



## QLF LIQUID FEED AS AN EFFECTIVE FEED SOURCE TO DRIVE MILK PROFITABILITY IN TODAY'S MARKET WITH HIGH COMMODITY PRICES

Current world geopolitical and economical situations sparked the sharp increase of commodity prices. As of March 2022, corn is trading over \$7.5 per bushel and soybean meal is trading near \$500 per ton. Feedstuffs such as some commercial fatty acid supplements nearly doubled their prices compared to a year ago. Many predict prices of commodities like corn and soybean meal to stay high for at least another year. Dairy producers are motivated to control costs as many of them are struggling to pay for fertilizers to go through planting. On the bright side, the USDA class 3 milk price has increased recently to over \$20 per hundredweight, with milk fat at \$3.02/lb and milk protein at \$2.3/lb as of Feb 2022. Producers are trying to maximize milk component output in a cost effective manner.

### QLF can help partially replace starch and protein

QLF contains both highly digestible energy and protein. The concept of synchronization between protein and carbohydrates in ruminants is known among nutritional professionals. If we provide rumen microbes a fast energy source like molasses sugar, they grow rapidly. In the meantime, if we provide microbes with quick nitrogen source like urea, they can efficiently assimilate the nitrogen and convert to microbial protein. Rumen microbial protein is the highest quality metabolizable protein with a desirable profile of amino acids to optimize milk component production. More protein provided by rumen microbes allows the farm to reduce dietary soybean meal, canola meal, or other rumen bypass protein supplements. Feeding 4 to 6 lbs of a QLF product with 15 to 20% CP is recommended because sufficient amounts of sugar and urea are needed to jumpstart rumen bugs and enhance rumen fermentation dynamic. Even though the price of urea has gone up dramatically in recent months, urea is still much more affordable to feed than bypass protein because of the low feeding rate. Feeding more urea through QLF and cutting back some other protein sources can reduce protein costs.

### How much corn and soybean meal can be replaced by QLF?

By feeding 4 lbs (as-fed) of a typical QLF lactating cow liquid product with 15% CP, a herd can replace 1.83 lbs corn and 1.03 lbs of soybean meal to achieve the equivalent level of energy and CP.

If we use \$300/ton corn price, the replaced 1.83 lbs of corn is worth 27.5 cents. If we use \$500/ton soybean meal price, the replaced 1.03 lbs of soybean meal is worth 25.8 cents. The replaced corn + soybean meal is 53.3 cents. If we put a 5% shrink on these two ingredients, the actual replaced feed is 56 cents. A typical QLF lactating cow product with 15% CP at 4 lbs feeding rate is around 50 to 55 cents depending on the region. Therefore, feeding QLF should not increase ration costs and should provide savings if the ration is rebalanced properly. The digestibility and utilization of sugar is better than starch and protein, and this is not accounted in this calculation. This calculation also doesn't include improved fiber digestibility, increased dry matter intake that translates into higher milk yield, and enhanced microbial protein growth that translates into higher milk components.


### How much dietary fat can be replaced by QLF?

Feeding a rumen bypass fatty acid product may increase milk fat, but oftentimes the return of increased milk fat is much less than the input cost of feeding the fatty acid product. This is because the conversion efficiency of dietary fat to milk

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fat is low. The return of feeding fat products is especially poor since some commercial products have nearly doubled their prices. Nevertheless, feeding certain types of fatty acid products may improve post-fresh cow energy balance and reproductive function. Different fat and fatty acid products contain various levels of energy. If we use an energy density of 2.5 Mcal/lb for fat in this calculation, feeding a QLF lactating cow product with 15% CP at 4 lbs feeding rate can replace 0.5 lbs of fat and 1.2 lbs of soybean meal.

If we use \$2000/ton fat price, the replaced 0.5 lbs of fat is worth 50 cents. If we use \$500/ton soybean meal price, the replaced 1.2 lbs of soybean meal is worth 30 cents. The replaced fat + soybean meal is 80 cents. Feeding QLF to partially replace dietary fat can offset some of the price increase of fat products. From the energy standpoint, QLF provides quickly available digestible carbohydrate to improve energy balance and drive milk production.

### **Return on milk components**

As of Feb 2022, milk fat is at \$3.02/lb and milk protein is at \$2.3/lb. An increase of 0.1% unit of milk fat will generate additional profit around 25-30 cents/cow/d; an increase of 0.1% unit of milk protein will generate additional profit around 15-20 cents/cow/d. We believe feeding QLF can easily help accomplish that even without accounting for the increased milk yield. The potential return in milk components is can easily exceed 40 to 50 cents per cow per day.

### **Other benefits**

QLF liquid feed is formulated using high quality ingredients. The product profile is extremely consistent, which optimizes rumen fermentation to support milk components. QLF liquid feed stored in a tank has very little to virtually no shrink compared to other feedstuffs. QLF liquid feed stimulates feed intake, reduce sorting, and improve forage digestibility, all of which help improves milk and milk components.

### **Summary**

In today's market conditions with high commodity prices, QLF liquid feed can be fed to partially replace starch, fat, and protein to make ration more cost effective. For example, by feeding 4 lbs of a typical QLF lactating cow liquid product with 15% CP, a farm can can replace 1.83 lbs corn and 1.03 lbs of soybean meal to achieve the equivalent level of energy and CP. Feeding 4 lbs of the QLF product can also replace 0.5 lbs of fat and 1.2 lbs of soybean meal. Feeding QLF should not increase feed costs after rebalancing the ration. In addition, if a farm can get an increase of 0.1% of fat and 0.1% of protein from feeding QLF, the return in milk components can easily exceed 40 to 50 cents per cow per day.