



Forage Maturity Controls Quality

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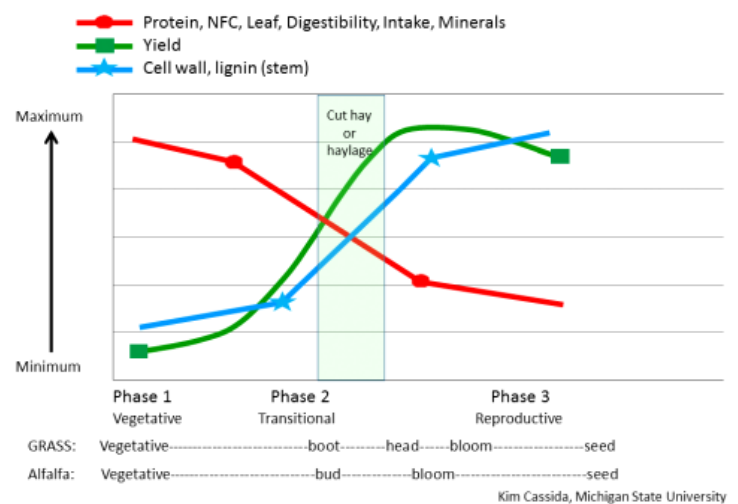
For alfalfa producers, the first cut has been begun or completed and safely stored. Why? Because they are trying to put up good quality Dairy feed that is high in energy and protein (see [Green Gold](#)).

Very soon, the grass hay harvest will start with the majority being stored as round bales for winter feeding to the Beef herd. Depending on protein and energy levels, this hay may be adequate for beef cows to make it through the winter in good condition and continue to be productive.

There are several things that will influence the nutrient content of a hay crop but the greatest factor is the stage of maturity that the plant is harvested at.

When grass is cut young and leafy, the protein content could be 13-15%. Once a

Forage Quality vs. Quantity



seedhead appears, the plant begins to produce a stem with lots of fiber to extend the seedhead. The plant has changed from vegetative (producing leaves) to reproductive (producing seed). Once the seedhead appears (late boot stage), the protein and energy level in the forage begins to slowly decrease, while the fiber level slowly increases.

The timing of hay cutting will influence the nutrient content. If it is cut at the late boot stage, high quality hay can be produced. But the levels begin to drop, so that if the

Crude Protein and Acid Detergent Fibre of Tame Grasses Cut at Weekly Intervals Starting June 1

		Week						
		1	2	3	4	5	6	7
Brome	% CP	26.2	23.4	20.3	17.8	15.4	12.3	12.4
	% ADF	18.2	20.4	25.6	28.3	31.6	32.5	31.3
Crested Wheatgrass	% CP	22.8	20.7	18.0	15.6	14.0	11.4	12.7
	% ADF	19.6	22.6	27.0	29.9	32.3	34.9	32.5
Orchardgrass	% CP	24.5	26.0	21.5	18.7	17.3	15.8	15.0
	% ADF	16.1	22.5	25.7	27.7	29.3	29.0	27.5
Tall Fescue	% CP	22.6	23.1	19.8	17.1	15.8	11.9	12.3
	% ADF	16.3	21.2	24.3	26.1	27.5	30.3	26.8

Adapted from: Suleiman et al., 1995. Comparison of Yield and Quality in Prairie Grasses in One Cycle of Growth. Proc. Western Sec., Amer. Soc. An. Sci

plant reaches the seed stage protein levels can be cut in half. This decrease does not occur rapidly, but happens gradually over time.

If you look at the various studies that have been conducted, there is virtually no difference in the protein and energy level between tall fescue, orchard grass, and timothy if they are all cut at the same stage of maturity. Differences occur if they are cut at different stages.

To produce high quality grass hay you need to make timely hay harvest a priority. Keeping in mind that maturity provides us an indication when we should harvest grasses and legumes.

First, focus on cutting at the late boot stage. Research has shown that for every day forage displays a seed head or bloom, digestibility declines by $\frac{1}{3}$ to $\frac{1}{2}$ percentage units. The weather may not cooperate, but that should be your goal.

Second, adding legumes to grass hayfields such as red and white clover or alfalfa which have higher protein and energy levels, will raise the nutrient content a few percentage points.

Mother Nature can make timely harvest a very difficult task due to frequent rains or poor drying conditions. However, harvesting overly mature forage generates lower quality forage that will affect beef animal productivity at all stages of development. If you are going to go to the expense and effort to make hay, you might as well produce good quality hay. Cutting early and planting legumes will improve your hay quality.

If you are going to be short of feed and/or are going for tonnage, you might want to consider cutting some of your fields for high quality feed to supplement those fields that are cut late and could possibly be lower in quality.