Regenerative Agriculture Newsletter

Empowering farmers to cultivate a better future.

Compiled by Keystone Bio-Ag August 2025

THOUGHTS FROM KEYSTONE

By Melvin Fisher

Greetings to All!

First and foremost, a prayer of gratitude to God for His many blessings—the blessing of family, friends, and community, the blessing of not suffering from drought or war, and that we have hope for a better future!

I also wish to—once again—express appreciation for all past and present customers. We appreciate your business and hope that even as we continue to grow, we can become better at serving you in your journey toward healthy, more-vibrant crops.

As I write this, we are rapidly heading toward fall. Fall brings harvest. As crops mature, keep potassium in mind. Plants need a tremendous amount of potassium during the fruit fill stage. Most minerals can go back and forth in the plant to perform a job over and over again, and potassium does this as well, until it goes into this stage. Then it is a one-way street—the potassium goes into the fruit and stays there. So adequate levels of potassium are critical during the fruit fill stage. We see growers have the best success with a combination of soluble 0-0-50 in the drip irrigation and Pro-K in the foliar.

As a valued customer, please know that we appreciate feedback. If there is something that you think should brought to our attention, please don't hesitate to do so.

A quick note on orders. We appreciate the effort that all of you put into having your orders here by the deadlines listed on our calendar. It helps us plan ahead and serve you more effectively. Having said that, if you ever run into a bind and realize you need something after our order deadline, please know that—in light of customer service—we are happy to help you out whenever possible. Just call us. While there will be an Expedited Order Fee of $30, it could still be better than having to drop your work and coming here to pick up your order.

If you are having challenges with a certain crop, consider taking a sap test yet this summer to help you determine what might be the limiting factor for better health.

As fall approaches, remember to give back to your soil. It's a great time to do soil testing and sow cover crops to help rebuild the soil and feed the microbes. Call us if you want advice on some fall soil building.

With that, I want to wish all of you the best of success, now and in the future. Be well.

Thank-you!

STRAWBERRY MANAGEMENT

By Melvin Fisher

Strawberry production is one of the topics I am very passionate about. I find that many growers instinctively know that strawberries have far greater yield potential than what is generally being harvested.

Why would any one want to grow a crop as challenging as strawberries? I sometimes ask myself that question. Aside from the simple answer of simply growing healthy food, I'm sure that there are multiple reasons—one of the benefits to growing strawberries is having an early income. I also think there is a certain element of hope that comes with growing strawberries—just like any other crop—where we are trying to convince ourself that, this year, we will do an exceptional job of growing them. But do we? Are we intentional about making it happen?

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STRAWBERRY PRODUCTION, cont.

THE OPPORTUNITIES

Let's do some numbers for a moment. Let's start with yield. Is 1 pint per plant a reasonable yield goal? Next consider spacing: with double rows on plastic, 16" spacing on the row, and 5' foot center between each plastic row, you have an approximate 13,000 plants per acre. Things happen, and maybe 1000 plants don't make it overwinter. At 1 pint per plant and $6.00 per quart, that comes out to $36,000 gross profit off one acre.

The question I want you to think about is: "What does this look like in terms of doing a better job with implementation of what we know about strawberries? Is it worth it?"

The answer, from my perspective is a resounding YES! If you have one acre of strawberries, and you only yield 1 cup per plant (compared to the above 1 pint goal), that reduces your gross margin by 50%, yielding only $18,000 gross, instead of $36,000. What could you have implemented better to make up at least some of that $18,000?

Or let's say you did a great job and you got 1 quart per plant. That would now mean $72,000.00 gross. Would it have been worth putting in the extra effort?

I can't help but ask these questions because I have seen some exceptionally high production numbers—a few growers having achieved 2 quarts per plant. Of course, we know that this is life, and that things don't always go as we planned. At the same time, we need to recognize that our results are largely determined by the efforts that we put in.

THE CHALLENGES

How are strawberries different from other main vegetable crops, and what makes them challenging to grow? Some observations: (1) they need to overwinter without damage — a challenge because they are very susceptible to winter damage when they don't have the right nutrition, (2) They are very susceptible to crown damage from diseases, and (3) they often have very poor root systems.

BUILDING SOIL HEALTH

If you are serious about growing strawberries with high yield, then you really need to work toward getting the soil in shape beforehand. Sick soil does not generally produce healthy plants. This should start with a full year of rest before the strawberries are planted.

One of the reasons this is so important is because most of the soil borne diseases that strawberries are susceptible to are a result of low microbially active carbon—which makes cover cropping critical. Healthy cover crops are one of the best tools for rebuilding microbially active carbon. For those of you who don't know, microbially active carbon is the sugars that can be digested by microbes—which are produced by all green, growing plants. The higher the brix level, the more microbially active carbon is being pumped into the soil.

What could this look like in actual practice? During the summer, 1 full year before planting the strawberries, you could sow either our Summer Rest mix, Sorghum Sudan, or other appropriate cover crop blend. Once that grows to maturity, it could be mowed off (sorghum sudan) or pushed down with a no-till drill (Summer Rest) when sowing the next cover crop.

That fall, MycoStructure could be sowed for the fall and winter cover crop. This blend is designed for aggressive rebuilding of soil aggregate stability and for getting some mycorrhizae back into the soil.

About mid-May, the Fumigant mix should be sowed for a natural fumigation effect, which can be very helpful in reducing the soil-borne fungal pathogens before the strawberry planting. To make this work well, the blend needs to go into maturity, till the mustard has been blooming for about 5-7 days—then the blend should be terminated.

The downside to letting a cover crop grow to maturity is that it will break down harder. Thus it should be terminated several weeks before the strawberries are planted. Ideally, the cover crop would be shredded well so that it breaks down faster, then 6-8 bushels of oats can be sowed per acre, and let grow for about three weeks, then the plastic can be laid for the strawberries. Or if time doesn't allow, you can go directly into strawberry production after the Fumigant mix, although I generally prefer growing a younger, more succulent crop in-between.

These are only ideas of what this soil building process could look like. Please adapt what is right for you.

Last, but not least, feed your cover crops. Cover crops are your work horses. I got this analogy from Levi Troyer, Wisconsin, last time we met (Thanks, Levi!). He reminded me that while it is the cows that bring the milk check, we wouldn't think of not feeding the work horses just because they don't bring us a direct return. We need them to help with the work so that we can feed the cows, so that we can get the milk check. The same is true for cover crops in growing healthier crops.

FINAL PREPARATIONS BEFORE PLANTING

About 1-2 months before you want to lay plastic for the strawberries, you should get your soil tested so that you can put on fertilizer accordingly. Strawberries are heavy feeders and you don't want to miss this opportunity to put down some food for them. Generally speaking, you want at least 60 units N, 120 units Phosphorus, and 120 units Potash applied with this dry blend. This is not a time to skimp because fall applications make a huge difference in spring production—because the buds are initiated in the fall for next spring. In other words, you can have a huge influence on spring productivity in the fall.

We generally recommend laying the plastic several weeks before planting. This gives a final opportunity for some soil building yet before planting. Lay the plastic, hook up the drip lines, run the irrigation, and inject 1 gallon Rejuvenate, 1 gal. High Energy Fish, and 1 lb. BioQuest Foundation (per acre). This injection is intended to push the biology into a more helpful state so that when you plant the strawberries, they are ready to take off.

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FALL CROPS & BLACK ROT

By Kevin Maples

I feel its time to talk about the elephant in the field, Black Rot. I walk a lot of fields in the fall, both conventional and organic, and I feel we are at a point where we have accepted this disease.

Before we dive into some thoughts on preventative treatments, lets talk about what Black Rot is and how it effects a crop.

Black Rot is a destructive bacterial disease that targets Cole crops, especially in the fall.

WHAT IT LOOKS LIKE

- V-shaped yellow lesions starting at leaf edges, pointing inward toward the midrib;
- Blackened veins inside the lesions—often visible when held up to light;
- Wilting and stunted growth as the disease progresses;
- Stem and vascular discoloration in advanced cases.

HOW IT SPREADS

- Seed-borne: Even one infected seed in 10,000 can trigger an outbreak;
- Splashing water: Rain, irrigation, or dew spreads bacteria between plants;
- Insects and tools: feeding-insect damage or contaminated equipment can introduce the pathogen;
- Warm, humid conditions: Ideal for infection—especially 75–95°F with high leaf wetness.

WHY IT'S SO TOUGH

- Once inside, it clogs the plant's vascular system with gum-like compounds;
- It's systemic, meaning it can move throughout the plant—from leaf to stem to root;
- No curative treatments—only preventive strategies.

PREVENTATIVE STRATEGIES

- Pre Transplant: Root dip or tray drench your plants using BioQuest Foundation or Serenade ASO. This colonizes the rhizosphere and primes defenses;
- Soil Prep 1 week before planting: 1-2 qt. Rejuvenate or Root Primer, 8 oz. Ensoil Algae, 1 lb. BioQuest Foundation. This will prime the soil with biological activity;
- Vegetative Stage: Foliar and Drip Pro-K, Sil-Max, Calcium, and Boron. This will help strengthen the vascular system of the plant;
- Heading Stage: Foliar Copper, Sil-Max, Pro-K. Will help stress support and canopy protection during head fill.

In summary, early preventative applications of these nutrients and biologicals have larger effects on outcomes than waiting to spray till you have a crop infection.

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430 Voganville Rd
New Holland, PA 17557
717-354-2115

BARGAIN COUNTER

Potting Soil

Several Pallets dried-out potting soil from last winter. $9.00 per 2 cubic foot bag (half price).

Microbial Inoculants:

Micro5000 (5 acre)	$124.00	**now $61.99**
Micro5000 (10 acre)	$206.00	**now $102.99**
Micro5000 (25 acre)	$407.00	**now $202.99**
Santerra (1 lb. Bags)	$179.85	**now $89.99**

Soluble Fertilizers:

15-0-1 (8 lb. Pail)	$21.50	**now $14.99**
15-1-1 (8 lb. Pail)	$45.00	**now $29.99**

Please contact us if you no longer wish to receive our newsletter. Thank-you!

STRAWBERRY MANAGEMENT, cont.

PLANTING

We highly recommend spraying the plastic with Diatomaceous Earth (DE) before planting. 1 pint dissolved per gallon of water greatly reduces heat stress. It reflects the heat so the plastic doesn't become so unbearably hot.

Plant in evening or on a cloudy day, when possible.

Plant depth: 1/4 inch on top of plug. Spacing: 14-18 inches between plants—tweak to your past experience.

Water heavily right after planting. This is often overlooked, but is an important part of starting strawberries well. We recommend 4-6 hours of watering, minimum.

FALL MANAGEMENT

Good nutrient management in the fall is critical for successful, high yielding strawberry production. Nitrogen and calcium is critical early in fall, then potassium levels need to be higher later during bud initiation, which occurs late September/early October. Maintain high potassium going into the dormancy stage, late in winter. I don't room to elaborate on the details here, but feel free to call us to discuss your situation, or for our starting recommendation sheets. We have one that has 1 acre rates, and one for the smaller growers, with recommendations per 1000 plants.

Water approximately 1" per week (2" late September)

Aim for 2-3 branch crowns by end of October. If you have less than that, consider using row cover in early November. The added heat will help them mature faster.

WINTER PROTECTION

Traditional recommendations are to cover the plants with straw approximately mid-December, based on temperature of 18 degrees. Strawberries are very susceptible to crown damage, from either diseases or cold temperatures, therefore the recommendation for covering with straw. Straw keeps temperatures more consistent than row cover. Snow adds to the winter protection as well.

Whether or not you cover the strawberries, the important part is to avoid winter damage. My 2 year trials are showing that good nutrition can do just as good a job at that as covering with straw—at least here in PA and with the temperate we have had the past two years.

You want to avoid winter damage because plants that suffer damage do not absorb nutrients or water very well in the spring and therefore will not yield well. Want to check the plants? Cut the crown apart. You want to see pearly white inside the crowns (note that they will turn brown in several minutes, even if they are healthy).

IN CONCLUSION

It is worthwhile to implement good management practices when growing strawberries. Be intentional about cover cropping, proper planting, and fall plant nutrition. We expect to write an article this winter concerning spring production.