

Agri-Basics, Inc. Welcomes Greyson Smith

by Angela Breneman, Calf Specialist

Agri-Basics, Inc. would like to welcome Greyson Smith to the team as Management Assistant. Greyson is from Lebanon County and grew up working on his grandparent’s farm in the summers. He also has spent time on different dairy farms such as Ensenada Holsteins in Bucks County, PA and Table Rock Farm in Wyoming County, NY where he gained more dairy experience.

He graduated from Penn State University in May 2016 with an Animal Science degree, business management option. Since he was young he knew he would work with dairy cows. He continued that passion through college where he participated in the Dairy Science club.

Greyson also had the pleasure of being the Barn Manager for the Nittany Lion Fall Classic along with being the Chairman for the Dairy Expo held in the spring at Penn State. He was also the President for the Collegiate Farm Bureau and got to lobby for agricultural issues at both the national and state level which he enjoyed a lot.

Grayson will spend most of his time in the Elizabethtown office and can be reached at gsmithagribasics@gmail.com or by phone at 717-361-9266 ext.101 His goals for Agri-Basics, Inc. are to get the company name out in the marketplace and to promote the nutrition work that is done through the company. He also plans on working with the nutritionists to help them out with marketing, sales and support.



Nutritionists

Jim Hogue Manheim, PA	717-653-9433 jimbh3@comcast.net
Jim Longenecker Christiana, PA	610-593-2575 abjnklong@epix.net
Curt Umble Landisville, PA	717-898-0884 cumble@comcast.net
Tom Good Lititz, PA	717-626-8689 tcgood@dejazzd.com
Russ Kline McVeytown, PA	814-542-4486 russ@udderway.com
Tim Rutledge Reinholds, PA	717-371-7667 abt看@dejazzd.com
Wilson Eberly Ephrata, PA	717-656-4942 wilsone@emypeople.net
Herbert Bonnice, Jr. Tunkhannock, PA	570-836-2421 hbonnice@mymail.emcyber.com
Steve Vaughan Hartville, OH	330-354-3407 HealthyCows@gmail.com
Iron Rock Nutrition Dan Hillyer Dover, PA	717-308-1615 hillyerdan@comcast.net
Robert Davis Cochranville, PA	610-593-2961 davisrobert@zoominternet.net
Michael M. Campbell State College, PA	814-574-7259 mcampbell550@verizon.net
Homer Eberly Stevens, PA	717-336-3047 heeberly@dejazzd.com
Adam Zurin Manheim, PA	717-682-5103 azurin5001@gmail.com
Bob Nichols, DVM Waynesboro, PA 17268	717-262-5013 bndvm300@gmail.com

AGRI-BASICS, INC. • 1.800.361.9265 • agribasics@dejazzd.com • www.agribasics.com

“...meeting today’s
challenges, pursuing
tomorrow’s goals.”



The AGRI-VATOR

54 Brown Street • Elizabethtown, PA 17022 • 1-800-361-9265 • www.agribasics.com

SUMMER • 2016

DAIRY EDITION

Vol. 16, No. 3

Harvesting Forage: Don’t “just do it”- Do it RIGHT!

by Robert Davis, Nutritionist

Harvest and storage management have tremendous effects on silage quality. High forage quality drives intake in dairy cattle and in turn, drives milk production. There are many factors in implementing a successful forage management system. In this article we will focus on two that have the biggest impact on an ideal fermentation.

Harvesting forages at optimum maturity and moisture is crucial in obtaining the best silage possible. Corn silage should be harvested when the whole plant is 65%-68% moisture and the kernels are at ½ milk line. However, milk line and whole plant moisture do not always match up. In all cases, whole plant moisture should always be the overriding factor for corn silage harvest. Depending on conditions, corn silage will dry down at a rate of about 0.5% per day.

How do we determine whole plant moisture? The most accurate way to determine whole plant moisture is to chop a sample and dry it down in a Koster tester or a microwave. Be sure your sample size is large enough to produce sufficiently small particle size when you run it through the chopper.

Why is moisture level so critical? Harvesting corn silage that is too wet (typically >70% moisture) results in excessive fermentations that produce high concentrations of acids and

result in nutrient run off. Specifically, these wet corn silages are often characterized by high concentrations of acetic acid produced from “wild type” fermentations. These wet silages also typically have a high total acid content, which can lead to a reduction in dry matter intake. In contrast, extremely dry corn silage (<60% moisture) should be avoided because low moisture restricts fermentation and is more difficult to pack, which often leads to poor aerobic stability.

Moisture levels in alfalfa silage are even more critical. Wet alfalfa silage is highly prone to clostridial fermentation resulting in butyric acid production. NEVER harvest alfalfa haylage at moistures >70%.

Particle size is the second factor for discussion. From a fermentation standpoint, silage can’t be too fine. From an effective fiber to the cow standpoint, it can definitely be too fine. So what is ideal particle size? This answer may be different for every farm and every harvest season. The important thing is knowing when and how to adjust it while harvesting. Particle size adjustment is directly related to plant moisture content. As moisture content decreases, particle size should decrease as well. This will help increase density and displace oxygen, ultimately leading to a better environment for fermentation. There

is no excuse for not adjusting particle size while harvesting if necessary. All modern forage harvesters make it very easy to change the length of cut. Harvesters should also be maintained to provide a consistent length of cut. Yes, knives do get dull and shear bars do wear out. Don’t try to stretch either. Keep your knives sharp and your shearbar tight. Recommendations for theoretical chop length at ideal moisture usually run between ½ and ¾ inch for corn silage and up to 1 inch for alfalfa haylage.

The keys to making high quality silage include: 1) rapidly excluding air from the forage mass, which will result in 2) a rapid production of lactic acid and reduction in silage pH, and 3) to prevent the penetration of oxygen into the silage mass during storage. Excessive oxygen due to overly dry forage or forage chopped too coarsely allows the plant to respire for extended periods of time. This results in utilization of sugars and excessive degradation of plant protein. Oxygen also encourages the growth of undesirable microbes such as yeasts and molds.

*Reference-
Cutting, Harvest & Storage Management for Forages-Limin Kung Jr. Ph.D*

The Agri-Vator - Dairy Edition - Summer 2016

Agri-Basics, Inc.
54 Brown Street
Elizabethtown, PA 17022

Innovative
Individualized
Practical
Solutions

Education Doesn’t Stop After School by Greyson Smith, Management Assistant

On June 16th a group of Agri-Basics, Inc. nutritionists took a break from their daily schedule to attend the annual on-farm training day. The 2016 summer training day took place at the Hoover Family dairy farm and Dan Musselman’s beef farm, both of which are located in Bethel, PA. Even though it was a rainy day, the Agri-Basics, Inc. associates worked with vendors around the farm to learn more about prospecting techniques for new farms. This was an opportunity for many of the associates to spend time talking with each

other and the vendors in order to gain insight on a variety of issues. It was also beneficial for the vendors and farmers to see the on-going education that the associates are involved in.

Throughout the Hoover Farm were stations set up for the vendors to discuss specific topics. Elanco started off the day with the topic of biohydrogenation. A key take-away point was that we need to know the amount of unsaturated fatty acids that are entering the rumen so the microbes are still able to do their jobs when producing butterfat. Without knowing this,

butterfat production is then inhibited by an overload of unsaturated fatty acids causing us to see butterfat depression in our bulk tanks.

We then moved on to one of the Agri-Basics, Inc. associates, Russ Kline, to learn about what the cows are telling us. He gave us a list of five things to look at while evaluating the cows: body condition, rumination, locomotion, consistency of manure, and cow comfort. The group walked the herd and came back together to compare observations on how to make

continued bottom of page 2

Cow Behavior and Feeding Management *by Mike Campbell, Nutritionist*

I recently had the opportunity to attend Cornell’s Advanced Dairy Nutrition Short-course. It was 4 days packed full of very important topics ranging from transition cows, carbohydrate nutrition, feeding behavior, fatty acids, nitrogen metabolism as well as formulation. As usual, I walked away feeling like my brain turned into Jello from the information overload, but very glad I took extensive notes to capture the valuable information they shared. One topic that left a strong impression on me was cow behavior. We all know that there is a pecking order with dominant or “boss” cows in a herd, but do we understand the impact? At the W.H. Miner Ag Research institute in Chazy, NY they spend a lot of time studying cow behavior. Dr. Rick Grant, President at W.H. Miner, explained that in a group setting subordinate cows will make 2-3 times the pen moves trying to avoid dominant

cows, walk twice the distance and spend twice as much time trying to feed compared to a dominant cow. Essentially, she is working twice as hard just trying to eat. Now think about the impact that has in terms of when you place fresh feed in front of your cows. From the time you feed it can take around 1 hour for dominant cows to eat and around 2 hours for subordinate cows. But, how long does it take after feeding time before cows have feed pushed far enough out that they start pushing on the bar, headlocks, or feed barrier to reach the feed? A lot sooner than 1 or 2 hours. Dr. Grant pointed out that cows will exert over 500lbs of pressure pushing to reach feed, however tissue damage is caused at 225lbs. So, as the dominant cows eat, the feed is pushed further away in the bunk. The subordinate cows who are already working twice as hard have to work harder while pushing on the feed barrier to try

and reach feed. If this happens on a regular basis the impact of the tissue damage will cause cows to become less aggressive eaters which means less dry matter intake causing less production. So, what can you do about it? Dr. Grant said in one of their studies they found a 5 lb. production response by pushing up feed every half hour for the first 2 hours after feeding. He contributed this to increases in feed efficiency by helping subordinate cows work less to get feed. Although it may be impractical to push up feed every half hour, you can greatly help out your subordinate cows by pushing up feed...especially within the first 2 hours after feeding. By doing this you will help improve your herds feed efficiency and potentially gain production benefits as well.

Education Doesn't Stop After School *- continued from bottom of page 1*

suggestions of improvement to the producer.

Continuing with the day, Balchem and Phibro Animal Health took over for the pre-fresh and dry cow discussion. The group looked at the ventilation along with bunk space and stall spacing to learn how crucial of a role they play when it comes to dry cow comfort. Stressed dry cows equals stressed calves which as a producer and nutritionist we want to avoid.

When the rain finally calmed down, everyone made their way out to the feed trenches for Lallemand’s station. There they went over how to check bunk densities, temperature of the forages and the overall appearance of the bunk. These tools are available to the Agri-Basics, Inc. associates to utilize on other farms where they do nutrition work as well. As Katelynn pointed out, this farm in particular uses a defacer when retrieving feed from the bunk. This makes for a very nice face and prevents the forage from spoiling.

The stations were wrapped up at the calves where Milk Specialties along with Angela Breneman from Agri-Basics, Inc. spoke about looking for the three C’s in calf care. When evaluating a program be sure to look for: comfort, consistency, and cleanliness. These three basic keys to success go a long way in helping to produce a successful heifer rearing program with a low mortality/morbidity and growth oriented result.

The dairy meeting was wrapped up with a meal provided by the Hoover family. Individual discussion between vendors and associates occurred during this time.

The group headed to Dan Musselman’s

beef farm after the meal to learn about raising natural beef cattle from Adam Zurin, Homer Eberly, and JBS. On the farm we were able to look at what is fed in a natural beef ration and how it differs from a conventional ration. We also got to see the handling facility which is set up to make providing care for the animals much easier. We learned that it is important to not have anything near the front of the exit to the chute system so the animals do not hurt themselves when leaving the chute. We ended by looking at the cattle on the farm. JBS helped us to see what desirable and non-desirable characteristics we want to see when cattle are finished and ready to be sold.

When asked about the day, nutritionist Dan Hillyer explained that, “Suppliers, consultants,

and dairymen need to continue to manage risk and eliminate bottlenecks on the farm. This approach should be taken each time we are at the farm with customers that we have a long standing relationship with or new prospects.”

We would like to thank both the Hoover and Musselman families for allowing us to visit their farms, along with the many vendors that helped out with the day. It was a very educational day. Having all the nutritionists together enabled them to share their knowledge with each other. Agri-Basics, Inc. will continue to have educational events so the nutritionists are able to grow and be at the top of their game.



Sugars: What Can They Do For Your Diet? *by Tim Rutledge, Nutritionist*

We hear the term “sugars” thrown around in the dairy nutritional world a lot. But just what are they? Sugars (and starch and soluble fiber) are carbohydrate energy sources. Most nutritionists believe it is good to have a variety of these energy sources in the diet. There are multiple research studies showing a benefit by raising total milk component pounds shipped when feeding sugars. But what does the real world tell us? As often is the case, it depends.... of course right! Most of my clients report more steady bulk tank weights, better intake through the heat, better adaptation to new feeds, and reduced sorting (if sugar is in the liquid form).

So what is sugar doing in the rumen? The main job is improved fiber digestion. This in turn means we can get an increase in DM intake because gut fill is reduced and more milk

will be produced. Does this mean you can now feed your poorer quality forage to the lactating cows? NO! Always maximize forage quality and then use sugars to enhance the fiber digestibility of these forages. You may have heard your nutritionist talking about “MP” or microbial protein. Everything we are trying to do is to get more MP produced in the rumen-the cheapest form of protein you can get. Optimizing MP decreases the need for total supplemental protein and gives the best milk protein production. Another benefit of sugar is that by feeding a very dense energy source, we can save some space in the ration which allows a higher total level of fermentable feeds to be fed.

One very convenient (and often less cost than dry sugar) way to feed a sugar is to feed it in a liquid form. It is important to feed a prod-

uct that you know the ingredients that are used and are of high quality and the correct types of sugar. An advantage of feeding liquid sugar that you don’t get with dry is the benefit of reduced ration sorting. Another advantage to liquid sugar is the ability to add other products into the liquid sugar blend. Depending on other dry sources, ration costs can often be reduced by using these products in the liquid form. Slow release NPN or urea is one of these products that can be added to liquid sugars.

Feeding sugar can be a great way to “fine-tune” your ration to get optimum performance. Talk with your nutritionist to find out if feeding sugars is a fit on your operation!

Customer Spotlight: Neal and Mary Lou King *by Robert Davis, Nutritionist*

Neal and Mary Lou King, along with their son Colton, have landed themselves in this edition’s Customer Spotlight. The King family has been in the dairy business for several generations. Currently the family operated farm in Cochranville, PA milks 130 cows in a tie stall barn. Along with their hard work, it was the recent renovations to their barn to improve cow comfort that made them a nominee for Customer Spotlight.

Like most older barns there were some characteristics in the King’s tie stall barn that were less than desirable for optimal cow performance. In 2015 Neal and Colton decided changes were needed in the barn to compensate for the lost opportunity of rBST. The highest priority was to increase dry matter intake. They focused on improvements to cow comfort and identified problem areas of feed trough height, neck rail height, stall comfort and ventilation system performance.

The feed trough was three inches lower than the stall bed causing the cows to kneel in order to reach the feed which resulted in decreased dry matter intake. The cement trough surfaces, as well as the feed alley, were worn, uneven, rough and deeply grooved. Colton explained it was difficult to sweep in feed.

The trough was raised six inches to meet the needs of the cows and was completed with a stainless steel liner. Neal commented that sweeping in feed is so much easier and the liner is very durable. Dry matter intake increased substantially.

The original neckrail was also too low. The new loop stalls feature a higher neckrail which gives the cow better access to the feed.

The existing mattresses were in relatively good shape however they had lost most of their resiliency. Just because the mattress cover looks OK doesn’t mean the mattress is still good. New mattresses are softer and result in more resting time for the cows.

Heat stress was a concern before adding a high pressure misting system and increased air inlet space. The Kings say the barn temperature is usually five to ten degrees cooler inside the barn than the temperature outside since adding the mister and improving the ventilation system. They do not have to worry about severe milk loss in times of heat stress.

Although the planning and renovations took time and adjustment, Neal, Mary Lou and Colton say the improvements were well worth

it. The workplace is more enjoyable for everyone as the changes have saved time and labor. Most importantly, as cow comfort has improved after the renovations, milk production has increased. During the last three months of rBST supplementation, the standardized 150 day milk average was 95 lbs. During the four months post rBST but pre-renovation the average was 87 lbs. The five month post-renovation average was 95 lbs.

Neal, Mary Lou, and Colton realize that cow comfort is not an area to skimp on in the dairy business. Cow comfort components do wear out and require maintenance and/or replacement. This strategy has a direct impact on profitability and the intergenerational success of their dairy.

