Pitfalls and Potholes of Dairy Farm Expansion

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Introduction: Panel Discussion on Dairy Expansion

The dynamics of dairy farm expansion are far reaching. Even the smallest mistakes always seem to be larger when trying to compensate for the many pitfalls that exist when expanding. Many of you will say that building or expanding a dairy operation is still much less painful than building the home most of you live in. This paper and panel will introduce to you some of the challenges that have been overlooked, and at the same time hopefully create solutions for you to use during your current or future expansions.

As I look back on a dairy expansion project that I was extremely involved with, I can truly feel the emotions and frustrations that dairy farmers have when pitfalls and potholes show there ugly faces. Expansions have taken dairy farmers from small modest operations to the mega operations producing a high percentage of the milk production currently in the United States. The most common thread that every dairy farmer has felt has been the concern of the environmental stewardship needed to protect his family and neighbors. This necessary part of expansion has seen the dairy farmer at his best making decisions that were vital to his outcomes, but at the same time his or her frustrations on the lack of good science available to help answer the tough questions regarding waste management.

As I have traveled throughout the U.S. touring dairy farms, our industry can be extremely proud of the impact dairy farmers have had to move the state regulators and the Environmental Protection Agency (EPA) to a better understanding of the stewardship dairy producers are bringing to the communities we live in. Have we had some problems, yes we have, but as the problems appear, consultants and science improve to answer the timely issues. This paper and panel will not deal directly with the permitting systems in the U.S., but will indirectly touch on the importance of the issue.

I have seen as well as many of you, operations that have over 5,000 to 20,000 head on one site. Dairy farmers and consultants have constructed tremendous facilities to show the great ingenuity and capabilities possible. The panel for this presentation is highly qualified to address a number of issues. First, will be Gordie Jones DVM from Fair Oaks Dairy, Fair Oaks, IN, who will discuss the "Impact of Implementing Cow Comfort on a Large Dairy". Next will be Gary Henrickson from Platteville, Colorado and Bella Holsteins talking about "Acquisition, Transportation, and Transitioning of Dairy Cattle in an Expanding Dairy". Third will be John Smith PhD from Kansas State University talking on "Dairy Facility Issues to Consider When Expanding". And the final speaker will be Tim McNamara from Agstar Financial Services, ACA Apple Valley MN. presentating "Expansion Issues and Pitfalls; A Lender's Perspective. Obviously, we cannot discuss every pitfall or pothole that dairy farmers have had to deal with, but at the same time hopefully the issues we are presentating will create awareness to current and future expansions.

A simple example to start this topic off was the discovery by a great consultant named Dennis Armstrong. Dennis is no stranger to all of you and I truly would like to recognize him for all of the opportunities he has given to many of us over the years. Dennis has been a student of expansion most of

his lifetime. If you have not called or had Dennis look over your plans of your expansion, you are missing a great mind that understands the dairy cow. To this end, I have always valued his ideas and opinions, and this example is just the tip of Dennis's always engaged brain. His question to me this past summer was "What is the size of your milk stalls on your rotary at your dairy?" My first response was to give him a surprised look. Then I said what should it be? As always, he had the answer and to my surprise when I measured, Dennis was right on target again. He said if the stall were not 56" to 58" we were creating drag on the system that powers movement used to rotate the platform. Unfortunately, it was too late to change the stalls, as we had milked in this barn for five years. But at the same time, our herd manager and I began to study what we could do to improve cow comfort on the rotary for the larger third and greater lactation cows that are cramped in the stalls. This would have been a great fix early in the process, because we beefed up our whole system because of the drag we were having with cow's butts on the rail. So, to give the cows much needed room, were able to modify the stall so the cow could move 3"- 4" forward to prevent the drag and make the cow more comfortable. Our cows seem much more comfortable and because of the one person, we have solved another pothole of expansion.

Again, working together with our dairy farmer family, we tend to solve problems. Communications of our ideas and touring fellow dairy farmer facilities creates the atmosphere to help each other. The pride I have with this industry is special; no other livestock species have these special values. Thanks to all of you who helped your neighbors and communities.

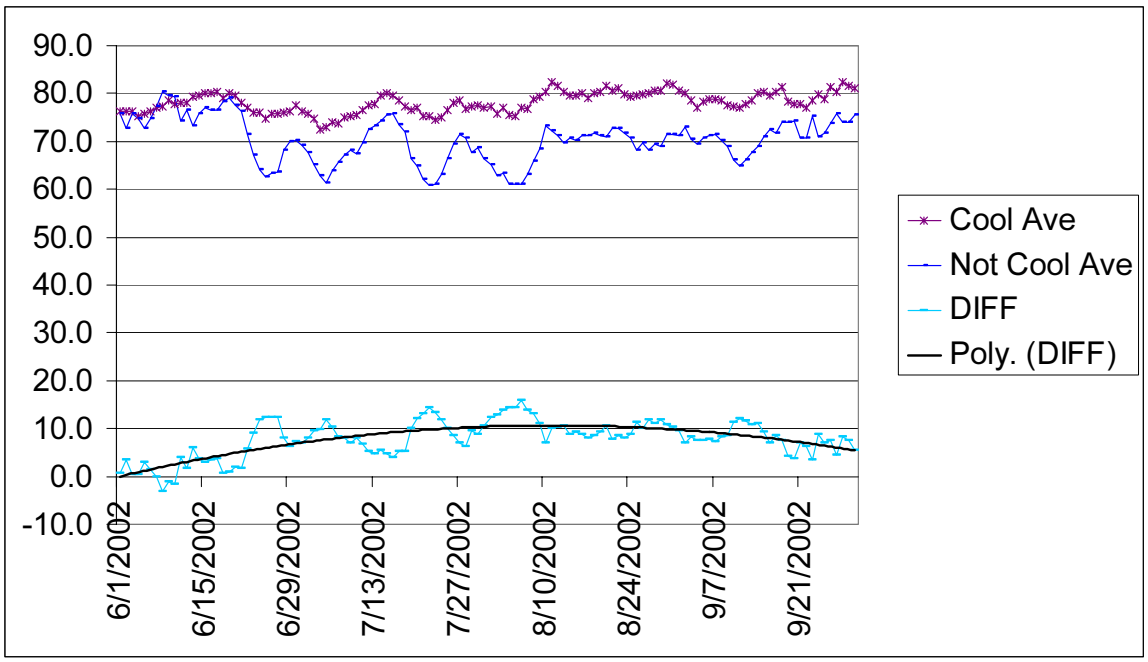
Impact of Implementing Cow Comfort on a Large Dairy

Gordie Jones DVM
Fair Oaks Dairy, Fair Oaks, IN

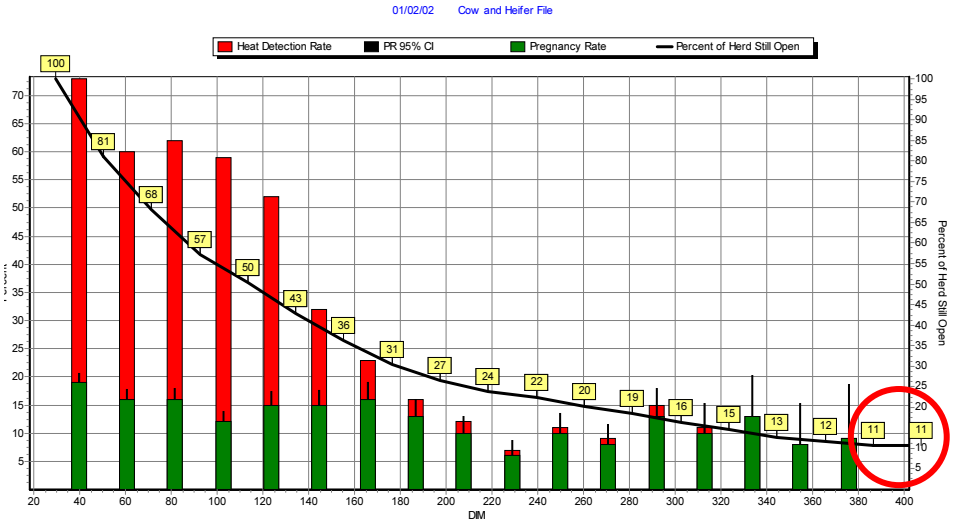
Appling cow comfort features to the dairy cow's life and her environment can both increase her milk production and help in reducing her involuntary removal from the dairy herd.

By apply cow cooling to a large Midwestern dairy farm. The dairy farm was able to maintain their milk production through a hot Indiana summer and also maintain the breeding efficiency without suffering a summer drop in pregnancy rates.
Fans were added to the feed lanes and over the freestall beds of an 11,400 cow dairy facility along with soakers every eight (8') ft. on the feed lane. Milk production was 9.6 pounds of milk per cow over the un-cooled cows, for a period of 90 days.

Milk per Cow June 1st- Sept 30, 2002



Survival Graph Fair Oaks #2 Jan,2002



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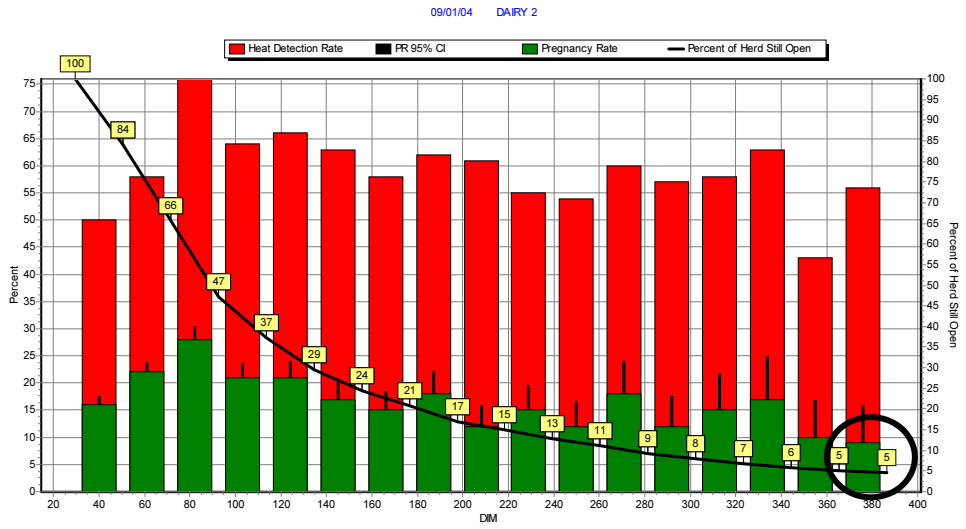

Acquisition, Transportation, and Transitioning of Dairy Cattle in an Expanding Dairy

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When you or I make decisions to build or expand your or my operation, now is the most important time to evaluate your risk management for the acquisition of cattle. You and I have spent many hours in the expansion planning of your dairy facilities; then make sure that planning your cattle purchases has been given the appropriate time as well. When planning cattle number purchases, one needs to be reminded that all cattle originally purchased for the expansion may not make the milking herd. You need to plan a minimum of 15%-20% of the purchased cattle the first year will need to be repurchased for targeted milking numbers. Some reports on milking herd purchases have been as high as 50% additional cattle required. In addition your decisions of purchasing milking cows or heifers will need to be well thought-out to facilitate herd health targets and cash flow requirements that are so critical during your expansion. If expanding by large numbers, remember the quality of cattle you are looking for becomes harder and sometimes more expensive as the numbers increase. Having penalties with contractors for delays in construction, which causes cattle to be over crowded or delayed in shipment prior to calving has great consequences in getting your new purchases off to a fast start. Planning and the execution of your goals will need to be detailed to mitigate the pitfalls and stress of animals, and at the same time ensure capitol needs and cash flow requirements are met. With my experiences of expansion, if the following criteria are met, many of the pitfalls and potholes will be alleviated.

1. **Building a dialogue with your cattle dealer is essential.** As the supplies of cattle tighten, it is easer for the seller to market cattle and his levels of willingness to accommodate your requests diminish.
2. **Communicating your desires for vaccination protocol is essential.** Have your veterinarian contact the dealer's veterinarian so the purchaser can reduce the stress of the animals when duplication of vaccinations occurs.
3. **Testing for health concerns that you want to control. If BVDV, BLV, TB, Brucellosis, Johne's, or Mycoplasma** is a concern for your herd, negotiate if the seller will test and who's going to cover those expenses before shipment occurs is a necessity.
4. **Contact the state of origination or the State Veterinary Office of heifers you have purchased to be sure all health requirements have been fulfilled for entry to your state.**
5. **Selection of cattle for due dates.** Allow 30 days minimum after shipment before calving begins.
6. **Grouping of heifers for a determined amount of time prior to shipment.** Having cattle purchased and allowing time for vaccinations and cattle to socialize for a determined period of time prior to shipment will have great benefits in receiving animals in a healthier condition.
7. **Contacting and interviewing a reputable trucking company.** One of the areas often over looked is the newer design of trailers that are available today. Air ride vs. spring ride can make your investments arrive from great distances in much better condition. Know the distance and time that it should take and agree before the cattle leave that you expect them to arrive on a reasonable schedule.
8. **Communicating your desires for feed and water 48hrs before loading.** Cattle that travel long distances need to have the proper feedstuffs to handle long time periods with out feed and water. If cattle are on an alfalfa based TMR try to have your dealer transition your cattle to an alfalfa hay\grass hay mix of modest but palatable quality a few days before shipment.

9. **Arriving cattle need a transition area to rest from the trip.** A corral for transition with similar feed prior to shipment and adequate water needs to be ready for the arriving group. This is a time that the new cattle need a few days together to adjust before moving them into your herd.

These are just a few of the details that an expanding herd needs to address before the decision to acquire additional animals begins. Remember all the facility planning can only be maximized if you take care of the details when it comes to acquisition, transportation, and transitioning your purchases.

Dairy Facility Issues to Consider When Expanding

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Dairy facilities can have a dramatic impact on milk production and cow health. Over the years field observations and results from research trials have been used to improve dairy facilities. In the United States producers try to minimize facility cost while trying to maximize milk production per cow, reproductive efficiency, and cow health. Producers often use employees to operate their milking parlors as many hours as possible reducing their fixed cost per cow. Under these conditions producers have to be extremely careful where they invest dollars into dairy facilities. Dairy facilities can have a dramatic impact on milk production and cow health. All components of the dairy must be sized correctly to create an environment that is ideal for the dairy cow and the employees who will operate the facility. Milking facilities should be constructed to minimize heat stress and time cows are away from feed and water. Minimizing travel distances to the milking parlor are essential. A number of critical decisions have to be made concerning cow housing and grouping strategies. The goal should be to have the number of groups needed to implement the management and feeding strategies the producer wishes to use. Often bottlenecks are built into a dairy facility that prevents use of some feeding and management techniques. Dairy facilities should be designed to maximize dry matter intake and minimize heat stress. Providing cow cooling in the holding pen and cow housing areas is essential. The most common problem is that time is not taken to develop a business plan and facility plan. It is essential that dairy producers take a team approach when designing dairy facilities. Team members may include key employees, nutritionists, veterinarians, engineers, extension specialist, equipment manufactures, contractors, financial advisors, etc. Many times facilities are designed and built that don't match up with the management strategies of the dairy producer or the climate where the dairy will be built. Producers will have to live with these mistakes for many years. It is important that the different components of the dairy facility compliment each other and match up with the climate where the dairy will be built. Listed below are a few of the issues and decisions that dairy producers will have to make.

- **Milking management and parlor size**
  - Will you milk 2X, 3X or 4X?
    - Do you wish to Increase milking frequency in early lactation?
  - How much time will pre-milking hygiene require?
  - How many operators will be used in the parlor?
  - What automation will be installed and how will it be used?
    - Electronic ID, milk meters, detachers, sort gates, etc.
  - Will a hospital parlor be used?
  - Has a time budget been developed to size the parlor?

- **Group and parlor size**
  - Does the group size and parlor size match up?
    - Minimize time cows are away from feed & water
    - Not more than 4 hours per day
- **Group size and travel lane width**
  - Have to be able to move cows to and from the parlor quickly
- **Grouping strategies and special needs facilities**
  - Critical through the transition period
    - Encourage dry matter intake
    - Don't over crowd
  - Special needs facilities have to be sized to accommodate fluctuations in the number of cows calving
  - Do the number and size of pens match up with the management strategies?
- **Cow housing**
  - Freestalls vs. Dry-lots?
  - Does the type of hosing match up with the climate?
  - If freestalls are the choice
    - Type of bedding?
      - If sand is the choice, is the manure management system compatible?
    - Which configuration, 2, 3, 4 or 6 row?
      - Is there enough bunk space to use lockups?
- **Cow handling system**
  - Lockups vs. sort gates?
  - If the choice is lockups do you have adequate bunk space?
- **Heat stress management**
  - Cool the cow or cool the air?
    - Combination systems?
  - Does the system match up with the climate?

Expansion Issues and Pitfalls: A Lender's Perspective

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AgStar Financial Services, ACA

The road to a successful dairy expansion can be treacherous – full of bumps, potholes, dangerous curves and an occasional dead-end. However, with proper planning and a good "road map", the journey to success can be made safer and more enjoyable.

Many dairy producers find great joy in facility planning – the thought of a shiny, new parlor full of high-producing cows generating thousands of pounds of milk brings a smile to the face of any producer (and hopefully their lender as well!) At the same time, the mere thought of preparing a budget or a financial projection sends many producers running from the office. Without a financial plan, the potential for business success diminishes greatly.

When asked to detail the causes of why some dairy expansions fail, the following issues are the ones that occur most frequently:

1. **Inadequate Capital and Working Capital** – probably at or near the top of the list of causes of stress or failure. While capital does not have to be the "starting point" of a plan, at some point, it needs to be addressed. "How much equity do I need to achieve this plan?" is a question that must be asked and answered. If a 5,000 cow dairy is your goal, how much equity is necessary to adequately capitalize a business of this size? A minimum of 35% - 40% of the total cost of the dairy is a good number to start with. Another "rule of thumb" is the cost of a cow plus $200 - $300. If a 5,000 cow dairy costs $5,000 per cow (facility, cows, equipment, feed, etc.), then 35% - 40% equity would be $1,750 - $2,000 per cow. A good working capital position is $200 per cow (or adequate borrowing capacity in the cow and/or feed lines). Having enough equity and working capital provides the business with the ability not only to withstand adversity (low milk prices, high cow or feed costs, etc) as well as the ability to take advantage of opportunities (cash discounts, buying in bulk, etc.) An adequate capital position also gives the business more "independence" from lender covenants and conditions and allows for more freedom to operate. If you want to milk 5,000 cows, but don't have the equity to do it by yourself, perhaps a business partner or an investor needs to be a part of your plan.

2. **Lack of Adequate Planning** – as stated earlier, most producers love the facility planning phase, but shudder at the thought of writing a business plan or creating a financial projection. Fortunately, there are numerous resources within the dairy industry that are experts at business plans and financial projections. They have the tools and experience to assist in the creation of a comprehensive business plan that most lenders require. A well-written, feasible business plan is a not just a book to give a lender to get the financing. It should be viewed as vital to the ongoing management of the dairy business as a nutritionist or veterinarian. The business plan should be a dynamic document, reviewed and updated as needed as the business changes. At a minimum, the plan should be updated annually. For maximum benefit, the projection should be reviewed on a monthly basis and compared to the actual results to determine if the business is "on plan". If the actual results are less than what the planned called for, changes and/or corrective actions are necessary.

A quality business plan will include (at a minimum) the following key elements:

a. Feed procurement and storage
b. Labor management
c. Herd health
d. Nutrient management
e. Replacement program
f. List of consultants
g. Information management systems
h. Cow-flow based financial projections (monthly for 4 years)
i. Pro-forma balance sheets
j. Sensitivity analysis
k. Evaluation of key financial parameters
    i. Debt per cwt
    ii. Debt service per cwt
    iii. Repayment capacity
    iv. Owner equity
    v. Working capital

3. **Inability/Unwillingness to Follow a Plan** – creating a business plan or a building budget does little good if the plan is not followed. Whether it is cost-overruns or change orders, deviating from the budget can be a fatal error. "We changed that this morning" are the five worst words a construction lender can hear!! It is critical that a Construction Agreement be used where the builder, borrower and lender all agree on the budget. Any change must be agreed to by all three parties. Sworn Statements with lien waivers as construction progresses will help protect all parties from any unwanted "surprises".

4. **Cattle Procurement Plan** – sourcing high quality cows or heifers can be challenging. With the recent higher prices for replacement animals, some producers are tempted to settle for lower quality in an effort to save money. Often, this strategy backfires when the cows are not capable of producing at the level expected in the financial projection. This issue compounds when the low producers are then culled, leading to a higher replacement rate, purchasing more replacements at higher prices and not having enough equity to keep the barns full.

   A second component of the cattle procurement issue is the speed at which the facility is filled. Is the plan feasible? If it is not and cow numbers start to fall behind the plan, the "downward spiral" of not enough cows in the barn begins.

5. **Inadequate Information Systems** – successful business are managed with information that is accurate, timely and adequate. It is difficult, if not impossible to manage a business, especially one that has a large amount of borrowed capital, without information systems that provide the manager with enough data to make informed business decisions. Production and financial data must be integrated into an information system that provides accurate and timely reporting. The industry has come a long way in this area – there are numerous systems available for production, feed and financial data. There are fewer systems that integrate the data into usable information. The effective use of professional consultants is often a good investment for expanding dairies.

6. **Understaffing at the Beginning** – an expansion of a dairy usually requires additional labor. In some cases, dairies have expanded with little increase in the overall labor force. In fact, the expansion provides a more effective use of the present labor force. However, in a start-up situation, making the "investment" in additional labor to help with calving, cow traffic, feeding and cow comfort usually generates a favorable return. It is critical that the people who are responsible for managing are allowed to do their jobs rather than providing labor – "doing $10/hour work while the $100/hour decisions go unmade."

While planning is essential to success for expanding dairies, ongoing monitoring and analysis is just as critical. Spending the time (and money) to create a business "road map" does little good if the map is left on the shelf after the loans have been closed. Successful businesses continue to modify their plans and measure the results to what was expected.

Finally, successful businesses take responsibility for their results. Success or failure rests with the management of the business, not elsewhere. "The bank made me do it" is not in their vocabulary!! Businesses who can readily define "what does success mean to me and my business" are able to do so because they have planned well, have adequate capital, executed their plan efficiently and monitor their business results and compare those results to the plan.