



BIO-NEWS

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Wisconsin dairyman says:

Forage will make you money

*By Mary Pohlman
MBA Communications*

Success starts in the soil.

Healthy soils grow healthy plants. And for a dairy farmer, those healthy, mineralized soils grow high quality forages, that become the basis for healthy cows and a healthy bottom line for the farm.

It all ties together for the Dave Weyland farm, an 800 acre organic operation (dairy and grain) in east central Wisconsin, not far from Lake Winnebago.

The area's medium to heavy loam and clay loam soils have "tremendous potential if properly managed," says Dave, but they are prone to compaction and do require careful management.

Taking care of the land, and improving it, was important from the moment he bought his farm back in 1990. Dave Weyland, dairy farm-raised, always wanted to farm. "It's what I was put on earth to do.

*"Start working right away
with the soil balancing."*

*"Correct deficiencies and get
the biological life started."*

It's an honor on one side and a burden on the other" to be responsible for the health of the land.

Even before Dave knew about Midwestern Bio-Ag, he had heard farmers talk about the importance of calcium. He kept the idea in the back of his mind, and when a couple of consultants from MBA stopped at his farm one fateful day over 20 years ago, he

(Continued on page 4)



A variety of crops including small grains are grown each summer on the Weyland Farm.

Gary Zimmer's Spring Letter

Dear farmer/agribusinessman,

I'm late as usual getting at this newsletter. But as I look out the window, it's the middle of April, the ground is covered with white, and it's cold—a late Easter and a late spring. As farmers, we are always optimistic for this to be a great growing season. The last few have been wet, but we sure have grown nice crops.

Before this snow, looking out over the green farm sure felt good. Every field had either a green manure crop or a forage crop on it. All the soils were protecting and producing feed for the soil livestock.

In my career I have certainly seen many changes in agriculture, some slow, really slow, but new things that work do keep showing up: using more nutrients than just NPK; examining sources, not just buying the cheapest; calcium as a nutrient, not just lime; cover crops, compost, tillage methods that promote residue decay, aerate and help water soak in; and I'm sure that there are many more that are good sound practices.

The new book, *Advancing Biological Farming*, has been well received, and many have commented that it's easy reading. It is also intended to be used as a guide to put a program together. It's a system, that is always my message.

What are you doing about a mineral/nutrient management plan? What about biology? Are you creating an ideal home for soil life, and feeding them as well? Here is where tillage or lack of it can come in-- what's the purpose of your tillage program? Soil health, cycling of and exchangeability of nutrients through biology and soil structure.

Change is about the desire for a different outcome, and the will to make it happen.

There are also time constraints. Using Round Up is a fast solution; fixing soil health is a slow one, and building organic matter is slow, too. I've been at this for a long time, over 25 years. The message doesn't change, but we do learn more and understand it better, though, as well as develop products that fit in and perform.

As it has been said, the best way to make change is to have a better, improved *system* in place to replace what's presently being done. For agriculture, biological farming is here, it's that new system that's not really new but is now being understood better. Get the inputs out of the snake oil category. Ask, where does this fit in my system? Does it fit, and how? Is this truly my limiting factor?

Change is about the desire for a different outcome, and the will to make it happen. Pick up any farm newspaper and you'll see that change is on the way.

Since my first book came out, *The*

Biological Farmer, my world expanded and I took on more challenges. By the time you read this, I'll be on my way to South Africa to work with a large group of dairy farmers on the Eastern Cape. It's an area with a climate like New Zealand. Grazing, rye grass, nitrogen, corn silage and problems.

First is the cost and dependence on nitrogen. I was visiting with a conventional farmer recently and talking about the high prices for corn, beans, meat, etc, and wondering how he would spend all the money. (For farmers, it is always equipment.) His comment was, 'I don't *have* more money, I *handle* more money. The stakes just went up, the gamble got bigger.'

For us as an organic farm, it's the seed cost and *fuel*. Our dependency is on fuel, not on nitrogen. Our challenge is, can we become more efficient?

The second problem for South Africa's dairy farms is balancing rations, making sure they are not violating the principles of the cow. Effective fiber for rumen health and mineral balance is key. As on all farms, I will be evaluating the system, looking at their limiting factors.

As we always say on a dairy, give me your dry cows to work with, and your forages. If you don't want to depend on all that nitrogen, but want more nutrient dense feeds, and a variety of them, start with soil fertility. Get more legumes, calcium, and phosphorous. Improve management.

Really, the same thing is true for all crops. If we want something different in results, we have to 'manage' for it. What are you managing for? In Africa, is it rye grass, nitrogen and grazing? Why do they want to change if this system is

(Continued on page 3)

In this issue...

Tissue Testing: Part of your fertility program? Pg. 6

In Memory of Fred Kurschner Pg. 8

Trading Post Pg. 9

Pasture Pointers Pg. 10

Inoculants can save \$\$\$\$ Pg. 14

....Gary Zimmer's Spring Letter

(Continued from page 2)

ideal and sustainable? What are its limits? Healthy soils, healthy crops, healthy profitable livestock – that's what most of us want, and we all want it without buying inputs. At least if we do buy them, we don't want to be trapped into paying for them forever. That's certainly true for growing only grass: you will buy nitrogen forever and it really doesn't make your farm sustainable and less dependent.

So what are you managing for? What do you want?

I expect this trip will be another great learning experience. For those of you who have never sat for 17 hours in a plane seat (and that's only one way), you may not think that part is fun and educational, but it is an experience everyone needs to try at least once (this is my fifth such trip).

You will get to hear and see more on this story at my meetings next winter. I know most of you would like to go along on such a trip, so I will share it with to you.

In this newsletter

If you missed this past year's winter meeting, it's now available on DVD (see page 13).

Also in this newsletter is the sad news of the death of one of Bio-Ag's founders and partners, Fred Kurschner. He had a big dream, a vision long before there was a movement to biological farming.

Fred always commented that because I have always been an educator, Midwestern Bio-Ag is an education company that developed products and methods to make the system work. If we were a product company, not an education company, I'm sure our impact on agriculture would have been different.

My tours around America and the world aren't because of a 'miracle' product, but in promotion of a system of farming that works.

In Africa, I will spend days evaluating their system, and yes, there may be product recommendations involved, one's that are needed to fix or improve the existing situation. What do I get from

these world travels? Ideas, seeing what's done in other countries. For example, that's how our carbon-based fertilizers came about; I was introduced to the idea in Australia.

Traveling and Learning

Bob Yanda and his wife and my wife and I just spent two weeks in Australia, traveling and holding meetings.

My interest has been sparked again, this time over a liquid injection system. At MBA we are dry blenders of balanced fertilizers and to accomplish our soil and crop needs it sure fits. We want to balance not only the nutrients but the soluble to slow release, make them in a carbon base, have

a volume and variety of materials that perform affordably. This can't be done with liquids, at least not without spoon feeding via many trips over the field and you don't look at numbers or price. Sure it's easy, the easy button's there.

How about a combination of liquids and dries, placing them in root friendly zones or rows? Now what's best for the system? These liquid injection systems have a different purpose than our liquid fertilizers. You don't have to place

them out of the way so the roots can dodge them, you dribble on the seed. They are materials with some minerals, especially ones needed in small amounts, and biological stimulating, but mostly root stimulants and a biological package. That gets the plant off to a great start and promotes a root friendly, biologically friendly environment.

I have also been introduced to this biological liquid concept out west, both in Idaho and Colorado, and it's sure got my interest. We will be doing a test of this on soybeans here in the Midwest and potatoes and other crops out west.

What if you were managing bigger roots, healthier starts, more nodules on the roots of the beans, more nitrogen being produced? Now what would you do and study? We're working on improving the plants' and soils' own abilities with a combination of mineral, soil structure and biology. I'm sure you will be hearing more about this new concept.

We are managing for higher yields and profits on our farm. We see the road to do this, not by pushing with more technology and things which are not long term solutions or sustainable. Once you get to experience the biological system working, the dependency reduces and the fun in farming returns.

We still do have lots to learn. I always assume you all want to do better, are 'into' farming, like the challenges and want to progress to the next level. Keep your eyes open, observe, enjoy and remember your responsibility. You do have the health and wealth of this nation in your hands, as a caretaker of the land and a food provider.

I hope you have a great growing season.

Gary F. Zimmer

So what are you managing for? What do you want?

We're working on improving the plants' and soils' own abilities

...Forage will make you money

(Continued from page 1)

was ready to hear, and heed, their message. "I listened to what they said. It made sense to me, it was practical."

Biological for nearly two decades now, he's seen "how the soil structure changes, there's more earthworms." And that early conversion to biological made the later transition to organic simple. "With the biological transition already behind me, the organic transition was easy." In the years since, he's transitioned more acreage on land he rents, and has seen over and over again the advantage of going biological first.

Rotations, cover crops, mineralization, soil correctives, fertilizers with trace minerals, manure applications and bio-diversity are all part of the biological system, and of Dave's farming practices. "Everything is tied together, eve-

rything goes hand in hand."

Knowledge is the first key, Dave believes. "Understand what you have to work with. Understand what you want to achieve." Don't get hung up on one thing, but see the whole picture. That "ability to put the entire thing together" is vital to changing soils.

As an organic farmer, pastures come first in providing forage to the dairy herd. A lot of the farm is devoted to pastures, some of which may be cut for winter feed. They're divided into long narrow paddocks with easy access to water; cows are never more than 250 feet from a water tank. Cattle are moved often; he figures 2 acres/100 cows every 12 hours. Temporary cross fences divide the paddocks into grazing areas, and can be easily removed to make fields easy to work when it's time for land to be rotated.

"I'm pretty aggressive on rotations," says Dave, knowing its important to prevent compaction and to keep pastures vigorous. Pastures are renewed on a regular basis with a variety of plant species.

Hay is alfalfa mixed with timothy and a small amount of clover, harvested and stored to retain quality. The Weylands used MBA's Bio-Cal™ before going organic, and now use OrganiCal and gypsum.

"I really like both of them," he stated. He applies about 300 lbs./acre/year, and also uses some fertilizers, especially for the trace minerals. He likes the results he sees on his feed test: more energy, more high quality protein and more carbohydrates, all factors that lead to high production on a high forage ration.

Small grains (oats, winter rye, barley, and occasionally wheat) and cover crops (including MBA's green and gold. "Anything that grows will work," says Dave) are rotated with pastures, corn, and soybeans. Yields on corn are 150-200 bu/acre and beans 40 bu/acre. In addition to quantity, they're "higher quality. We get more milk out of a bushel" of the home raised feeds, he says, and thus, more return on his money.

"It's a resource," says Dave of manure, whether aged or composted. The farm's fertility program includes a light coat of manure on ground being rotated out of hay, "Never on hay until it's



Corn and soybeans yield well, along with forages and small grains.

(Continued on page 5)

.... Forage will make you money

(Continued from page 4)

due for rotation," he adds, or on pasture, and "never on bare ground." On cover crops of oats, barley, rye or occasionally wheat, he likes to apply "lots of light coats to capture soluble nutrients." On cornstalks, he uses it to encourage biology to break down residues.

"We don't purchase any feed except for minerals." The Weyland's herd of 100 grazing Holsteins is fed all high quality, home raised feeds. The high forage ration provides high quality protein and "each cow always gets hay," 5 lbs. per day. Lactating cows, milked in a tie stall barn, get minerals top-dressed to meet their individual needs. "Every cow gets exactly what we put in front of them," he notes, with MBA's free choice program as a safety net. He invests in extras including kelp, PYK, selenium vitamin and CharCal plus Redmond conditioner and salt. Dry cows get dry cow mineral.

Consistent feeding and attention to detail are critical. "Cow problems start long before you see the symptoms; good things are the same way," Dave notes. "When you get to this level of health, you can see the good health."

The Weyland herd currently runs a 65-70 lb. tank average. Cows are fed "as much as they can eat" of the farm's quality forages, plus an average of 3-4 lbs. of roasted barley, 2 lbs. roasted soybeans, 5 lbs. corn silage and 3-10 lbs. corn. His ideal would be for his 1500 lb. Holstein cows making an 85 lb. tank average



Dry hay is a key component of the ration, fed every day.

and maintaining bodyweight while fed a high forage diet, and he believes it could be done on his current ration (He has had nutritionists tell him that with his high quality forage, he could skip the shell corn entirely.)

Herd health is excellent. Cows have strong heats, calve and clean, and milk. "I don't remember the last time I had a DA" and they don't have foot problems. That means no expensive

visits from the veterinarian or the hoof trimmer. Dave does, however, believe it's important to have a good relationship with his local veterinarian, and relies on him for vaccination recommendations. Calves are vaccinated, and cows at one point during their lactation, per organic rules.

Being organic is not something to see as a limiting factor, says Dave. He believes his cows, with high quality forages, good health, and careful management, can be as productive as any conventional herd.

For farmers going biological, Dave's advice is simple. "Start working right away with the soil balancing." Get soils loose and crumbly. "Correct deficiencies and get the biological life started."

For those who might be considering the further transition to organic, "Focus on forage," he added. "Getting the calcium into your forage and getting forage tests where they need to be" will provide your biggest return. "Forage will make you money." And that's good advice for any dairy farmer.

"Cow problems start long before you see the symptoms."

Tissue Testing: make it part of your fertility program

By Leilani Zimmer-Durand
MBA Research Specialist

Which one of these leaves would you tissue test?

Tissue testing is a great tool for letting you know if your plants are getting enough nutrients from the soil. Testing plants is an important part of a farm's fertility program because not all of the nutrients in the soil are available for plants to take up. Nutrients can be lost from the soil, or tied up in forms plants can't utilize.

If you want to be certain that your crop has sufficient nutrients, you need to check plants to see that nutrients from the soil are getting up into the plants.

Tissue testing is also often done on diseased or unhealthy plants to try to find out what's wrong. Unfortunately, it's not always easy to figure out what went wrong by taking a tissue test. Looking at the nutrient levels in a diseased plant can give you clues, but often the real reason is harder to find. That's because the tissue test from an unhealthy plant will likely show a nutrient deficiency, but that doesn't tell you why a nutrient is lacking.

You need to check plants to see that nutrients from the soil are getting up into the plants.



It's very difficult to know if the mineral deficiency that shows up on a tissue test from a sick plant really indicates a mineral problem, or if it indicates some other problem that shows up as a mineral deficiency. Using a tissue test to try to diagnose and correct problems in a sick crop might work, but it could also be a waste of your time and

money.

In order to make tissue tests an effective tool on your farm, take a tissue test from your crops two or more times each growing season so you can put together a baseline of crop health over time.

The best time to take a tissue test is when the crop is green, growing, and looks healthy. By taking tissue samples a couple times during the growing sea-

(Continued on page 7)

....Tissue Testing

(Continued from page 6)

son, you can get a picture of what the crop's nutrient status is, and over time modify your fertility program to make up for any deficiencies in the crops.

How to collect a tissue sample

How and when to collect tissue samples varies from crop to crop. The following table has tips for collecting tissue tests from corn, beans, alfalfa and small grains. For more information on how to collect tissue samples from a wide variety of crops, see A&L Labs' Plant Tissue Handbook, which can be found online at: http://www.al-labs.com/publications/plantissue_handbook.htm

General Sampling Guidelines:

- ◆ In general, when collecting a tissue sample, collect recently mature leaves from at least 10 plants. Avoid collecting newly emerged leaves, old, senescent leaves, or leaves that have insect or

mechanical damage. When collecting alfalfa or small grain plants, collect the top half of a small handful of plants from several different locations in the field.

- ◆ If the plant samples are dirty, they will need to be cleaned. They can either be wiped off with a dry brush or a damp cloth. Avoid rinsing or soaking the plants because you can lose minerals. You want the plants to be clean in order to avoid having any dirt or fertilizer residues on the leaves that could affect the tissue or feed test results.
- ◆ After the plant samples are collected and cleaned, place them in a clean paper bag or plastic bag. Never use a metal container because it can contaminate the sample.
- ◆ Put the samples into clean paper bags and label them with the field number, date, cutting (for feed tests), and

type of plant. Mail them immediately to the laboratory; don't let them sit around in a bag. Never place fresh plant tissue samples in plastic bags for mailing because they can mold or decompose.

What to look for on a tissue test report

Nutrient sufficiency levels will vary from place to place and from crop to crop. Your tissue testing lab will provide you with a "low, medium, high" range of nutrient levels for the crop you are testing. Use those results as a guide to look for nutrient deficiencies and excesses in your crop.

When done regularly, tissue testing is an excellent way to see if your crops are getting enough nutrients, and to modify your fertility program or soil-building program to address any deficiencies you see over time. It can really help you take your farm to the next level.

Crop	Growth Stage	What to sample
Corn	Young plant, less than 12" tall	All of the above-ground portion
Corn	Mature plant, before tasseling	The first fully developed leaves; collect one leaf each from 15 or 20 different plants
Soybeans	Mature plants, before or during flowering	A recently mature leaf (leaves are trifoliolate, so collect all three leaflets) from the top of the plant. Collect from 20 to 30 different plants.
Alfalfa	Mature plant, before flowering	For tissue testing (not feed testing) collect the top six inches of the plant
Small grains	Mature plant, before flowering	Collect the four uppermost leaf blades from 30 to 40 different plants

Fred Kurschner was MBA co-founder

Biological farming lost one of its passionate supporters with the unexpected passing of Midwestern Bio-Ag co-founder Fred Kurschner on April 13, 2011 at the age of 72.

Fred was a vital part of MBA's success and its continuing growth over the years. Even after his retirement, he continued to participate in company meetings and events.

In 1983, he was excited by a compost demonstration he saw on the Ralph Engelken farm in Iowa. That led to a partnership with Engelken, Don Gilbertson, Marv Marty, and others, forming BioAg Services of America, a composting service. They held meetings that winter promoting BioDynamic Starter, used to inoculate windrows. Gilbertson pulled the Wildcat compost turner from farm to farm, using the farmers' own tractors to run the equipment. (Duane Siegenthaler, now president of MBA-Wisconsin, was one of the company's early customers.)

Gary Zimmer, with his experience as a Brookside consultant, and knowledge of farm systems, joined them later that year. Fred, Gary, Don Gilbertson and Don Faber expanded the scope of the original business, re-organized and formed Midwestern Bio-Ag Products & Services in December of 1984.

Fred contributed his entrepreneurial spirit and sales experience to the fledgling company. (He had been a meatcutter before running his own sales route, owned a grocery store, remodeled and sold homes, and was an



Fred Kurschner

Impro distributor.)

Fred also brought an undeniable passion for helping farmers succeed through the principles of biological farming.

"We started the company on an educational program rather than a sales program," Fred recalled in a 2001 interview. The Bio-Ag message was the same then as it is now — avoid all those things harmful to life in the soil, nourish and enhance soils and soil life as the basis of success. And because there were few quality products for farmers who wanted to go biological, MBA was created to source those products and the know-how to use them.

"Feed the soil life: we teach it, we preach it. Feed the soil microbes. If you feed them, they'll feed you," he said.

"We balance a soil to create an environment to feed soil life using calcium, sulfur and trace minerals. We give them a nice home to live in, and the food they'll thrive on. Once you've got that environment, don't put

anything on there that is toxic," he summarized

Fred served as MBA's Vice President of Sales, where his many duties included visiting farms and conducting farmer round table meetings, explaining the tenets and benefits of biological farming and MBA's products. Another key role was recruiting and training Bio-Ag consultants.

He was a fixture in the Midwestern Bio-Ag booth at trade shows such as Farm Technology Days and World Dairy Expo, and MBA's own Field Day. Over the years he introduced thousands of farmers to the principles of biological farming.

"It makes me feel good to help make farmers understand that there is an alternative" to conventional farming products and practices, he said in that interview. "It's so much fun working with farmers and consultants. I've created a lot of friendships through the years."

Those friendships extended beyond business hours, and included the many trips and adventures that he took over the years, including those with his fishing buddy Bob Yanda.

Fred is survived by his wife, Delores, their combined six children and 14 grandchildren, other relatives, and many, many friends among the farmers and other agribusiness professionals he worked with over the years.

Fred left an indelible impression on all of us who had the privilege of knowing him and working with him. His passion for life and for biological farming will always remain with us.

TRADING POST

For Sale:

Buffalo cultivator: 12/30, cutaway discs, ridging wings, Model 6300; Acura Guidance System, Kovar long tine harrow 30", quick hitch; NE Iowa 414-687-4536

PamCo 6-ton fertilizer buggy: Completely refurbished, like-new condition \$5000; call Scott at 608-778-7421

Buffalo 6630: 4-row cultivator, 30", 36" or 38" row spacing. \$2500; 815-499-4929

Naturally raised hay: 2nd crop grass, 100 big square bales. No rain. Stored inside. 715-308-2942

Buffalo 4630, 8-row cultivator: new 16" sweeps; real good condition; \$4500 call Bryan 641-990-0015 or 641-236-8861

Dynodrive in good condition: 11 ft; northern Illinois call Eugene at 815-541-9294

Hay grown on MBA program: 2nd and 3rd crop and new seeding. Alfalfa/grass mix. Bob at 608-778-7996

Organic grass hay: 1400# round bales, netwrapped, \$45/bale; Bob at 608-875-5810

Organic farm, 240 acres: with parlor and freestall barn. Available with cows, feed & machinery 608-231-1514

Jerseys for sale: two year old bull, purebred, \$900; Jersey/crossbred organic certified heifers, freshening late Aug & Sept. Call Bob at 608-875-5810

Organic hay and straw: MOSA certified; 50 bales, second crop hay, 800# net wrapped, RFQ144, \$1/pt; 126 bales, first crop, RFQ 93; 20 bales straw, 800# netwrapped, rotacut, \$80/ton. Ogesma, WI; 715-767-5388

Organic grazing/parlor farm: 116 acres, Edgar, WI 608-231-1514

Certified organic corn: ear or shelled; 1500 bu; starting at \$10/bu Write: Ray D. Borntreger, N2955 State Road 54, Melrose, WI 54642

Long spring tooth harrow: Kovar, 60 ft. good condition. Call 815-499-4450

Compost turner: Wildcat 4000, SW Wis. Gary at 608-225-9839

Other:

Organic Producers: Contact Organic Valley/CROPP Cooperative for future opportunities in organic dairy, eggs, meat, soy and produce. Our Farmer Relations staff would be happy to assist you at (888) 809-9297.

Are you ready to help us change agriculture? Midwestern Bio-Ag needs consultant/dealers to provide our products and services to farmers. 1-800-327-6012 for details.

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Midwestern Bio-Ag

10955 Blackhawk Dr.,

Blue Mounds, WI 53517

1-608-437-4994/1-800-327-6012

Bio-Ag of Michigan

246 Cross Rd. Kinde, MI 48445

1-989-874-6009/1-888-825-9373

Midwestern Bio-Ag of Iowa

18355 170th Ave, Monticello, IA 52310

1-319-465-3503/1-888-465-3503

MBA of Minnesota

16231 Co Rd 18, Utica, MN 55979

1-866-485-4300

Midwestern Bio-Ag of Wisconsin

10955 Blackhawk Dr.,

Blue Mounds, WI 53517

1-800-228-2189/1-608-437-9971

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Pasture Pointers

*By Dave Meidl
Midwestern Bio-Ag Livestock
Nutrition Specialist*

Grazing can have many rewards: improved herd health thus lowering culling rates, reduced feed and fuel cost, and providing animal waste distribution. And it is, of course, an essential part of organic farming.

There is much more to it than just opening up the gate and chasing the cows out to kick up their heels in the green grass. Grazers face challenges of having proper lanes, fencing, fertile soil with quality forage, balancing the ration, ample available water, and when to move animals.

A plan is needed. What are your and your family's goals with

(Continued on page 11)



Meet Livestock Nutrition Specialist Dave Meidl



Dave Meidl

Dave Meidl brings more than 30 years of experience in the ag industry to his new role as Midwestern Bio-Ag's Livestock Nutrition Specialist.

Dave has been working as a consultant for Midwestern Bio-Ag since 2009, and just recently stepped up to his new position.

Born and raised in Minnesota, he grew up on a livestock farm. After high school, Dave worked in a variety of ag businesses including a farm supply store and a feed mill, where he got his start in sales and then management, and also in developing and marketing livestock nutrition products.

He studied for two years at the University of Minnesota in Waseca with a major in Diversified Agriculture (livestock production & nutrition, crop management and ag economics).

Dave clearly sees the connection between quality forages, high forage rations and healthy cows. "Healthy cows save money," he says.

...Pasture Pointers

(Continued from page 10)

grazing? (It might be, for example, to have a quality pasture for your dairy cows to graze all season.) Answer this first before starting to lay out the plans of where, what and how.

Utilization of feed provided by pasture is better in intense rotational systems where one day's grazing will use 65-80% of a small area. Continuous grazing on large areas, on the other hand, utilizes only 30-50% of the available feed.

In addition, remember that 70% of the nutrients animals consume from forage is excreted in their urine and feces. These nutrients are more evenly distributed in rotational grazing versus continuous.

It starts in the soil

When selecting pasture ground, don't neglect the importance of the soil. What does the soil test say? Do we need to apply soil correctives? What is needed for fertility for the crop we are going to grow? What is the field's history? Does it just have too darn much rock to work up?

Rotating row crops with a couple years of pasture can improve the soil structure, increase organic matter, and disturb the life cycle of crop pests.

In selecting seed, use a blend of both Cool and Warm season forage varieties for season long



production. Adding some legumes, which provide their own nitrogen, provides N for the grasses as well.

In intensive grazing the length of the paddocks should always be less than 4 times the width.

Keep a good source of water close. The shorter the distance to water, the less of a herding effect you will get, as animals will tend to drink one at a time and it will be easier on your soil.

The farther cows have to travel for water, the less they will drink and milk production will suffer.

There is no one way to control weeds so plan on using various methods. Animals will eat many weeds in their vegetative stage (some with good feed value)

keeping them from going to seed.

Don't get the animals out on pasture too soon. I know we are all anxious for that, but good preparation will help the change go smoothly. Transition them slowly by feeding before they go out and then limiting the time they are initially allowed out on pasture. Increase grazing time daily, at least over a week's time.

We know that early spring growth is high in protein, often averaging over 20%, and low in fiber. However the majority of that protein may be non-protein nitrogen. So now the diet becomes too high in soluble and degradable protein requiring more energy to metabolize the protein from the forage and to optimize rumen fermentation.

In early lactation cows can benefit from an addition of some un-degradable or bypass protein.

(Continued on page 12)

Do everything you can to get the soils healthy and mineralized. Do everything you can to get the livestock healthy and comfortable

...Pasture Pointers

(Continued from page 11)

In addition, the use of highly digestible fiber by-products such as soy hulls or beet pulp should enhance rumen fermentation resulting in better milk production and components.

Don't forget the minerals; Sulfur is important to make complete protein with all the soluble protein coming from lush pastures. Potassium can be in excess while Magnesium is low, so be sure to address this in your supplementation program. Also ask about our free choice pasture mineral.

Do everything you can to get the soils healthy and mineralized. Do everything you can to get the livestock healthy and comfortable.

Grazing cows also have a higher maintenance need because of their added activity, requiring some form of supplementation to maximize your production and economic return.

How long is too long?

Knowing when to move animals can be a little tricky and you get better at it with time.

You need to look down at what is happening (a tape measure or measuring stick is helpful) How much are they eating? Look at the next paddock. Look at the former paddock. Look at the weather and growing season.

At some point you may even have to skip a paddock

(make hay on it) to get the animals back on more nutritious forage.

As a general rule I don't like grazing below 4 inches to speed up recovery. The more leaf area that's available to capture solar energy allows photosynthesis to take place without depleting root reserves.

Other benefits of letting the forage grow taller include more canopy meaning that there is less drying out or baking of the soil, and when leaving the crop higher with a 30-day rest period, you have less parasite infestation possibly minimizing the need for de-wormers.

Remember: Do everything you can to get the soils healthy and mineralized. Do everything you can to get the livestock healthy and comfortable.



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Inoculants can save you \$\$\$

Earn up to \$60 per acre with Fermentation Plus silage inoculant!

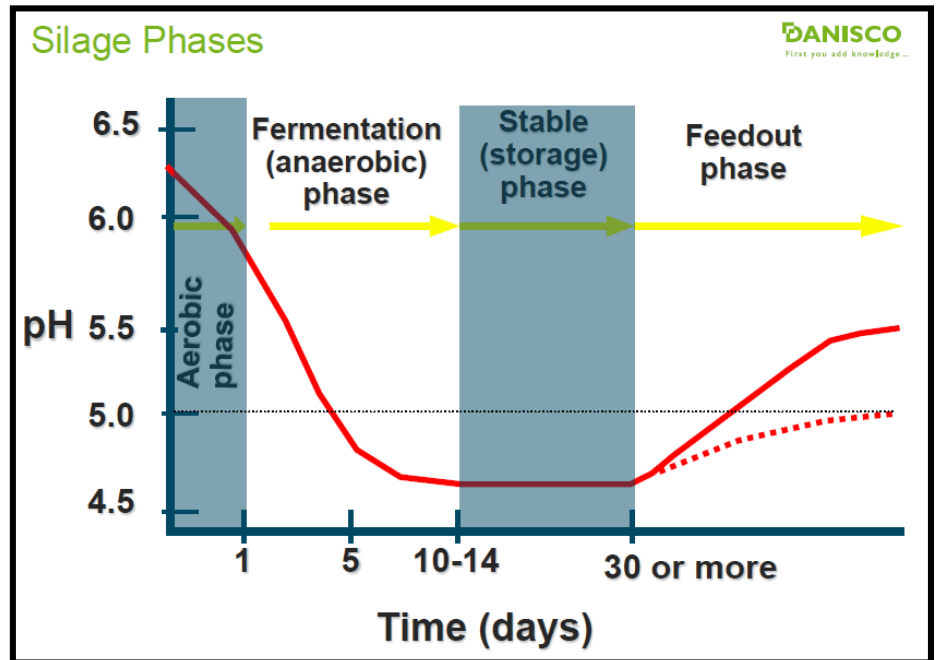
By Jon Woolever
MBA Dairy Nutrition Staff

Today's silage inoculants can easily bag producers an extra \$45-60/ acre by reducing the amount of forage lost during ensiling and storage.

As feed costs continue to rise and milk prices remain unpredictable, improving efficiency is the only guaranteed way for producers to improve profit margins. Combining a proven silage inoculant like Fermentation Plus with sound silage production strategies can create savings of up to \$400/acre of alfalfa and \$540/acre for corn silage!

Silage fermentation is critical to long-term storage of forage products on a farm. Whether you store in a silo, bag, bunker, or pile a quick and complete fermentation will lower the pH, reduce dry matter losses, and limit the growth of spoilage organisms.

Fermentation is split into 4 phases shown in the graph on this page. Inoculants help influence the first and second stage by creating a large population of beneficial lactic acid product bacteria (LAB). The lactic acid produced by these bacteria will drive the pH down which helps stop plant respiration, limits the ability of spoilage bacteria (*Clostridium*, *E coli*, *Klebsiella*,



yeast and mold), and increases forage digestibility.

Many producers ask "Does it pay to apply a silage inoculant?" Research by Richard Muck at the U.S. Dairy Forage Research Center in Madison has consistently shown a positive economic return to using inoculants. Inoculants successfully reduced silage pH compared to controls about 60% of the time for alfalfa and grass silage and about 45% of the time in corn silage. DM losses were reduced by about 64 in 38% of the trials with an overall average improvement of 2-3%. Increased animal performance (milk production & weight gain) have also been reported with an average of 3-5% improvement. (Muck, MFS, 2011)

When selecting an inoculant make sure to select one that is specifically designed for the type of forage being ensiled.

Also, ensure that you will be applying at least 100,000 CFU/gram of forage. Select a product that has been proven to work on a wide range of crops & plant sugars as well as one that is stable over a range of pH and moisture.

Packaging that is airtight and moisture proof will ensure that the bacteria are still viable at the time of application.

Pay particular attention to the manufacturer's instructions for mixing and application as water soluble product tends to only live for about 24 hours in an applicator tank.

MBA's Fermentation Plus silage inoculant combines four homofermentative strains of LAB to provide a rapid and sustained pH drop throughout the fermentation process. The goal is to reach a stable, storage level pH of <5.0 for alfalfa & grasses and

(Continued on page 15)

....Inoculants can save you \$\$\$

(Continued from page 14)

<4.0 for corn silage as quickly as possible.

All of MBA's bacteria strains have undergone extensive research to prove they are effective in creating lactic acid across a broad spectrum of forages and crops, at varying moisture levels, and across a range of pH's.

Fermentation Plus combines these bacteria with an enzyme package that helps convert plant starches to bacteria available sugars, helps breakdown fiber, and jump starts the fermentation. We use only the highest quality, foil packaging to ensure a long shelf life & excellent product quality.

Inoculants alone are not a substitute for good management practices. Ensiling quickly and at the correct moisture are critical elements for creating a stable silage product. Poor management throughout the harvest, ensiling, storage & feedout phases can result in up to 60% of the crop that was grown being lost.

Good managers can reduce to-

CROP	MATURITY	BUNKER	STAVE	SEALED	LENGTH OF CUT
Corn Silage	60-70% moisture	60-70%	60-68%	55-60%	3/8 to 3/4"
Alfalfa	Late Bud	55-65%	55-65%	55-60%	1/4 to 3/4"
Cereal+ Grass Silage	Boot Stage	60-70%	60-68%	55-60%	1/4 to 3/4"
Sorghum	Milk-Dough	60-70%	60-68%	55-60%	1/4 to 3/4"

tal losses down to about 15% which can result in significant savings in purchased feed and fewer acres needed to grow sufficient forages for your live-stock operation.

Below are list of management factors that are important when harvesting high quality silage:

- ◆ Maturity at Harvest
- ◆ Moisture of Crop
- ◆ Length of Cut
- ◆ Filling Rate
- ◆ Packing Density

- ◆ Bacterial Inoculant
- ◆ Cover/Storage Structure
- ◆ Feed-out Rate

Talk with your local MBA representative today about our Fermentation Plus line of silage inoculants and how they can result in an extra \$45-60 per acre in forage production.

Also, your representative can provide additional details on how to best manage your entire forage production system to minimize loss and maximize return.

Here are a couple of real life examples showing the economic benefit to using inoculants.

Reduction in DM loss on 100 cow dairy

Total corn silage ensiled	1500 tons
Value of silage (\$50/ton)	\$75,000
Inoculant cost (\$0.75/ton)	\$1,125
Tons of silage saved or to pay for inoculant	22.5 tons 1.5%

Research shows an inoculant saves 3-5%!!

5% savings = extra 75 tons of silage = 27 days of corn silage (@ 55 lbs AF/hd/d)

Animal Performance Benefit

Average increase of:	3-5% or 3 lbs/cow/day
50% effectiveness:	1.5 lbs of milk/cow/day
Milk price:	\$10/cwt
Additional Income:	\$0.15/cow/day
Inoculant Cost:	\$0.03/cow/day (60lbs silage/cow/day)

Return On Investment of 4:1 @ \$10/cwt milk!



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ADDRESS CORRECTION REQUESTED

20th annual

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