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About the author of Rumenations:

Ron Wilston joined the GROWMARK FS Seed Division in June 2006 as a Dairy Nutrition Seed Specialist. His role is to serve as a link between the FS Seed Brand and the dairy industry. Ron's tasks include: speaking at producer meetings; farm consultations; technical support on the use of FS Seed hybrids and products on farm; and giving direction to product development and selection to better serve the dairy industry. Ron has nine years experience as a Dairy Nutrition Specialist with the feed industry. Born and raised in Troy, PA he currently resides in Bath, NY with his wife and three sons.

Rumenations

By Ron Wilston, Dairy Nutrition Seed Specialist

Got Heat Stress

Heat Stress!!! The cows don't eat, don't milk, and don't settle. These are some of the symptoms of heat stress in dairy cows along with sore feet and in severe cases death!

The secret to minimizing effects of heat stress is really no secret at all. I was once asked by a customer, 'What do dairy managers with high herd averages do different than managers with mid or low herd averages?' This customer was implying that there was one thing that would make the difference. The answer I gave surprised him. My response was something like this. "High producing dairy managers do most everything right." In other words the devil is in the details. There is no one magic additive, procedure or piece of equipment that is going to put your cows on the fast track to high production. The same goes for heat stress; there is no one big thing, but rather all the little things you need to manage to keep your cows as cool and comfortable as possible. Doing all the little things will pay off big in higher milk production, better reproduction and overall animal health.

Heat stress occurs when the ambient temperature and humidity increase above the cows "comfort zone" (approximately 68 degrees F). The higher the temperature and humidity are - the higher the stress. Core body temperatures may exceed 104 degrees F and respiratory rates may exceed 100 breathes per minute on really hot and humid days. Dry matter intakes can be reduced by .17 lb for every degree above the cows "comfort zone" or 68 degrees F. This can result in the loss of 1 pound of milk for every 2 pounds of dry matter not eaten. High producing cows suffer more because they generate more heat, as a result of higher overall intakes.

Forage quality also plays a role. Lower quality, stemmy forages generate more heat during fermentation than good quality forages. There are also differences in forage species. For instance, corn silage produces less heat the haylage.

Reproduction losses can be severe as well, with some data suggesting that "only 10 to 20 percent of inseminations in heat stressed cows result in pregnancies." (Pennington, J.and VanDevender, K. n.d.). Cows try to cope with the heat by panting which results in lower bicarb production that in turn causes acidosis and laminitis. Other ways they try to cope is by standing in tight groups and by selective consumption or sorting out higher energy feeds. All of these factors contribute to sore hoofs that usually aren't fully manifested until late August or early September after the damage is already done.

There are several things you can do to help your herd deal with the heat stress this summer. The first is to insure that all cattle have access to plenty of clean fresh water. Cows can drink up to 50% more water when the heat index is high. To ensure ample access, waterers should be placed every fifty feet in a free stall barn and if possible 2 feet of trough space should be available per fifteen cows, with the water level at least 3 inches deep. Keep waterers clean to encourage your cows to drink. Don't force them to drink dirty water. Remember milk is 85% water so the more you limit water the more you limit milk.

Another best practice in high heat stress months is to feed more frequently with more being fed at night and less during the heat of the day. Push up the feed and clean the bunks out daily to prevent mold growth and unpalatable feed. Sprinkle some bicarb in the bunks or mangers after you clean them out to help absorb foul odors and moisture. Make sure your herd has access to free choice bicarb and white salt (preferably loose granular) to help them deal with electrolyte balance. And finally add a propionic acid to you TMR or silages to keep them from heating. Keep in mind that too much acid can make the feed stuffs unpalatable making the problem worse. Always follow the manufacturer's recommendations. In this case, too much IS a bad thing.

Fans and soakers are a great way to help keep your cows cool and comfortable. My

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personnel preference is to place fans over the stalls first to encourage cows to lie down rather than standing in the alley ways. Blood flow to the udder is increased when a cow lies down and better blood flow equals more milk. Also, standing on concrete floors for long periods of time increases hoof and leg problems. The next place I would recommend putting fans is over the holding area if you have one. Also the holding area is a great place for sprinklers. Caution must be taken when you use water to cool cows in the Northeast that you soak them - not just mist them. Mist particles sit on top of the hair coat trapping more heat into the cow and making the problem worse - not better. In addition misters increase the humidity in the air, making evaporative cooling harder.

You can also keep heat stress at bay by making sure that cows on pasture or in exercise lots have some kind of shade. I have seen way too many exercise lots with feed bunks but no shade at all. Cows will not eat as much as they should under those conditions and resort to sorting and slug feeding to limit their sun exposure at the bunk. Most bunks can be covered with shade cloth at minimal expense.

Utilize these best practices to reduce the heat stress on your herd this summer. It's one of the ways you can keep your cows happy and achieving maximum lifetime productivity.

~ Ron

Bulk Silage Management

What could you do with another fifty-five acres if it was just given to you? What if it was land you already own close to the heart of your operation? With commodity prices high and land rents and values also high, there are many things to do with extra land.

According to Dr. Keith Bolsen, Professor Emeritus, Kansas State University, if you are putting up corn silage in bunks or pit silos this fall you could save enough silage from spoilage to free up that extra land in the spring. Dr. Bolsen explained in recent visits and training seminars with GROWMARK FS employees that the industry average dry matter loss is about twenty percent for bunks and pits. That means that for every ton of silage harvested only sixteen hundred pounds get fed out. By reducing that to a nine percent shrink, which is possible through good bunk management, there would be eighteen hundred and twenty pounds to feed out. Therefore, five hundred acres of silage corn at a yield of twenty tons per acre (which is ten thousand tons) would yield a feed out inventory of ninety one hundred tons at a nine percent shrink rate, instead of only eight thousand tons at twenty percent average shrink. That difference, eleven hundred tons, divided by twenty tons per acre gives fifty five additional acres to grow cash crops.

Realistically, most operations won't go from a twenty percent shrink one year to nine percent the next, but even the slightest improvement would yield more available acres for other crops or uses.

Some of the most important ways to limit shrink and improve forage quality in bunks, according to Ron Wilston, Dairy Nutrition Seed Specialist for GROWMARK FS, are to

- Use a good quality inoculant, preferably applied in the throat of the chopper, like Chr Hansen Biomax 5 for corn silage, or Biomax MP for haylage.
- Fill the bunk as quickly as possible and have consistent, continuous packing as the bunk is being filled.
- Make sure you start with a clean bunk – free of molds and toxins that can accumulate on side walls and floors.

In addition, here are eight steps that Dr. Keith Bolsen and Dr. Larry Berger (Bolsen and Berger, Sealing Strategies for Bunker Silos and Drive-over Piles, Silage for Dairy Farms, January 23-25, 2006) recommend to reduce shrink in pits and bunk silos.

- Achieve a high packing density (minimum of 15 lbs of DM per cubic ft) in the forage within the top 3 feet of the silage surface.
- Shape all surfaces so water drains off the bunker or pile, and the back, front, and side slopes should not exceed 30 to 35 degrees
- Seal the forage surface immediately after filling is finished.
- Two sheets of plastic or a single sheet of improved oxygen barrier film are preferred to a single sheet of plastic.
- Overlap the sheets that cover the forage surface by a minimum of 4 to 6 feet.
- The sheets should reach at least 4 to 6 feet off the forage surface around the entire perimeter of drive-over piles.
- Put uniform weight on the sheets over the entire surface of a bunker or pile, and double the weight placed on the overlapping sheets. For many years, full-casing discarded tires were the norm for anchoring bunker silo covers. These waste tires are cumbersome to handle, messy, and standing water in full-casing tires can help spread the West Nile virus, which is another reason to avoid using full-casing tire on dairy farms.
  - Bias-ply truck sidewall disks, with or without a lacework of holes, are the most common alternative to full-casing tires.
  - Sandbags filled with pea gravel are another effective means of anchoring the overlapping sheets, and sandbags provide a heavy, uniform weight at the interface of the sheets and bunker walls.
  - Sidewall disks and sandbags can be stacked, and if placed on pallets, they can be moved easily and lifted to the top of a bunker wall when the silo is being sealed and lifted to the top of the feedout face when the covering materials are removed.
  - A 6- to 12-inch layer of sand or soil or sandbags are effective way of anchoring sheets around the perimeter of drive over piles.
- Prevent damage to the sheets during the entire storage period.
  - Mow the area surrounding a bunker or pile and put up temporary fencing.
  - Regular inspection and repair is recommended since extensive spoilage can develop quickly when air and water penetrate the silage mass.

Fall Alfalfa Establishment Tips

By Tim Guttridge, Allied Seed, LLC.

Late summer often presents opportunities for seeding new alfalfa stands. GROWMARK FS has the top alfalfa and forage grass varieties available to help with all your summer planting seed needs. Following are some guidelines to help ensure success with your summer planted-fall established alfalfa seedings.

1. General Considerations:

- Test soil well in advance for lime or other nutrients needed and consult with local GROWMARK FS facility.
- Apply lime and fertilizers as needed prior to seeding.
- Properly cultivate and prepare a fine, firm seedbed prior to planting.
- Seed with a seed drill or broadcast seed and then culti-pack for best results. Thoroughly packing the soil is essential for good soil to seed contact so seeds can germinate and emerge uniformly.
- For no-till situations, make sure problem weeds are killed before re-seeding using a 'slit-seeder' or no-till drill.
- Monitor seedings after planting; apply weed control as needed. Do not cut or graze until the following spring.

2. Recommended timing for summer seedings:

- Early to mid-August North of Interstate 80,
- Mid August to first week of September south of Interstate 80.

3. Variety selection and seeding rates:

- Escalade or Marvel for top yields, fast recovery and for the managers who harvest aggressively for highest tonnage & quality. Needs sites with better soils & drainage.
- Enforcer for those fields where potato leaf hopper resistance is a must.
- Mariner II or III for sites where drainage is less than ideal for alfalfa stands and a branch rooting variety will increase stand life and yields.
- Mix with timothy, reeds canarygrass, orchardgrass or other options if an alfalfa/grass mixture is desired. GROWMARK FS has many premixed alfalfa/grass combinations for you to choose from, or a customized blend can be made.
- Straight alfalfa should be seeded at 16-18# per acre. Mixtures require less alfalfa per acre, and each grass species seeding rate is dependent upon the amount of grass desired and seed sizing. Your GROWMARK FS salesperson can help you determine the right amount for your seeding acres.

Given ample moisture and good seed bed preparation, summer seeding alfalfa is a great way to establish alfalfa fields. Contact your GROWMARK FS facility for more information on the varieties available and options offered, including hydro or air-flow seeding services.

Wheat Notes

By Duane Orr, Territory Sales Manager, GROWMARK FS

According to the Maryland Department of Agriculture's estimates, the winter wheat harvest will be slightly lower than last years. An estimate of 66 bushels per acre vs last years average at 68 bushels per acre. Given the droughty conditions during grain fill it is somewhat surprising that there was not more of a yield gap.

Dry land yields have ranged from the mid 40 bushels per acre to as high as the low 90 bushels per acre. Some irrigated wheat yields have been reported in the 100+ bushels per acre. There was a day when most irrigated land was planted in corn to maximize revenues, however with $5.00 wheat prices and beans over $8.00, many growers are utilizing wheat and double crop beans under irrigation.

The FS line of wheat has once again performed extremely well this year compared to the public varieties on the market.

The yield standout is FS 621. This very early maturing variety was ready for harvest a week before most wheat and yields as good as, or better than longer season wheat. This early harvest also allowed test weights to be superior, due to the crops harvest prior to the rain showers and it also allowed for earlier planting of beans.

The FS 300 was the test weight leader this year with test weights hovering around the 60 pounds per bushel, even after the rains. This translated into exceptional yields.

FS 652 was also in the running for top yields, although the rains did allow test weight to slip a bit. Side by side tests were within a couple of bushels of FS 621.

Seed supplies should be good, but higher cash grain prices will increase demand on the favorite FS varieties. If you are planning on wheat for part of your crop plan this fall, order early to ensure you get the variety of your choice.

Specialty Crop Additives

Specialty products have a place in agriculture. Many crop protection additives can provide additional yield or protection when applied with herbicide and or fertilizers. Below are a few products available from GROWMARK FS that can add value to the crops you grow.

Bioforge, is a crop additive that can help mitigate drought stress in corn and other plants. At a use rate of 1/2 pint per acre added to some foliar fertilizer, this product has shown excellent returns in both yields and quality. “The biggest returns we have seen with this product is on silage corn, both in tons and digestibility” states GROWMARK FS Region Manager Jeff Draper. “Bioforge can be added to Roundup or other glyphosate products and can be effectively used up until tassel.”

Another specialty product, Xtra-Power, will cause more lateral branching and girth to a plant. Side by side comparisons, with and without Xtra-Power are visually noticeable from the road. Better color and more height following the Roundup application with Xtra-Power is prevalent. Draper notes, “Over the last three or four years we have picked up 1 to 5 bushels of yield using this product on corn and beans, and we currently have a research project underway on corn to study its affects more closely.”

Sugar Mover, is another product that can add real value to a variety of crops. Applied at 1 quart per acre, Sugar Mover should be added to any late season fungicide application. Late in the season, Sugar Mover helps the plant release more food for distribution throughout the plant.

This is also an excellent product to apply to perennials in the fall to move the food stores out of the top of the plant and back into the roots. This includes; alfalfa, blueberries and perennial flowers. Sugar Mover is also a good choice for potatoes prior to harvest.

These are just a few of the many choices growers have in specialty crop additives. Your local GROWMARK FS salesperson can provide specific uses and recommendations of these and other specialty products. Contact your local GROWMARK FS location or salesperson for more information.

GROWMARK FS, LLC
308 NE Front St.
Milford, DE 19963