An Americans View Part II

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In part of this article series, I did some general observations and hopefully got you thinking about the potential of the Ukrainian dairy industry. In this part, I'm going to introduce some of the parameters we look at routinely in the American dairy industry. One thing to keep in mind when we go through these parameters is that the average dairy farm in the United States has some sort of computerized record keeping program that allows us (as nutritionists and consultants) to do data mining. This data mining is a critical component of the modern dairy farm and we'll come back to this in time.

When I, as a consultant, walk onto a dairy farm, there are several pieces of data I want:

1. Feed Costs per cow
2. Milk price per liter
    a. I use the above two to calculate income over feed cost (milk income per cow minus feed cost per cow)
3. Age of first calving
4. Bodyweight at first calving
5. Number of cows sold or dead from calving through 60 days in milk
6. Average days in milk for the lactating herd
7. Liters of milk per cow per day
8. Services per conception
9. Pregnancy rate
10. Calving interval
11. Cull rate
12. Rate of metabolic disease (milk fever, ketosis, retained placenta, displaced abomasum, etc.)
13. Mastitis incidence (clinical and sub-clinical)
14. Where does management want the dairy farm to be in five years

As a consultant, and a dairyman, these values give me a good over-view of:

1. Profitability per cow (at least net margin per cow)
2. Nutritional status of the herd
    a. Milk production per cow tells me about the lactating nutrition
    b. Age of first calving and body weight at first calving tell me about heifer nutrition
    c. Metabolic disease gives me information about dry cow nutrition
3. Dry and Fresh cow management
4. Milking procedures
5. Reproductive efficiency (a cow is not worth much if she doesn't breed back), and
6. Future goals and management concerns for the farm.

Before I go further though, let's address the issue of how consultants work with farms. Larger farms in the United States typically deal with three to four consultants: agronomic, dairy (overall consultant plus a veterinarian), financial, and specialists that can address unusual problems. Good consultants are in high demand because

they bring value to the farm. This value is a combination of higher performance (e.g. More milk), new ideas, and an unbiased view of the business. Good consultants are not paid to tell the farm manager “everything looks good”, rather, “in general things are okay, but here are areas we need to address to improve.” Additionally, we, as consultants, are expected to keep current with trends, new research, new ideas, etc. We see many farms so we are also expected to maintain confidentiality. Furthermore, since we are not on the farm every day, when a consultant does visit a farm, we tend to pick up on details that are often over-looked or slowly change and are missed in daily routines. Two examples of this are: number of broken stalls in a barn (an employee may see one today, one tomorrow, etc. But I can walk in and see 15 broken stalls because they just continued to increase in number because no one is repairing them) and body condition score. Body condition score, in a normal herd, changes very slowly in cows. A normal employee may not notice that the herd changed point over a month because they see the cows all the time. This change will startle a good consultant! Normally, a good consultant will visit a farm once or twice per month. They will walk the herd to observe cow condition and health. They will want to know the numbers (and more) listed earlier. They will want to collect roughage samples for analysis, and then reformulate diets. Now, you may wonder about the routine sampling and ration formulation. “We feed maize silage and grass hay as our roughage source. It doesn’t change once it is in storage.” is a common mis-conception. We can show data from one maize silage bunk that is very well managed. The dry matter content and the total fiber (NDF) had coefficients of variation of nearly 10%. Dry matter variation by itself can account for milk production varying greater than 2 liters per cow per day. As silage and hays are stored, they continue to change. Thus, the ration one feeds today is not the same as it was last month. Additionally, grain prices and other things are dynamic (that is they change). Thus, to maintain production (or improve it) and marginal income, routine reformulation is required.

As a consultant, I have a vested interest in the success of my clients. Their success is imperative to my current and future success. In this business, we (consultants) live and die based upon reputation. Honesty, integrity, and a commitment to the dairy industry are all prerequisites. The commitment includes many components. One of the largest is a commitment to continuous professional development. No one ever knows ‘everything’ regardless of years of experience or educational background. A good consultant will have confidence (and some ego) but a critical component of our job is to stay abreast of new technology and concepts. Unfortunately, this does not always happen. Anyone in any industry for any length of time slowly becomes complacent or only looks for things that supports their experiential perspective. Since I have a vested interest in my clients, I ask ‘why’ multiple times per visit. Everyone does tasks or manages a certain way for a reason. Before we can invoke change, we must understand the ‘why’. This serves as a baseline for me to make recommendations that will succeed in the current framework.

When starting with a new farm, there are two areas that I routinely focus on in the short-term (3-6 months). These are: pre-weaned calves, and cows from -40 to +40 days relative to calving (The Transition Cow). It is in these two areas where immediate gains can be made that can be observed and measured. Let me explain.

The pre-weaned calf. Remember, the pre-weaned calf is a neonatal mammal. In other words, they are babies. And as babies, they require special care. Too many times, we see calves treated as second class citizens fed diets that 'keep them alive'. I look closely at rate of gain (with specific targets), mortality (<2%), morbidity, overall appearance and attitude, and the housing/care of the calf. Recent research published in the USA has shown that for every 450 g ADG over 300 g/d during the milk feeding phase results in between 500 and 1,000 liters additional milk in the first lactation. This is a combination of immune function and mammary cell differentiation that is just beginning to be understood. It actually is an exciting time as this research clearly shows that how we treat the neonate directly impacts lifetime productivity.

The Transition Cow. Just as neonatal performance impacts lifetime performance, nutrition and management of the transition cow directly impacts the upcoming lactation yield, health, and reproduction. Regardless of animal housing, dry cows need to be housed in their own area. It is the only way to manage the dry cow, and specifically the pre-fresh (-21 days to calving) cow. The reasons for this are very clear when we review the published literature from around the world. A 1998 study from Dr. C. Guard (Cornell University) clearly demonstrates this (Table 1).

Table 1. Impact of post-calving metabolic diseases (New York Dairy Farms)

	Hypocalcemia	Retained Placenta	Ketosis	Left Displaced Abomassum
Deaths %	4	1.5	0.5	2
Sold %	5	6	5	8
Delayed days to conception	13	15	10	12
Discarded Milk, liters	0	150	0	140
Lost Milk, liters	130	250	230	400
Average Cost (1998 USD)	181	206	151	312

It is important to note that these losses assume only one problem occurs but we know (further analysis of the above data) that a cow that had hypocalcemia is 8.9 times more likely to have ketosis, 2.8 times more likely to have a retained placenta, and 3.4 times more likely to have a displaced abomassum. This 'domino' effect regularly causes havoc within herds as people 'treat' cows but never correct the underlying problem. Israeli data shows that these production losses are a result of lower peaks and a delay in reaching peak milk. As herd productivity increases, the

losses per cow increase as total lactation yield is primarily determined by peak milk production.

As easy as it sounds, managing the transition cow is dynamic. Changes in weather, stocking rate, body condition score, calving ease, mood of the people working with the animals, shifts in forage quality and mineral levels, makes this a critical period. I implement quality control protocols during this phase including standard operating procedures, check lists, and monitoring to ensure that cows come through healthy and able to produce to their potential. We must remember, these cows are new 'mothers' and deserve our attention.

In all stages of consulting, a critical component is records analysis. Decisions and recommendations can not be made with missing or inadequate data. Additionally, the data must be centrally located so that analysis can comprehensive. For example, a veterinarian may state "we treated 10 cows for retained placenta last month". Is this a good number? How is a retained placenta defined? Where there 20 other cows that were retained but did not require treatment? How many fresh cows were there? Where there other disorders? How difficult were the calvings? Did the same person assist these cows at calving (intervened too early is a possibility)? As consultants, we ask these types of critical questions. Why? When we do this, we are trying to look at the overall situation to find the root cause. Just as it takes high quality data to do trend analysis, it takes a trained 'eye' to spot and interpret the trends.

An underlying value I prefer my clients to subscribe to is commonly known in manufacturing as 'continuous improvement'. This simple term can be daunting to implement as it means we are always questioning our current boundaries, or our comfort zone. This is something I practice personally and professionally. I always ask 'can I (or we) do this better?'. Seldom is the answer no. Sometimes the answer is yes, but not cost effectively. Most of the time the answer is yes and sometimes it is very uncomfortable to recognize a personal or business weakness. But, once recognized, we can being to change it thus expanding our boundary. Businesses that have adopted continuous improvement clearly show market growth, profit growth, and greater employee satisfaction.