



ADVANCED AG SYSTEMS'S

Crop Soil News

<http://www.advancedagsys.com/>

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

Outside the Box Forage Harvesting What Box???

With the nearly every day shower for the past couple of weeks, fall harvest of forage is ever more challenging. The biggest limit on the use of oats in the fall is weather like we have had where it mists or rains nearly every day. This, coupled with the cool temperatures, shorter day length, and less intense sunshine as it is lower on the horizon, add a dollop of high yielding (6 to 10 ton) silage, makes a perfect storm for not drying to 35%. Dragging it across the dirt for three days before giving up and chopping it wet anyway is not how you make high quality forage. On the plus side, we have very high sugar levels (20% DM basis) from greatly reduced night respiration as temperature drops into the 40's and 30's F. This has created a paradox in that the crop is harder to dry but easier to ferment. Wide swathing (greater than 80% of cutterbar) is critical to remove moisture.

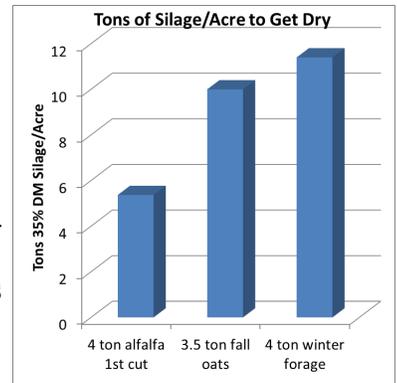
After 3 - 4 hours of drying, we have found that it helps to tedder the crop. A word of caution: this is not your half ton/acre third cutting alfalfa. The crop is 4 - 7 times heavier. You need to slow down your ground speed with the tedder for two reasons. First, you will destroy the tedder moving that much material through too fast. Second, instead of loosening and spreading, you are making compacted tedder balls. This is where the tine grabs too much and then compacts it like a snowball and chucks it out the back. They are hard to see unless you get off the tractor and check what you are really doing.

For those chopping, you may want to increase the length of cut on some of these wet, very highly digestible crops in order to maintain effective fiber, while reducing the number of cut cells that could produce excessive leachate (which carries away the sugar). For those round baling, I suggest testing a couple of bales as they will be much heavier than you are used to making. It is embarrassing to make your normal size round bale and then discover the tractor cannot pick them up! **Round bales must be wrapped the day they are baled.**

The most critical step we have come across was developed from some excellent work that Dr. Limin Kung conducted in Delaware out of our wide-swath haylage-in-a-day system for alfalfa. He found that **the more critical factor than moisture at harvest is to NOT mow and leave it overnight; that includes chopped and in the wagon overnight.** Reported in Miner Institute's May newsletter on Haylage 2012, Capture the Quality by Dr. Kurt

One of the greatest pains to human nature is the pain of a new idea It makes you think that after all, your favorite notions may be wrong Your firmest beliefs ill-founded.

Naturally.. Men hate a new idea, and are disposed more or less to ill-treat the original man who brings it. Walter Bagehot Physics



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Cotanch, on the impact of same day haylage and wet forage on butyric formation by Dr.Kung. http://whminer.org/Farm%20Report/2012_05.pdf . Kurt wrote: *Dr. Kung shared some data looking at various products where he ensiled 25-27% DM ryelage in minisilos, either immediately ensiled or chopped and left in the wagon for 12 hours after mowing. All test product and control samples had similar pH of about 4.6, with varying levels of lactic and acetic acids, 0% butyric acid and 0.34% NH3 (ammonia) on a DM basis after 90 days of ensiling. Under the 12-hour delayed (next day) before ensiling condition, pH's ranged from 5.82 – 6.42, butyric ranged from 0.12-0.22% with NH3 0.90 – 1.04% across delayed treatments after 90 days of ensiling. Limin mentioned another study he conducted with alfalfa at less than 20% DM, and checked after 60 days of ensiling, there was no butyric acid for the forage immediately ensiled. For the forage that was in the wagon for 12 hours before ensiling, the levels of butyric acid levels ranged from 2.05 – 3.13% of DM, NH3 ranged from 0.97 – 1.10% of DM and lactic acid was 0% across all treatments. Dr. Kung said the reason is that “ delayed filling of cut/chopped material results in oxidation and utilization of fermentable sugars. If this results in a destruction of most of the fermentable sugars, then the good bacteria have no food to make lactic acid when conditions finally go anaerobic. The result is that clostridia dominate the fermentation process resulting in large losses of DM, high concentrations of butyric acid and extensive protein breakdown (thus the high NH3-N). If there are insufficient fermentable sugars, even adding a homolactic acid bacterial inoculant or buffered propionic acid will be of little benefit.”*

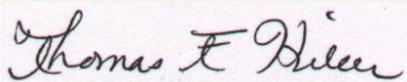
Bottom Line: leave it overnight in the field and you will have wet smelly slop. Ensile it the same day you mowed it, add the correct inoculant at the chopper/baler/bagger, and you can have very high quality, correctly fermented forage even with higher moisture levels in the silage. Over the past couple of seasons we have had more field experience (triticale winter forage, BMR sorghum sp., and fall oats) wide swathed and ensiled the same day it was mowed. **USING AN INNOCULANT** they got complete fermentation with no butyric formation from this very wet feed. What Inoculant? Dr. Kung suggests "**good straight homolactic acid type products**" to bring the pH down fast and actually limit some of the excessive wild acetic that is made. “ He is **not** recommending the *L. buchneri* types for these wet crops. *L. buchneri* is better suited for crops like HMC, snaplage, corn silage, high dry matter alfalfa silage and crops that are challenged with aerobic stability.

There is model for feeding this type of forage: grazed pastures. Dr. Larry Chase at Cornell said, “*The main concern with most wet forages is the generally high levels of fermentation acids produced and their negative effect on intake. This can occur even in wet silages (like corn silage) that have low levels of butyric acid. Butyric acid just makes it worse. In terms of sugar, the critical value is the one after fermentation. Dairy cows can consume high levels of wet, high quality pasture. Thus, it is not the water per se that may limit intake of wet fermented forages. It’s more of a fermentation quality issue. In terms of ration, the approach used in developing pasture rations could be a model. With high quality pasture, we can lower grain feeding to reflect the higher energy and the ability to grow more rumen bugs. The cows are able to consume higher levels of NDF from forage since fiber digestibility is higher. Unless there is a funny fermentation, I think we would just consider this a high quality forage and balance accordingly. Forage analyses should include fermentation parameters, sugar, NDF, lignin and NDFD, CP, soluble CP, etc.*”

This concept is a work in progress, but has a sound basis in how Europeans make silage – it is all same day haylage. Dr. Chase and I are both very interested in seeing a copy of the forage analysis with the fermentation parameters for these wet, same day ensiled forage.

The Bottom Line: If you can get the crop to 35% DM the same day it is mowed, then you are hauling a lot less water. If you get to the end of the day and the fall oats, winter triticale, sorghum sp., are not quite dry enough, we suggest it is better to put it in on the wetter side than to wait until the next day.

Sincerely,



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