

The Problem with Last Year's Corn

Some years, doesn't it seem like your corn silage doesn't have the same "punch" as last year? Even though it tested similar to previous samples. You did everything you could. Planted it as soon as you could. Fertilized, sprayed it, harvested and stored it correctly. And yet, it didn't seem to perform as well.

And then there is this guy down the road. His corn silage seems to be working fine and he has a similar management style. He even uses the same variety of seed you do. What is going on?

This last year, and in some areas, the year before last, were two of those types of years. The corn silage, earlage and high moisture corn performed well on some farms -and not on others. It's very frustrating to farmers, agronomists and nutritionists alike.

This year, in a brief field study, we decided to try and figure out why. We took three farms: a farm that was having great results-great production and components, one farm with mediocre results and one farm that had poor results. All three had similar good management styles, similar cow genetics, very similar diets and all three were free stall herds fed with a TMR. The initial

corn silage samples from all three farms showed very similar results.

We then sent in the TMR samples from each farm to a newly accessible fermentation lab. And that's where we started to see the differences. Let's talk about what we found out, what we can look for and what might help going forward. First, it helps to know a little bit more about the energy in corn and corn silage.



Cows need Carbs

Cows need carbohydrates-and lots of them to produce milk. **The rumen bacteria need the carbohydrates to thrive, reproduce, break down feed, produce microbial protein and ultimately drive production and components.** High producing cows need to sustain a healthy biomass (rumen bacteria) to produce milk and components, reproduce and remain healthy. The bacteria in the rumen need to repopulate on a regular basis to maintain the biomass as bacteria have a short life.

The bacteria make use of three main types of carbohydrates: sugar, starch and fiber. Each have a different rate at which they are utilized by the bacteria. Sugar, high moisture corn and corn silage typically have "fast pool" carbohydrates, meaning the fast pool starches and sugars are available to the bacteria within

Summer fat test checklist...

Fat test is such a huge issue, especially in the summer as both heat stress and photo light periods have a negative effect on fat test. Here is a short check list to check and see if you have something else that may be depressing the fat test.

1. Try to avoid slug-feeding

Slug feeding isn't always feeding too much grain at one feeding...it can mean feeding a TMR late one day and early the next. The inconsistency of the timing of the feed can cause rumen instability and a lowered fat test.

2. Watch for sorting

Cows love to sort TMRs. It is their favorite hobby! Sorting creates the same rumen instability that lowers fat test.

3. Look out for wild yeast

Wild yeast interferes with the rumen bacteria and may actually produce toxins that are harmful to rumen bacteria. Wild yeast thrives in the summer-best to check your forages for it.

4. Avoid to high of C18:2 fats

C18:2 fatty acids are unsaturated fat sources. Unsaturated fats can be toxic to the rumen bacteria if fed in high amounts. The most common is corn oil. If you feed a lot of corn silage, check to make sure the unsat fats aren't too high.

For a full fat test checklist, download www.monsonconsulting/info-2.net

Odds & Ends.....

Prices heard this week:

Corn: \$ per bu. \$2.64-2.87

Soybeans: \$7.51-7.84 per bu.

150 RFV Hay: Large squares are worth approx. 1.08 per point of RFV.

Springers: \$950-1275 med grade

Cull cows: \$0.45-0.63 per pound

Bull calves: \$75-135

Connections:

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* For sale: Holstein cows, you pick

* For sale: Fanning mill

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* For sale: Meyer 2636 V-spreader

* For sale: John Deere Square baler w/kicker

* For sale: Case IH 4840 Round baler

* For sale: 5 throw and 2 kicker bale racks

* For sale: NH 9 foot Haybine

* For sale: Hay/Baleage/haylage-call for list

If you have something to sell or are looking for something-don't hesitate to call or email.

There is no charge for the posting.



Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bonds." -Thomas Jefferson

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Jim & Carmen Monson

Ruminant Nutritionists

1-800-700-9334

cell: 715-768-0046 fax: 715-485-3266

mctech@centurytel.net

www.monsonconsulting.net

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the first 2-4 hours.

Moderate carbohydrate pools such as dry corn or lactose have a slower utilization rate at 5-7 hours and finally fiber, has a slow pool digestion rate-the slowness depends on the digestibility of the fiber.

All three pools should be in balance to maintain the biomass for optimal production. If there is too much fast pool, and not enough slow pool-you can have an overgrowth of bacteria and cause acidosis, for example.

So back to our little experiment. The fermentation lab measures these pools by reenacting the digestion of the cow and measuring the gases produced (energy). This accurate way to measure energy finally revealed the differences between the three samples: the microbial biomass was produced in a high level in the herd having good results and the other two had lower amounts of biomass produced. The difference was a lack of fast pool.

Normally, when you feed a lot of corn silage, earlage and/or high moisture corn, there is plenty of fast pool carbohydrates. So why then in the three diets, all with a great deal of corn silage in the diet, we have three completely different results in the fast pool-even though the initial samples looked similar: good starch levels, good 7 hour starch digestibility. Were the samples wrong?

Regular feed tests don't always work

Remember when your lab test only showed crude protein? Now we can break protein down and test for soluble protein and the

amino acids that are the building blocks of the protein. The current starch values are like the old crude protein-it just gives an idea of how much total starch is in the feed-not the availability or digestibility.

Enter 7 hour ISVD. This starch digestibility value estimates how much starch is digested in a 7 hour period. The problem is, the bacteria respond best to a balance that includes some 2 hour digestible starch, 4 hour digestible starch and 7 hour digestible starch. If the only value we have to work with is 7 hour digestible starch-does that mean the balance exists? What if it doesn't?

In the old days, when we didn't have amino acid numbers to work with, we tried to balance using a "blend" of protein sources to try to balance for them. We do that with starch right now. Typically, well-fermented high moisture corn, corn silage and earlage have high levels of 2-4 hour available starch. Dry corn and whey permeate have a slower rate-around 5-6 hours and some corn, like flinty corn have very slow rates of digestion. We use these feedstuffs, along with hay or haylage to balance the carbohydrate pools for optimum bacteria response. Usually, it works.

We run into problems when the 2-4 hour digestible starch isn't in the corn silage, hm corn and earlage. It may all be 7 hour starch-too slow for optimum growth and maintenance of the bacteria in the rumen. And your test from the lab can still show 90% 7 hour ISVD. It makes it look normal, even good.

That's what happened to some farms this year.

THE BUZZ...

Here are some of the latest things going on out there and our personal opinions of them.

This year's corn crop so far:

After all that talk on what happened to last year's crop on a lot of farms, let's spread some good news.

The corn looks awesome. It is off to one of the best starts ever.

Growing degree days are right on track as well and we have had plenty of sunlight. If weather holds for the season, we may have a great corn crop with normal starch levels.

This year's 1st & 2nd crop alfalfa/grass (so far):

Test have been coming back and the both crops hadn't tested as well as we had hoped. If you noticed, the RFV/RFQ are down because the crop grew very fast with all the rain and heat.

Having said that, unlike last year, we've had plenty of sun. The sun, through photosynthesis, helps the plant build carbohydrates-and as we talked before, cows need carbs.

First and second crop last year would test 140 RFV/RFQ and the cows responded as if it tested 20 points lower. This year 140 RFV/RFQ feeds out as if it was 140 RFV/RFQ. The estimated energy/carbs that are reflected on your forage test are actually there this year.

Look, calculations aren't perfect. Energy calculations on samples are based on the fiber amount and how digestible the fiber is-a very good educated guess, but still, a guess. This year, the forage tests are accurate.

Remember to check us out on www.monsonconsulting.net. !

The corn silage/earlage/high moisture corn did not have a "punch" to it-very little 2-4 hour carbohydrate digestibility. And in some cases, this is the second year for some farms. Why some farms and not others?

Enter "environmental genetic factor"

This is the term for how the weather influences genetic expression in plants, particularly corn. Typically, when we think of how weather affects the corn, we think of yields. Corns like BMR yield a lot less in dry weather, for example. And we know that in a wet, cool year, sometimes the corn doesn't mature and we harvest light test weight corn, less starch but still starch right?

Environmentally stressed plants not only effect yields, but may also vary the availability of the starch. So far, it seems that specialty corns like BMR, floury, etc. are more susceptible to weather events. So why some farms and not others?

Usually, when we think of stressed corn, we think of drought or hail-we expect to have some issues and we prepare for it. But stress can occur when it is cool as well. So here is the current theory: Last year, August, was extremely cool. We were counting the growing degree days and crossing our fingers that the corn would make it. Then came a week of 90 degrees in September and finished the corn. Unfortunately, it didn't remain unscathed-the starch profile was affected.

Some farms saw more of a problem with the starch profile, depending on how much rain they experienced during the cool

weather period that further stressed the corn. That is why some farms have an issue-and some barely noticed anything at all.

Knowledge is power

Now that we know that stressed corn can have a different starch profile than regular corn; and that cold, wet weather does as much stress to corn as hot and dry weather; we can plan for the possible issues before the crop is fed. If your corn silage doesn't seem to have the same "punch":

1. Run a fermentation test (IFM or fermentrics)

When in doubt, find out. Fermentation testing can help identify some hidden problems.

2. Increase the fast pool

Use a sugar source: molasses, candy, bakery waste to increase fast pool and help replenish rumen biomass.

3. Reduce the slow pool

Bring in digestible fiber sources such as midds or corn gluten feed to speed up slow pools that are too slow.

4. Help build with yeasts and/or microbials

These help feed and increase the rumen biomass.

5. Utilize amylase

Amylase is the only enzyme right now proven to break down starch and glycogen into simple sugars.

Finally give it a little time. Increasing biomass takes time, at least 14 days minimum. But now you know.