



High-Forage Diets More Important than Ever by Larry Hawkins, PAS

With grain prices soaring due to ethanol production and no end in sight, dairy producers are facing new realities in profitable diet formulation for today's high producing dairy cows. This new reality is that producers are looking for less expensive alternatives to corn to push production. Some have gone the route of using more by-products to replace grain. However, regardless of how inexpensive the byproduct is, it still must be purchased! Others have looked at using various warm- and cool-season grasses due to the higher digestibility of these forages.

Higher digestibility is the key to energy value in any feed. Grasses such as (warm season) Alta Gene-Six forage sorghums and sorghum sudan crosses, (cool season) Trical® triticals and tall fescues, festuloliums and ryegrasses provide the two most important attributes to high-forages feeding. Number one is very simple—you can't feed more forage unless you have ...more forage. The warm season grasses and triticals provide double cropping and crop rotation opportunities that are less available in straight alfalfa and corn silage rotations by themselves. The tall fescues (in the upper Midwest) provide added tons (1 to 1½ tons DM per acre) when partnered with alfalfa. These crops allow for higher forage production on the same acres. Obviously, yield per acre is a huge driving force on any cropping operation.

The second essential factor in high-forage feeding is quality (read "energy"). Energy takes up the most room in any diet and so it is vital to get energy-dense ingredients into a diet that still provides digestible fiber. Remember wheat straw has fiber, but little energy!. Again it is real simple—you can't get much milk, feeding higher amounts of average- quality forages. A few years ago, at the Four State Dairy Nutrition Conference, a report was presented which showed that as larger dairies fed more corn silage and less alfalfa, less manure was produced and more of the feed was turned into milk. The range of feeding was 25/75 to 75/25 (CS/Alf). With this change to higher CS ratios, 14#'s less DM of manure was produced. It is simple to understand if we look at the NDF-d's of alfalfa (40 to 50% compared to corn silage (50 to 60%)

NDF represents a measure of the less digestible part of a feed. To most nutritionists, NDF represents a negative—the higher the NDF (the less digestible part) the lower the energy. However, as more is being learned about NDF-d, we are seeing the old rules, i.e. 0.9% of body weight (BW) of forage NDF (f-NDF) being the absolute limit on the amount of forage a cow could eat (due to rumen fill) being reconsidered. Our previous notion that all NDF is alike is now being blown out of the water. The new reality here is that as digestibility goes up, more forage can be fed without a negative production effect.



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The table below shows how the inter-seeding of modern European-sourced cool-season grasses into alfalfa fields has changed the game. This chart is from the results of the 2011 World Dairy Expo Forage Analysis Super Bowl. In each category of forage the average stats of the pure alfalfas are exceeded by the mixtures of grass and alfalfa. In addition, in the Dairy hay category the best grass mix was 2nd, in Dairy Haylage, the best grass mixes were 1st, 2nd and 4th and in Baleage, the grass/alfalfa mixes were 1st, 2nd, 3rd and 4th. For the Dairy Haylage category, eight of the grass using finalists were from herds from 650 to 4000 cows. Also, a majority of our submissions of mixed grass and alfalfa contained Byron's Kingfisher Alfalfas.

Category		Number of Entries/finalist	Milk/Ton (#'s)	NDF-D (%)
Dairy Hay	Pure Alfalfa	14/20	3022	48.2
	Alfalfa/Grass	6/20	3070	52.5
Dairy Haylage	Pure Alfalfa	8/20	3059	48.6
	Alfalfa/Grass	12/20	3250	55.5
Baleage	Pure Alfalfa	4/10	2877	46.5
	Alfa;fa/Grass	6/10	3138	62.0
Commercial Hay	Pure Alfalfa	20/20	2878	46.3
Grass Hays	Pure Grass	10/10	3175	73.8

The really telling category is when you compare the commercial hay division which had virtually no grass to the grass hay category. The average digestibility of the pure grasses was 73.8% (NDF-d). This can also be compared to the best corn silages where the average of the top ten BMR samples averaged 62% NDF-d and the top ten Masters Choice entries were 59%. The weighted average of all the alfalfa finalists is be close to 47%.

The good news is that we now have modern European improved grasses which really deserve a place in modern dairy diets. The big improvement is the late-headedness, which allows for timely cutting where both the alfalfa and the grass are at optimum maturities. Benefits you can obtain from including grasses in your forage program include:

- Increased yield



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- Increased quality (energy)
- Ability to feed higher forage diets without sacrificing yield
- If you feed a higher forage diet you will also increase herd health by decreasing acidosis and lameness. This is a huge and sometimes hidden opportunity for increased profitability.
- Increased butterfat test
- And for acres with pure tall fescue and festulolium, you will have a crop with the highest uptake of nutrients for Nutrient Management Programs and opportunity to apply nutrients at every cutting.

Byron Seeds, LLC is attuned to selecting and managing the establishment of both cool- and warm-season grasses to fit your farm wherever it is in the Midwest. The answers are not the same in every area we work in, but your local Byron Seed Dealer will have this information about the crops that will help you achieve a more prosperous 2012.