presentation is not to necessarily regurgitate numbers but to characterize a “Management Philosophy” that is critical to

achieving a consistent positive and profitable outcome.

How Do You Know if You’re Profitable?

No excuse philosophy: Whether your starting with a clean slate, managing an already “profitable dairy”, or attempting to pull together the pieces of a broken attempt, a successful manager needs a vision of how the program needs to evolve and materialize. Visionaries do not possess blinders. With margins as they are, anything should and could be possible. Although flexibility is critical, you can’t lose sight of your core business: producing milk profitability. These individuals have the ability to look at a situation and clairvoyantly mold it into a near real prospect. At first attempt, the prospectus has no boundaries, limits (i.e. anything is possible in developing the ultimate scenario of a dairy business venture). Scale back process: What is realistic? What is the realistic scope of the business as it relates to the mission of the business? Enter “Mission Statement Development”: What are you trying to accomplish? The essence of a profitable manager is not necessarily choking every dollar, but knowing how to extract the most out of their resources. Once a clear, unified decision on a profitable direction has been made, the goal is to carry it through, with no excuses.

Some key timeless principles that must be seriously considered and somehow quantitated to determine whether or not you have the potential to

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be profitable as it relates to the directive of your mission include: scale of business, labor efficiency, level of production, cost control, capital efficiency, and market/margins. The outcome of reviewing these basic concepts will typically characterize the probability of achieving the level of profitability you desire: Are you conservative or are you a risk taker?

Scale of Business

This essentially characterizes the size of your business. The importance relates to how satisfied you will be in regards to potential net income your farm can achieve in relation to the mission and objectives you set forth. A recent 2010 survey of 204 New York dairy farms (Knoblauch et. al 2011), clearly illustrates (Table 1) that the more cows you have, the more net farm income will be realized. This also translates into more net income per cow and a greater return to capital. Typically, the greater the size, the more capital that is required. Thus, capital resource acquisition (loans, mergers, investors, etc.), cost of money, and the pool of management/labor, etc. will play a role in this direction.

If maximizing net income is a goal and you have available capital and a good pool of labor, the bigger, the better. However, it is very important to evaluate these results over a series of years. The most notable year was the catastrophe of 2009 where the change in net worth of a 350-cow dairy in NY was -\$241,427 (Knoblauch et. al. 2011) and net farm income for a herd >900 cows was -\$490,500 (Knoblauch et. al., 2010). Although milk receipts in 2009 were low (\$13.93/cwt), they had been lower in recent years (2002: \$12.99/cwt; 2006: \$13.85/cw), and total cost of production increased about 15% in 2009. The cost of production had started the upward direction in 2008 (21.3%); however, it was sustainable since milk receipts were \$19.35/cwt. Therefore, the take home message is that although large dairy farms can make more money, they (especially poorly managed

ones) also have the potential for losing large amounts of money.

Level of Production

Production per cow is a component of profitability; however, high production does not guarantee high profitability. Table 2 shows that production levels and net farm income tends to be higher with larger farms, as does net farm income per cow. However, this is no clear relation ($r^2=0.15$) between milk per cow and profit per cow in northeast dairy farms of all sizes (NEDS, 2011). This reverse paradigm clearly illustrates that although there are several factors involved with achieving high production, the costs associated with that accomplishment may not always translate into profit. Total cost of producing milk was \$22.78/cwt for levels of production of less than 20,000 lb/cow/yr; whereas, for those greater than 20,000 lb/cow/yr, it was \$18.85/cwt. (Knoblauch et.al., 2010). Grain and concentrate cost were actually 4.0% lower for the higher production group. The “value of family resources” was about 130% higher for the lower production category, which suggests they were smaller farms, and therefore, more family labor contributed to the labor pool. Thus although there is no consistent association between milk per cow and cost/cwt, those which can consistently produce more milk for less costs are going to receive the highest rates of return to capital, and they tended to be the larger (>600 cows) herds.

Labor Efficiency

The bottom-line for quantitating labor use is milk per worker. This efficiency measure evaluates work done by a full-time equivalent worker at 230 h/mo. Labor efficiency is measured in terms of milk sold/worker. Labor cost, efficiency, and profitability are highly related, and typically those farms which have the best control of labor efficiency have the highest rates of return. This is not to say that this formula always works. Recall the

memorable year of 2009, the most labor efficient farms, (>1.1 million lb milk sold /worker), with the highest milk production/cow, and were the largest farms lost the most amount of money (Table 3). The most devastating challenge with 2009 was the reduction in net worth. Compare this to 2010 where the numbers were reversed and appear somewhat “normal”. Labor efficiency is a also reflection of the pool of all other efficiencies in the farm operation, for example, ease of feeding, milking, cow movement, etc. In addition, the “mind power” of labor and management to identify and overcome efficiency bottlenecks is critical to fine-tuning this number.

Cost Control

The 4 largest and most critical cost items we are always struggling with (in order of magnitude) are purchased feed and crop expense, hired labor, milk marketing, and machinery. Purchased feed and crop expense/cwt of milk includes all purchased feeds used on the farm and crop expenses associated with feed production. In addition, it accounts for variations in feeding and cropping programs, as well as between herd production differences. Table 4 illustrates that as farm purchased feed and crop expenses decreased from \$7.50/cwt, farm profits rose. However, reducing purchased feed and crop expenses when milk output per cow begins to suffer does not translate into higher profits; therefore, a nutritional threshold does exist which must be carefully balanced with cost. It appears in 2010 that as threshold of feed and crop expense dropped below \$6.00/cwt, milk/cow and income/operator began to suffer. However, net farm income continued to rise as feed and crop expense/cwt decreased.

Although labor efficiency was discussed, it can be related back to machinery cost. If the intent of a machinery purchase is to save labor and can be documented, higher machinery cost can be justified.

Financial Health

There are several factors which can be reviewed to determine various “states” of the business. Some of these include: liquidity/repayment ability, solvency, operational ratios, capital efficiency, and profitability. Many financial advisors will characterize your financial health by calculating and examining these factors in relation to your current status. Capital efficiency relations are what we often use to evaluate how intensively capital is being used in the business. A critical component of capital efficiency is the asset turnover ratio. This measurement looks at the relationship between farm receipts and capital investments. A good ratio is 0.6, and the higher the better (Knoblauch et al., 2010). This means you’re bringing in more money from farm receipts relative to what you’re spending in capital investments. The operating ratios on the other hand give you a picture of what you’re spending to operate (operation, interest, and depreciation) relative to what you’re taking in for farm receipts. In this case, the lower the number the better. These are all important year-end numbers to consider. They can be used to evaluate how you are doing, but more importantly, they can be used as a determinate of what your direction should be in the future and how your lender looks at your ability to be a profitable entity. These numbers also are good fodder for reevaluating and/or developing future strategies. For example, you can retrace to the origin of the components and determine by use of reliable benchmarks whether you have a spending problem or a revenue problem, i.e., Are you making the amount of milk you need to justify what you spent on feed? If not, should I cut feed cost or look at some other bottleneck as to why cows aren’t producing more milk (cow comfort, overcrowding, etc.). This example characterizes a common problem and how it should be constantly reviewed; the solution may involve a major capital investment (barn or parlor), which requires more soul searching.

Market/Margins

Receiving a high price for your product can propel your profitability position; it also can mask a lot of management flaws. The price of milk is determined by many factors: regional location relative major markets, Federal order, processor, foreign imports and exports, tariffs, and unknown factors. Dairy forward pricing allows farmers to voluntarily enter into forward price contracts with handlers for pooled milk used for Class II, III, or IV purposes under the Federal Milk Marketing Orders. The program allows regulated handlers to pay farmers in accordance with the terms of a forward contract instead of paying the minimum Federal order blend price for pooled milk. There are many deviations of this process that can aid dairy farmers in reducing unknowns about market fluctuations. Although it is a viable program to mitigate the lows, it does not typically allow you to take advantage of the highs.

Transporting water has long been an important consideration in dealing with the fluid milk market. Therefore, either you need to be close to your market, take out the water, or bring the market to you. Separating milk into components is an important consideration, and the closer to the farm this can be accomplished, the better. This offers the dairy farmer opportunities to explore higher margin, branded product markets for their products, which now can be shipped longer distances.

Benchmarks

How do you gauge your performance in a given management area, say labor efficiency or overall, i.e., debt:asset ratio or determine what direction you want to pursue? Farmers finally decided it was better to share a little and gain a lot, and benchmarking networks to aid in providing real life direction are available. Most regions in the US have cooperative herd programs to compile common data from a pool of farms to compare stats.

These relative comparisons are good as long as they are uniform, meaningful numbers and are used to make intelligent decisions to either confirm or establish a direction. Therefore, in order to achieve reliable compiled number(s), measurements must be accurately recorded and compiled. Be sure to compare yourself to where you are and want to be. Typically, using the top 10 to 20% of any benchmarking group is a good goal to achieve a higher level of management definition and profitability. It is always important to understand that benchmarks are guidelines and should not be an obsession. The important component is to identify and leverage your strengths and strengthen your weaknesses.

Management Philosophy

This brings into perspective management style and how this reflects profitability. The 2010 Northeast Dairy Farm Summary delineated management styles of the top 25% of the dairy farms in their 540 herd survey into 5 categories: 1) great with cows, 2) labor efficient, 3) better milk price, 4) tight with a buck, and 5) balanced (good all-around managers). Table 5 summarizes the results. It appeared that regardless of management, still these above average, successful operations were able to leverage their unique management strengths in order to develop strategies that coincided with their personalities and resources. If we try to delineate style and performance factors, the “great with cows group” produced the most milk per cow. No surprise here! Although the labor efficient group produced 6.1% less milk, they did it with 37% more labor efficiency and a 32% higher return on investment. Not to be out done, the “tight with a buck” group had the third lowest production per cow, and the lowest milk price, yet they had the second lowest cost of production per cwt and the highest net earnings per cow. This was not accomplished by labor efficiency (milk/worker). There is no one “best” philosophy. All of these management styles have capitalized on their

resources and strength to achieve a balance between costs and production per cow.

Summary

Finally, it is fun to write and armchair about what you “should” be doing as a “profitable manager”; however, doing it is another thing! Again, as with any worthwhile endeavor, there is no one factor, number, or philosophy that will produce a profitable dairy farm. Many difficult and unpopular decisions often need to be made. Many talents come into play, and the management philosophy that will prevail is one of a “leadership mentality” which must be communicated, implemented, practiced, and transposed throughout the entire staff for this to be a reality.

References

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Table 1. Cows per farm and farm family income measures (Knoblauch, et.al., 2011; 204 New York Dairy Farms, 2010).

Number of Cows	Number of Farms	Cows Per Farm	Net Farm Income Without Appreciation (\$)	Net Farm Income Per Cow (\$)
Under 60	24	48	24,201	509
60 to 99	23	76	16,052	210
100 to 199	42	139	67,455	484
200 to 399	26	290	190,350	657
400 to 599	25	490	325,488	665
600 to 899	30	740	490,148	662
900 and over	34	1,440	1,030,251	715

Table 2. Milk sold per cow and farm income measures (Knoblauch, et. al., 2011; 204 New York Dairy Farms, 2010).

Milk Sold (lb/cow)	Number of Farms	Number of Cows	Net Farm Income Without Appreciation (\$)	Net Farm Income (\$/cow)
Under 16,000	18	162	72,970	451
16,000 to 17,999	20	148	41,659	282
18,000 to 19,999	15	117	54,870	467
20,000 to 21,999	30	219	137,234	626
22,000 to 23,999	36	503	225,914	449
24,000 to 25,999	40	716	448,328	626
26,000 and over	45	861	743,325	863

Table 3. Milk sold per worker and net farm income (Knoblauch et.al. 2010, 2011; 204 New York Dairy Farms, 2009/2010).

Pounds of Milk Sold Per Worker	Milk Sold (lb/cow)	2009 Net Farm Income Without Appreciation (\$)	Milk Sold (lb/cow)	2010 Net Farm Income Without Appreciation (\$)
Under 500,000	16,303	-5,154	15,643	3,383
500,000 to 699,999	19,938	-40,523	20,027	75,306
700,000 to 899,999	22,414	-46,323	22,668	98,272
900,000 to 1,099,999	23,985	-201,651	24,114	299,803
1,100,000 & over	25,453	-255,791	25,620	783,500

Table 4. Purchased feed and crop expense per hundredweight of milk and farm income measures. (Knoblauch, et. al., 2011; 204 New York Dairy Farms, 2010).

Feed and Crop (\$/cwt)	Number of Farms	Number of Cows	Forage Harvested (lb DM/cow)	Milk (lb/cow)	Net Farm Income Without Appreciation (\$)	Labor and Management Inc./Operator (\$)
7.50 or more	36	194	7.2	20,139	57,308	3,103
7.00 to 7.49	19	657	7.9	25,185	278,556	52,773
6.50 to 6.99	36	512	7.6	23,930	249,095	57,433
6.00 to 6.49	50	558	8.9	25,640	378,838	117,031
5.50 to 6.00	35	570	8.1	24,422	479,057	173,201
Less than 5.50	28	499	8.7	24,715	520,373	170,532

Table 5. Management styles of the top 25% dairy farms in the Northeast Dairy Farm Summary (2010).

	Management Style				
	Great with Cows	Labor Efficient	Better Milk Price	Tight with a Buck	Balanced
Number of Farms	23	22	18	44	24
Number of Cows	412	768	286	258	217
Milk Sold (lb/cow)	26,462	25,871	22,107	23,470	22,679
Milk Sold (lb/worker)	1,136,574	1,630,074	1,027,436	1,118,147	998,524
Net Cost of Production (\$/cwt)	14.78	14.33	15.32	12.34	4.72
Milk Price (\$/cwt)	17.33	17.36	18.59	17.09	17.14
Net Earnings					
Per Cow (\$)	737	805	779	1,130	687
Per Cwt (\$)	2.79	3.11	3.58	4.81	2.98
Return on Assets (%)	9.2	11.3	9.3	11.6	9.3
Net Worth (%)	60	62	70	70	60