

REGENERATING AGRICULTURE

A Keystone Bio-Ag Newsletter

March 2022



From Melvin's Desk

Greetings to All!

Wow! Spring is almost here. Hopefully you enjoyed your winter break, read some books, and took some time to get your crop plan and strategy together.

One thing that is hard to overemphasize is the value of using diverse cover crop blends and a subsoiler, especially in compacted soil. While fertilizer is a benefit, it seems that this combination along with the Rejuvenate program is an invaluable combination to improving soil biology and increasing nutrient release. Also, loose and breathable soil results in more carbon dioxide, which is frequently one of the biggest limiting factors for high yielding crops.

John had some interesting thoughts on carbon dioxide release and carbon dioxide cycling at the Winter Meeting this past month. Check out the phone recording if you're interested in finding out more.

John also elaborated on how you can increase your nitrogen efficiency in this era of rising nitrogen and conventional fertilizer costs, so if you have interest in that, check out the recording as well. Or call us.

I also thought I should give an update on the potting soil. It remains a popular seller despite the fact that we had some challenges with it last year. The challenges were a complete surprise because we did not change



Take time to relax and enjoy your family!

the formula. It seems as if the one product was sifting out in transit to our location and caused inconsistency in the blends, which was solved by thoroughly mixing the whole tote before weighing out part of it and adding it to the batch being made. So we have reason to think that we have it addressed, but keep an eye open.

If the nitrogen seems lacking, we found that 2-3 pounds of blood meal or meat meal sprinkled over 100 flats, and then watered in, does a good job.

Also, if you have any feedback about anything, please don't hesitate to reach out to us. We look forward to talking with you!

Thank-you, and may God bless you with a happy and productive year.

-Melvin Fisher

The Joy of Implementing a Regenerative System

The industry is more & more looking at the regenerative system of farming, which is encouraging because of the route that the conventional industry is taking.

What is a regenerative system?

A regenerative system is where we optimize the use of the free resources that are available to us, including some of the approximately 32,000 tons of nitrogen that is above every acre of land, and we use those re-

sources to regenerate our land, our food supply, and our profits.

The joy that can be found in implementing a regenerative system is that, when implemented properly, we don't have to constantly go to war with the bugs and diseases. Instead, we shift the focus to creating an environment where the plants thrive and thus become resistant to these diseases and insects.

The Joy of Implementing a Regenerative System, cont.

To illustrate what this might look like, I drew two separate diagrams; one indicating what the regenerative system looks like and what happens when we focus on plant health, and the other one indicating what the degenerative system looks like and what happens when we focus on chemical warfare.

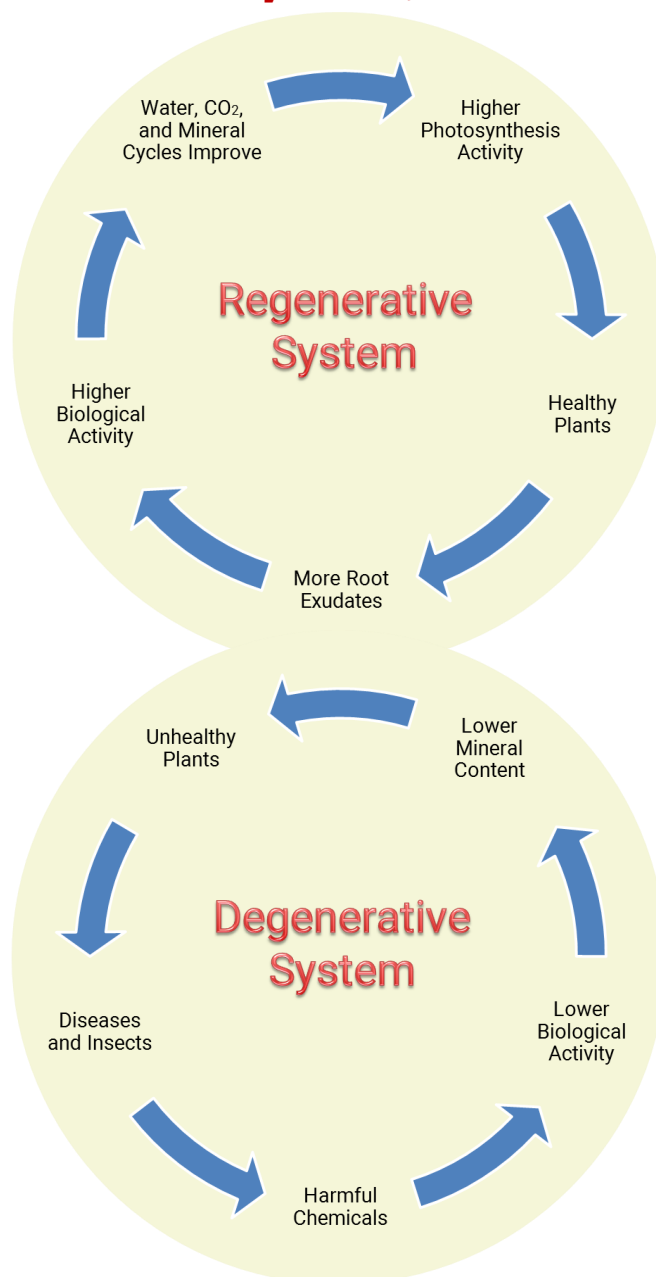
Which farming model will you choose? For you, for your family, for the next generations?

So how do we implement a regenerative system? One thing that is important to point out is that if we want to regenerate the system and optimize the use of our free resources (sunshine, water, carbon dioxide, and nitrogen) we need to have plants in the equation. We need to keep our soil covered as much of the time as possible, because it is really plants and photosynthesis that trigger this whole regenerative system.

Take a look at the regenerative model again. You can take any one of those points and work on that piece and all the rest will improve. The question is "how fast?" What we have found to be most helpful is to focus on several of them at once, to create a symbiotic response where one compliments the other. Where $1+1$ does not equal 2, but maybe 11. The 3 that I have in mind here are diverse cover crops (plant category), proper subsoiling (category of improving water, carbon dioxide, and mineral cycles), and the Rejuvenate program (higher biological activity category).

Those are what I call the foundations for success, but you can add a fourth to really turbocharge the system, and that is foliar applications targeted to increase photosynthesis & brix content on your crops. For me, this is when it really becomes fun because of the potential that is possible. Considering that most plants are photosynthesizing at only about 20% of their inherent capacity, it means that we have quite the opportunity to speed it up; by a factor of 3-5 times, which tremendously helps with growth and quality because these sugars are what comprises about 95% of the plant.

That's right! With all the focus on minerals, it's interesting to note that about 95% of plant biomass and structure is not minerals, but sugars, which are then transformed into lignin, etc. This means that by increasing photosynthesis and brix content, you can tremendously increase your yield, not to mention quality because as these sugars and carbohydrates are produced through photosynthesis, some are sent out through the roots as root exudates, to feed the soil biology, which then continue to structure the soil, cycle



more carbon dioxide, and release more nutrients. It's a beautiful system that was designed to work when supported properly and not constantly abused.

Am I suggesting that soil mineral balance is not important? No. That is important and very helpful to address. It would probably be the next step, along with addressing carbon to nitrogen ratio.

In summary, when we implement the regenerative system properly, we should be able to increase yield, quality, and profitability. Will it always be easy? No, you'll have some challenges, but the joys far outweigh the cost. Be well, and enjoy the spring. -Melvin

Growing Tips for High Quality Forages

With another very blessed and productive growing year behind us, the anticipation, excitement, and planning for another growing season accelerates the heart rate for a lot of Regenerative farmers.

Growing quality forages can bring a lot of challenges, but I find that hay fields will respond very rapidly to the correct harvesting management and fertility applications. They can also respond negative very quickly as well.

Start with asking yourself a list of questions: Did I achieve my goals last year? How was insect pressure? Did we achieve yield goals? If you did, then Celebrate! If not, what happened? How was quality compared to previous years? Why do my stands thin out after 3-4 years in production? Etc. etc.

Establishing new seeding:

I have observed very successful fall and spring establishment; however, find what works in the context of your operation. For us, we have the most success with spring seedings. I have discontinued nurse crops for the sake of the alfalfa and grass; I have observed quite often where the nurse crop is choking the new seeding. If you are a dairy farmer in need of the extra forage, go with light seeding rates of nurse crop.

Soil preparation is key! Ideally start with a clean seed bed tilled 2" deep; get it powder fine. Then pack before and after planting. In our experience, the Esch drills do the absolute best job in seed placement. Do not work the ground or plant too wet; you will be further ahead even if you have to delay your planting 2-3 weeks to wait on nice weather!

Fertility Management:

The easiest department in growing high producing and high quality forages, drop all commercial NPK fertilizers, insecticides, herbicides and fungicides!! These are hard on the soil, the roots, and the check book.

Forage requires lots of soluble calcium. However, with the tremendous tap root, it can tap into a major calcium reserve that in the soil. The only problem with that calcium reserve is that it will be dependent on Biology, moisture, and boron to move into the plant.

If you are applying manures try to apply in the late fall Oct/Nov.

New seedings can be finicky to fertilizer applications, 200-300 lbs. gypsum, 2 lbs. actual boron (20 lbs. of 10% boron) is adequate; spread at planting time. Then follow same foliar as established fields.

For established fields, use 200-300 lbs. gypsum, 150 lbs. Super Sequence, 100 lbs. Grow Pro Plus and 4-6 lbs. "actual" boron per acre. Note that if your CEC on the soil test is lower than 8, you want to stay on the lower rate of boron. Apply this blend prior to greenup. Follow up with a foliar after 2nd and 4th cutting with 1 qt. Rejuvenate, 1 qt. Holo Cal, 1-2 oz. Santerra, 1 lb. Epsom salt and 2 lbs. Boric Acid per application. Approx. \$155.00 per acre per year.

Harvesting/Quality management:

This is probably the biggest challenge in growing quality forages. I will say this; there is no such thing as handing farmers a prescription for harvesting "quality" forage. Target a 30-35 day cutting interval; if you have plenty of moisture and heat, it will mature quicker, meaning harvest sooner. Raise cutting height to a minimum of 4 inches, I was told this winter that 6" is better yet, so we will be experimenting with 5-6" cutting height this year. The idea of cutting higher is preserving that solar plate and soil exposer protection.

Hay-in-a-day has brought a lot of positive results in quality; don't condition, lay it as wide as possible, ted within a couple hours of mowing, rake or merge early afternoon and bale by 4-5:00. This process requires a sunny day with light winds and low humidity. We have had hay as dry as 35% moisture in that process but as high as 70% in 1st cutting, with not ideal conditions... however, the interesting thing was that there was zero butyric Acid!!

Here is a quote I like, written by Don Campbell: if you want to make small changes, change the way you do things; if you want to make major changes, change the way you see things!!

Stay tuned!

-Alvin Peachey



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New! John Kempf Meeting Recording is now available! See below.

*Our mission is to educate, encourage,
and empower you to produce
healthy crops by supporting you with the
products and information needed to make
regenerative agriculture successful.*



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