



ADVANCED AG SYSTEMS'S

# Crop Soil News

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"It is the crops  
that feed the  
cows that make  
the milk  
which creates  
the money."

Advanced Ag Systems  
Research, Education, Consulting

## Rescuing Winter Forage Quality

The crazy winter has moved into a crazy spring. Here in Tennessee, we have bounced between 85°F and 25°F in just a couple of days. Our triticale is well past quality and was harvested a couple of weeks ago. The bursts of warm days really rushed it through. North of the Mason-Dixon line (Pennsylvania's southern border), it is quickly moving past the optimum of stage 9 (flag leaf). Further north in New York, New England, and the upper Midwest (Michigan, Wisconsin, Minnesota) and southern Canada, the triticale and rye is still well behind due to the cold weather.

This is very fortunate as the region is facing a week of rain and cool temperatures. It is frustrating for the farms wanting to get the crop in as very high-quality dairy forage. The good news is the cool temperatures that have, and will continue to hold the crop at an immature stage. Reports from New York and Vermont indicate that the triticale and some of the rye plantings are still immature. Heads are 6 to 8 inches down in the stem. This should hold quality until after the rain stops. Averages mean nothing. **What counts is what YOUR crop is doing on YOUR fields and what stage it is at.**

You need to visit each field and note the stage of the plants. Use your knife to split the stem to determine where the head is down in the stem. If the head is within an inch or two of emerging from the boot, and the next four or five days are rainy, walk away from those fields and get them later for dry cow or heifer feed. Do NOT try to harvest them as soon as the weather breaks if you have other plantings that are not that mature. Focus on getting the dairy quality forage in first. That is where the money is made.

If the head (not the awns attached to the head) is still two inches down, that field will probably be past by the time the rains stop (see exception below).

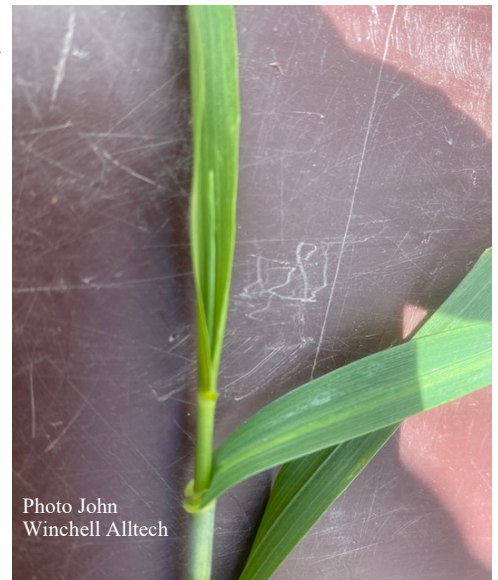


Photo John Winchell Alltech

Flag leaf is just emerging. This is a warming sign. The key is where the head is in the stem (Picture below).

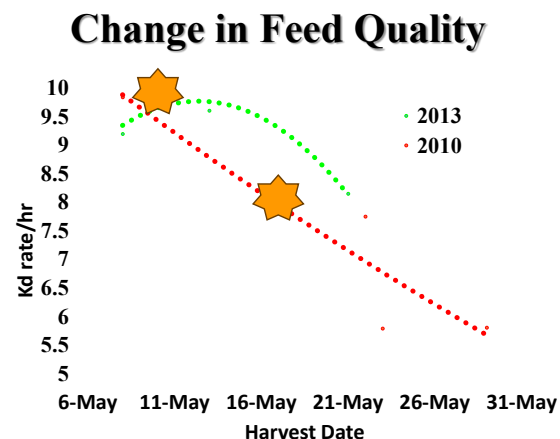


Photo John Winchell Alltech

Splitting the stem will tell you how much time you have before harvest.

Heads that are 6 inches down the stem, as reported by a couple of sources, the forage will still be of good quality when the rains stop in 3 – 5 days. You need to have your equipment and storage all ready to move when the weather breaks. Use this wet weather to get it all ready. Every minute of mechanical diddling when the sun comes out is not going to help you get the crop harvested.

The wild card is the temperature during the rainy period. If cool to cold, it will significantly hold back maturity and preserve forage quality. As you can see in the graph at the right, 2010 year was normal temperatures, and the quality decreased with each day and increasing maturity. Compared to 2013, when we had very cold temperatures (nights dropped to 35°F – 40°F). The quality, as measured by Kd digestion rate/ hour, held right through early boot emergence—very unusual but we will take it. I don't know what you will have in the climate conditions of your farm this year, but cool or cold temperatures can be a saving quality grace for a delayed harvest.



2013 held quality longer than normal due to cold night temperatures. Hopefully 2025 will help the same

Yields of this crop are often double to triple the normal silage yield from a heavy first cut alfalfa crop. The problem is that it can present a real issue drying in the field. Swaths only dry on the outer  $\frac{3}{4}$  of an inch; when that dries, the next layer starts to dry. Traditional narrow swaths of winter forage, conditioned or not, will be 2 to 3 feet thick. The higher the quality forage (less lignin) the denser the windrow. **This is not drying, it is windrow composting.** It is 100 % humidity inside so it doesn't dry. It sits wet for multiple days, with natural plant respiration burning off the highly digestible sugar and starches – the milk producing energy. It then ensiles poorly because of the lack of substrate (sugars) for ensiling bacteria to use. The outer layer is dry as baled hay and the rest is wet slop still at mowing moisture; a perfect scenario for clostridia fermentation and high butyric acid formation. Not something with which to make milk.

Laying the swath out at greater than 80% of the cutter bar width will expose more of the plant tissue to sunlight. Even though the plant is cut off it is still photosynthesizing. The plant takes carbon dioxide and water to make sugars and oxygen. From cutting moisture until it gets to less than 55% moisture, there is **NO FASTER DRYING THAN PHOTOSYNTHETIC DRYING.** An added bonus is that instead of respiration reducing the energy, the photosynthesis of the sun-exposed forage is increasing the net energy of lactation as the crop dries.

The other caution is not to use the drop down deflector shield on the mower to make a wider swath (photo next page). My research has found that as highly digestible, low lignin forage hits this shield, it makes non-drying lumps as it comes out the back of the mower. Again, the better the forage quality, the more dense the lump. We suggest it flow through without hitting any shield.



Swaths greater than 80% of the cutter bar whether sickle bar mowed on left or disk mowed on right, are critical for maximum photosynthetic drying. Mowers not able to do this should have the swaths tilled to 100% immediately after mowing.

With expected yields this year, even laying full-width swaths, the heavy crop will produce a mat 6 – 8 inches thick that only dries on the surface. After two hours of drying, the surface is too dry to photosynthesize, and the lower layers are respiring. Tedding at this time will bring the lower wet layers into the sunlight to photosynthetic dry. Mowing at 3 inches or more allows



this process to be completed without mixing dirt (ash) into your good forage. For those with mowers that only leave a swath 65% of the cutter bar width (most machines), tedding as soon as you are finished mowing will allow you to have wide swath drying. In this case, 4 -5 dry matter tons yields (common south of New York latitude) might need a second tedding if originally mowed narrow (swath less than 80% of the cutter bar). A wide swath will usually need just one tedding two hours after mowing. **Watch the forward speed of the tedder.** You are spreading 2 – 4 times the yield of heavy first-cut alfalfa. If you go forward too fast for the volume of material, the tedder will grab and throw a compact lump of forage that will not dry.

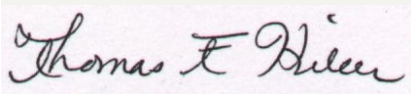


The left swath with the deflector down clearly shows the non-drying lumps it makes. On the right, the flow through wide swath is uniform and less dense to speed photosynthetic drying.

We highly suggest a homolactic bacteria (without enzymes) to make sure you are preserving the forage properly. There are some now available that are designed for high-sugar wet forages that also are said to inhibit clostridium formation. With all the sugar and highly digestible fiber in winter forage, you don't want to trust fermentation to whatever is present in your field.

Finally, strive for haylage in a day, even if it is a little on the wet side, in order to preserve the sugars and greatly reduce the potential for clostridia and butyric. If the night temperatures drop below 40°F, the cold temperatures greatly reduce plant respiration. We are seeing that under these weather conditions, you might be able to leave it overnight and finish drying the next day.

Sincerely,



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Agriculture**

