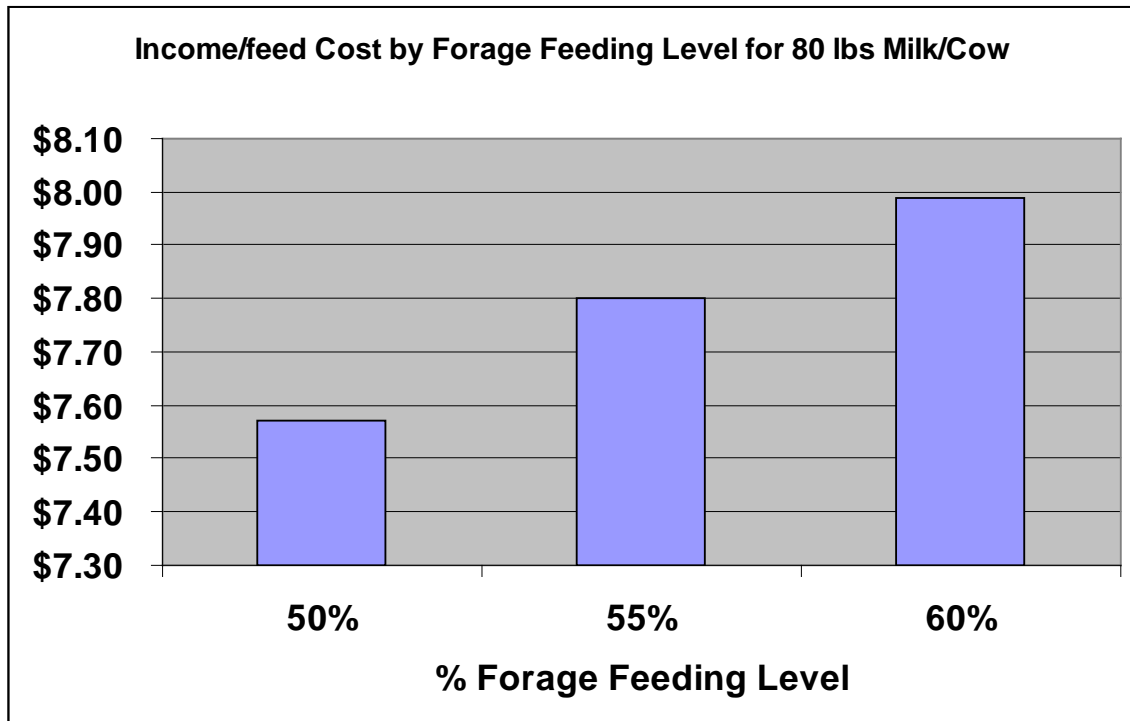


A New Piece For The Dairy Puzzle
Alternative Approach to Record High Grain Prices
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There are been more fundamental changes affecting the competitive position of the dairy farm in the past year than in the last 30 years. If you have not changed your profitability picture is in for a rude awaking.

There are things you control and things out of your control. Knowing the difference is what separates profitable farms from the rest. You cannot control the market price for grain. Beating up the grain sales person may mentally make you feel better and they feel abused, but it will do nothing for your bottom line. You can however control how much, and what you buy to maintain top production from your animals.

Across NY and on numerous farms in the region, dairies are feeding greater than 60% forage in their diet. There are several herds at greater than 65% forage that maintain production well over 80 lbs of milk. It is no longer a fringe idea, but rather a key piece in the new dairy puzzle for you to be profitable. The absolute pounds of forage dry matter will vary depending on the milk production level, dry matter intake, and most importantly – the quality of the forage produced. This year’s high quality feed most farms have produced should make this forage feeding level possible.



From the graph (put note with graph to put on front page)

You can see that a balanced ration for 80 lb cow with good feed (not tops) can support milk over a wide range of forage: concentrate ratios. Where is your farm?

The fundamental concept is to **maximize the nutrients from home grown forages, while leaving just enough room for concentrate to finish meeting the nutritional needs of the animal.** It is not a new idea to feed a cow as a cow – an animal designed to utilize and optimize forage consumption. The new part is the realization that nutrients from home-grown forages cost less than half as much as the same nutrients purchased, and can produce the same or more milk. The benefits are more money in your pocket, in many cases more milk for less cost, and less medical costs. Cows will last longer (make more profit) in the herd, and for farms struggling with nutrient management – there are less nutrient excesses.

For some farms, the myth is that if you feed a high forage diet, you will be shorting the cow's nutritional needs. The rumor is they will milk well for a little while and then crash because of excess loss of condition. This will happen REGARDLESS OF FORAGE FEEDING LEVEL if you are feeding an unbalanced ration. If you go from an unbalanced ration to a balanced one, the cows will improve in production – sometimes immediately. If you go from a balanced ration to a new balanced ration, the cows normally drop for a day or so and then return to their former production as the rumen adjusts to the new forage. This is normally what happens on a farm with any ration change. One herd that moved up the forage feeding level slightly, had a \$0.30/cow/day savings on the ration at a cost of \$0.50 in lost milk production – FOR TWO DAYS. The herd then returned to its former higher production level and the farmer was able to pocket the \$.30 savings from the new ration.

Cow Health. If your vet is a close relative and you want to maximize their take home pay, then you may have no reason to change. If your costs are above average or you want the majority of your vet work to be routine rather than emergency calls, forage-based diets can help.

The underlying area of culling is often damage from acidosis or sub clinic acidosis. The 2001 Nutrient Requirements of Dairy Cattle, states “rumen acidosis is associated with the feeding of diets with higher amounts of grain in them.” They also state “high forage diets produce acids only slowly and stimulate release of large amounts of saliva as they stimulate mastication.” “Rumen pH tends to be higher on forage diets.” They compared a 60:40 concentrate: forage diet to a 40:60 diet. The higher concentrate diet “increased the number and incidences of clinical lameness, and decreased hoof hardness.” Further, it states” nutritional management has been identified as a key component in the development of laminitis, particularly the feeding of diets high in fermentable carbohydrates.” If you have an acidotic, or sub-clinical acidotic herd with fried rumens and walking on their knees from laminitis, you will see improvement as you gradually go to a higher forage diet. The full effect will not be until a full lactation later (if the animals are not irreparably damaged). They need time to heal.

For those switching, the improved cow health is showing up in strong improvement in components – a key part to increasing the take home pay of your dairy farm.

Successful High forage feeding:

The first step is the cow – how big is she? I (an agronomist) am appalled by the number of high quality dairy farms who have the best cows around – yet the ration is based on a mythical 1350 lb cow. At grain prices half of what they are now, by using the actual 1600 lb cow instead of the mythical 1350 lb cow resulted in \$16,000 increased profit from a 100 cow farm.

	Maximized forage in 1350 lb cow	Maximized forage in 1600 lb cow while maintaining milk production
Lbs Predicted Dry Matter Intake*	45.1	49.9
Lbs Corn Silage DM	11	13.1
Lbs. Haylage + 1 Lb. Hay DM	12	14.1
Lbs Concentrate	21.2	20.9
Milk supported by energy	72.7	75.4
Milk supported by protein	72.7	75.1
% forage in diet	52%	68%

The next step is part of the first. The best ration, with the best forage, cannot be optimized if you do not know what the cows are eating. It is amazing how many times people will want rations balanced to the nearest gram of special minerals or additives, and still have no idea of what the cows are eating because they haven't MEASURED. What is ACTUAL DRY MATTER INTAKE? The only way to tell is to take the total pounds fed minus the weigh-backs (leftover feed). Without the weigh-backs you are guessing on the most critical number of the entire ration. Density of the ration depends on body size, intake and production. No ration, high or low forage, can be optimized without this calculation. A low forage ration can have enough slop to cover your guesses, but there is no room in the new dairy puzzle for profit if you cling to guessing what your cows need. Tracking this information will be a tremendous help for your nutritionist to base the ration on YOUR cows, not some predicted number.

For farms successfully feeding a high forage diet, the rule is: **quantity is good, but quality is crucial.** Forages were harvested based on NDF not protein. Wide swath for rapid dry down preserved the quality and sped the forage to the storage. This system greatly increased the quality and quantity from the field. Keep in mind that you need sufficient storage space. Going from a moderately low forage feeding level of moderately low forage quality to a moderately high forage feeding level of moderately high forage quality can mean **AN INCREASE OF MORE THAN 45% MORE FORAGE IN STORAGE**. You need the forage before you can feed it. Additional bunks and high quality bunk covers preserved the quality of what was harvested. For successful high forage feeding farms, feed management went from random moisture and dry matter intake checks, to three times a week (more on days of intense sun and precipitation) that formed the basis of the next feed mixing decisions. Feeder accuracy in making the TMR was improved. All of this was to successfully increase the amount of forage fed. The goal was 1% of the animal's bodyweight from forage NDF. Most farms are at .75% so they have a huge amount of nutrients that can be obtained from their forage rather than from more expensive sources.

Those wanting the increase profitability of the high forage diet need to plan for the 35% increase in the amount of forage in the ration (lowest to highest). The increased forage feeding needs to be produced and stored somewhere. This year's crop is requiring many farms to put aviation lights on the top of their bunkers because they are piled so high. A high forage diet is optimized by highest quality forages. Undersized storage systems can take great forage and convert it into garbage before your cows eat it. High forage diets require just that: high forage amounts. If you are not sure if your system is adequate, contact your county agent and have them evaluate the balance of your production, storage, and feeding system before you leap.

For those on a TMR, switching from the lowest forage diet to the highest forage diet means a 35% increase in the amount of forage in the ration. If your **mixer wagon** is maxed out now on volume, you could see a decrease in production due to poor mixing. The best ration and forage in the world can be turned into garbage by over mixing. Some farms have been able to work around this by adding another feeding time. This works especially well for farms that feed once a day. Only you can evaluate the trade off of the benefits of high forage diets against the cost of increasing chore time. If your present mixer is nearly worn out, then the answer is much simpler and potentially much more profitable – go to a bigger mixer.

Other Factors that Affect High Forage Feeding

The items covered so far – real cow size, dry matter intake measurement, sufficient storage, and forage moisture tests are extremely critical to making a high forage (or any forage level) diet work. The final item will not make or break high forage feeding, but rather set the absolute level to which you can raise the forage feeding level. The ultimate factor that controls the total level of forage in high forage diets is the **QUALITY** of the forage that **REACHES THE COWS MOUTH**.

Harvest timing, cutting and wilting management, silo management, and feed out, all affect the **quality of forage reaching the mouth of the cow**. For those switching to high forage, research at Cornell has found that forages can vary tremendously. More frequent samples will assist you to stay on top of this critical factor.

One of the most prevalent declines in forage quality that limits maximizing forage and milk production is the management of the bunk face. One farm that made a point of changing their management from having “some” loose feed to having little to none saw a 5 lb./cow/day increase – while feeding the same ration (a cool \$30,000 increase on 100 cows). Feed quality needs to reach the mouth of the cow before it can be counted.

Making the Transition to Successful High Forage Feeding

Until now we have been covering factors up to the ration itself. You can do all of the above and still not have an increase in production or decrease in cost. Worst, you could have a production drop and it will not be the fault of the ration, but of the management leading up to the ration.

As with any ration change, gradually introduce the change, with daily milk /cow charting and dry matter intake calculations to track what is really going on in the cow. By taking step increases of 2% forage (eg. going from 50% forage to 52% forage) with corresponding changes in the rest of the ration to maintain a balanced nutrition will

produce a slight drop (as any ration change does). After a few of days, the cows have stabilized on their new ration. After a week of stabilized production, then introduce the next step.

The worst-case scenario, is where the switch is made, the cows drop and don't recover. Inevitably a non-nutritional factor that had been band aided over before is uncovered (poor bunk management, over-under mixing, lack of water, poor ventilation). It is much easier to blame the nutritionist or the ration then to look at the foundation of milk production

You can complain about high grain prices. You can abuse your nutritionist. You CAN take steps to put your farm back in to the picture of the new puzzle of the dairy business. The northeast has an advantage over most of the country in the quality forage we can produce – now you need to capitalize on that advantage by moving your herd to over 60% forage diet. The only way to move is to know where you are and where you are going. The Dairy Farm Business Summary tells were you are and sets the goals for moving ahead the next year. For month to month guidance, the Dairy Profit Monitor (www.dairyprofit.cornell.edu) on line program of herd and financial data gives immediate analysis of your business for that month. The simple Pro-Dairy milk production book (available from Cornell Cooperative Extension) can give you day by day feedback as you increase your forage feeding levels.