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Better Naturally!

Notes & Quotes

INSIDE THIS ISSUE

May/June 2020

Shipping Notes	2
Mid-Season Garden Booster	2
Tissue Tests	2-3
Sulfur supplement for Livestock	4-5
Shipping Lead Times	5
Fertrell's Liquid 3-4-3	5
Importance of Copper	6
Mycotoxin Management	7
Upcoming events	8
New Dealers	8
Marketplace	8
Advertise for FREE	8

Our Mission

Your trusted partner; creating superior products for healthier soil, plants and animals. Healing the earth and feeding the world
- Better Naturally!

Fertrell High Sulfur Mineral

SULFUR IS A KEY NUTRIENT FOR ALL LIVING CREATURES

***10% off during month of June**

Features and Benefits of Sulfur May:

- Increase milk production
- Increase rate of gain on meat animals
- Essential for Rumen microbial synthesis
- Decrease external parasites - flies, ticks, mosquitoes
- Buffer high nitrogen from pastures and forages
- Reduce Milk Urea Nitrogen (MUN)
- Formation of essential amino acids - methionine, cysteine & cystine



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10 % discount for any orders placed June 1-30th 2020 . Restrictions apply.

Shipping Notes

By Beth Knaub

"For as the rain and the snow come down from heaven and do not return there but water the earth, making it bring forth and sprout, giving seed to the sower and bread to the eater, so shall my word be that goes out from my mouth; it shall not return to me empty, but it shall accomplish that which I purpose, and shall succeed in the thing for which I sent it." Isaiah 55:10-11 (ESV)

Shipping Reminders:

- Please remember to give as much information as possible when asking for freight quote:

Delivery requirements: Notify call, delivery appointment, pallet jack, short truck, lift gate, limited access, etc. Please remember to watch what you are signing for at delivery. Do you see any signs of possible damage? **Also**, please check that none of the above accessories have been added that were not requested by you or by Fertrell. Also, please keep in mind that mud/soft ground is as big a problem for deliveries as snow and ice.

- It is important for direct shipments, that there be adequate space for a full-size truck to deliver into and out of your facility. Otherwise please look into an alternative delivery site.

- **Product information/weights:** Poultry NB & Swine grower bags make a difference especially when ordered by the pallet (not to mention the actual pallet weight itself).

Plan ahead: Although it is not the "early spring" rush, we are still very busy, and we are trying to keep our order turnaround time as quick as possible. But we cannot control ingredient deliveries, equipment breakdown or freight transit times. So, please keep this in mind when ordering. **"Working hard doesn't guarantee success and hope is not a strategy"** John C Maxwell

Mid-Season Garden Booster

By Seth J. Epler

Often times you will see that Fertrell recommends supplementing additional potassium throughout the growing season. This is mainly

for produce operations. However, it works just the same in any mix vegetable garden setting also.

With produce operations, using drip lines and water soluble products normally is the go to. But what about for those that do not have that option? Those folks should look to use Fertrell's Green Potash. This is a great low cost product that will help supplement that extra needed potassium in the middle of the season. This is especially important for all of your larger fruiting crops. These could be tomatoes, peppers, mel-



ons, eggplants, squash and things of that nature.

Look to our previous newsletter. There is a very good, in depth, article explaining everything there is to know about Green Potash. And after I read that, it struck me that I should be telling all of my customers to be using this in their gardens in the heart of the growing season.

And if you have soil recommendations from Fertrell, there is a strong chance they said to use soluble sulfate of potash. That is a great product that works very well. But it does not really make sense for those without the drip line set up. Therefore, Green Potash would be an excellent choice. This can be side dressed right into the garden and will start working for you immediately. Again, please look back to the last newsletter for more details on Green Potash. Or feel free to contact the Fertrell agronomy team for additional help.

Tissue Tests

by Sage Dennis

The bed is prepped, the seed is set, and the season is off to a great start. You feel proud and

your crops look great. You do your duties and scout properly to make sure you have no unforeseen problems but finally you happen to notice that "these plants just are not where I think they should be." You fertilize through the drip and nothing changes. By this time, you are starting to become a bit concerned when signs of some type of deficiency are starting to show. "Time to get a tissue test" you think when you are already weeks behind. Don't let this happen to you. Make sure you incorporate tissue testing into your duties to keep up on this growing season.

There are always a million things to do when the weather is nice so tissue testing doesn't get the representative it deserves, when it comes to your list of priorities, and I am here to tell you why it is needed to be made a priority. It's easy, getting your tissue tested is not a huge undertaking. Get a few clippings and send them into the lab. A few days later you are mailed back the results accompanied by Fertrell Tissues tests letting you know how to approach the problem if you happen to have one. Understand your plant's needs and address them accordingly. A plant will always grow to the nutrient that is least available and seldomly is that going to be any of your macronutrients.

Some things to keep in mind when you are looking at the advantages of tissue tests are some of the following. Tissues tests are an effective way to get a bead on your plant's health. Here are some important reasons to tissue test: It helps you get together a nutrient plan for your crops by showing you where potential deficiencies may lie. It helps you better understand the various needs of your plants depending on growth stages, so you can create a more finite plan for your crops. This is especially so for more valuable crops such as produce.

Now that you understand the significance of tissue tests, we need to learn how to appropriately take a sample. Some things to keep in mind when you are preparing a tissue sample. Collect the proper plant part and amounts. Collect 15 – 20 leaves, or at least half a paper lunch bag full, and choose mature leaves from the middle or upper part of the plant. Never send bottom

leaves or immature leaves. Consult a sampling guide for more specific instructions. If the leaves are contaminated with soil rinse them briefly under a stream of distilled water and allow to air dry. Consistency is key in plant tissue sampling. Pull samples at the same time of day. Plants with insect damage, and seeds as these will not yield the ideal results. Store it in a paper bags and send to the lab as soon as possible as tissue breakdown beings right away and if you wait too long or it takes too long for your sample to get to the lab it can become unusable. Label your sample bags, make sure the labels match your submittal forms and send them promptly. Pack the shipping box loosely to include some air space. If possible, collect and ship the samples the same day. If not, store samples in a refrigerator.

When you think about how much it costs for fertilizer, the time invested in lime or manure applications, and the labor in setting up drip tape/other inputs why would you not just take 5 minutes and spent a few dollars to make sure that you are being as efficient and effective as possible? This is where we at Fertrell can step in and assist you. We will happily take that tissue test and write a free recommendation for you and have it sent out as fast as possible. We will let you know where you are succeeding and what areas you might need to keep an eye out for. We will tell you how, when, the amount, and the product needed to address your plants immediate concerns to make sure it doesn't lag and gives you the yield that you want! Help your plants and your wallet and invest in a tissue test to save yourself money throughout the growing season. Tissue samples are time sensitive, please mail directly to Waypoint Lab 280 Newport Road Leola, PA 17540. For information call 717-656-9326 or go online at www.waypointanalytical.com and not Fertrell.



Suspect issues during the growing season?

Tissue Testing

**Discounts on tissue testing during June 2020
though Waypoint lab in Leola PA only.**



Better Naturally!

TISSUE TESTING BENEFITS MAY:

- **SHOWS YOU PLANT MINERAL DEFICIENCIES**
- **BETTER UNDERSTANDING OF PLANT NEEDS AT DIFFERENT GROWTH STAGES**
- **SIMPLE, EASY, AND EFFECTIVE WAY TO MANAGE YOUR PLANTS NUTRIENT NEEDS**

**Request more information & our NEW catalog by calling 800-347-1566,
emailing info@fertrell.com or writing to PO Box 265 Bainbridge, PA 17502**

Sulfur supplement for Livestock

By Jeff Mattocks

Sulfur is a key nutrient for all living creatures. It is an essential nutrient that we often overlook. For many years sulfur was free. It was being emitted by coal burning power plants, diesel fuel vehicles and other sources. This sulfur was caught in the clouds and returned to the earth by rainfall. However, this rain was acidic due to the sulfur dioxide and Nitric acid. The acid rain was causing negative side effects in lakes and water ways killing fish and reptiles in lakes and ponds. Also killing some types of trees and other vegetation. With acid rain causing environmental problems the EPA made laws and set restriction on sulfur and nitric acid emissions reducing the sulfur levels.

As I mentioned previously sulfur is an essential nutrient for cattle and other livestock. The sulfur helps the animal to utilize more of the proteins from the grasses that they consume. How does this work? In most grazing forages the grasses and legumes tend to be low in sulfur in the soil and therefore the plant tissue. Meanwhile the plant is full of nitrogen. Nitrogen is the raw ingredient of protein. Most laboratories actually test for nitrogen in forage samples. To my knowledge there are not any laboratory test for true protein. Instead, labs will test for the amount of nitrogen in the feed, then multiply nitrogen by 6.25 to get a crude protein level.

This is the universally excepted method for estimating protein values. What is not calculated is the relationship between nitrogen and sulfur. In the organic world of agronomic knowledge, we know that the relationship of nitrogen to sulfur is best at 10 to 1 or less. When the nitrogen to sulfur ratio is at or below 10 to 1 more of the nitrogen in the forages or pastures is better utilized by the animal. When the nitrogen is better utilized the Milk Urea Nitrogen (MUN) levels will be better. The milk protein levels will be higher. The animal's immune system will function at

a higher level. The animal's stress level will be lower. Livestock stress is the key factor to fly and external parasite issues. The flies can sense or detect which animals are struggling. Watch your herd sometime. You will see the flies are more attracted to animals that are lower body condition or struggling with heat stress or other type of stress that is holding them back from being truly healthy. Add all of these benefits up and it means more dollars in your pocket!

Sulfur is always best served through the soil to the plant to the animal. But this is not always possible. Sometimes the weather doesn't let you on the land to apply the much-needed sulfur. Sometimes the pocketbook doesn't always allow the expense of spreading sulfur. If you didn't get it spread on the ground for the plants to pick it up, you can feed it or free choice it to the livestock while eating the pastures or forages that may be low in sulfur. Last year Fertrell started offering High Sulfur Livestock mineral. This is designed to help livestock manage excess nitrogen from early and late season lush pastures.



Let's go back to protein and nitrogen for a moment. Previously, it was believed that a true protein is made up of minimum 3 amino acids. Many protein molecules have many more amino acids. There are 20 recognized amino acids. Our bodies and our livestock's digestive tract can breakdown protein to amino acids and recombine them into true proteins that their metabolism needs. Natural processes are really amazing sometimes! Where does sulfur come in? Well, 2 essential amino

acids require sulfur to be formed. Methionine and Cysteine are two of the four sulfur based amino acids. You may wonder if there are 20 amino acids why are these 2 important? Methionine has been proven to be a critical part of reproductive performance for ruminants. Cysteine is required for methionine to be fully functional. Methionine needs cysteine to work is the bottom line. With methionine and cysteine, you get better breeding. Over my 24 years of animal nutrition work at Fertrell, I have seen the lack of methionine in our livestock diets. Mostly in a slight lag in breeding conception rates. I have also noticed farmers with better forage sulfur levels have always had better animal reproduction.

This all adds up to sulfur in the plant or animal will enable more types of amino acids to be formed. Which means more true protein chains will be formed. Which leads to the animal being more efficient utilizing nitrogen to make true protein. All of this means lower MUNs and stress. It also supports better milk protein and reproduction. The reduced stress and MUN will reduce the likelihood of flies and external parasites attracted to your animals. I have also observed that dairy cattle with lowered stress levels tend to maintain lower Somatic Cell Counts. Just one more possible benefit.

Sulfur in the soil is best. But sulfur in the soil or the animal's diet is very important. In either case if we can get the nitrogen to sulfur ratio at or under 10 to 1, life gets better. A ratio of 8 to 1 seems to be better yet. But may not be cost effective. Consider supplementing your soils with sulfur on an annual basis. If this is not possible or realistic for your situation, consider supplementing your livestock with a high-quality sulfur supplement. Be cautious not to use powdered sulfur. This may cause eye and nose irritation to both you and your animal. A flake or mini prilled sulfur will be better to manage and less dusty. However, you choose to address this is up to you. But don't forget the sulfur. If you didn't put it on early this spring or last fall, you may need

to supplement your livestock. The nice part is, if they don't absorb it or make amino acids, they will deposit the sulfur on the soil for later plant use. Happy Grazing!

Fertrell High Sulfur Mineral

Features and Benefits:

- Sulfur may:
- Increase milk production
- Increase rate of gain on meat animals
- Essential for Rumen microbial synthesis
- Decrease external parasites – flies, ticks, mosquitoes
- Formation of essential amino acids – methionine, cysteine & Cystine
- Buffer high nitrogen from pastures and forages
- Reduce Milk Urea Nitrogen (MUN)

Cautions:

- Sulfur may have a toxicity
- Do not use as the only free choice mineral
- Do not mix in feed above 2 oz. per head per day – mature animals
- May cause lethargy, blindness, poor coordination – University of MN

More Sulfur:

- Seeing sulfur deficiencies in most forage and soil samples
- Soils are depleted in most areas of the U.S.
- Livestock need (more) sulfur
- Healthier soils, plants, and animals.

Shipping Lead Times Brandon Williamson

As our company continues to grow, we are doing our best to ensure your orders reach in you in a timely fashion. In order to do this, we are installing shipping lead times for orders. Please use the following "Lead Times" as a guide when ordering with us:

- 3 Pallets or Less of Stock Items - 2 Business Days
- 4-12 Pallets of Stock Items - 3-4 Business Days
- 13 or more Pallets of Stock Items - 6 Business Days
- All Custom orders - 5 Business Days

Any orders with assigned ship dates, cannot be changed without delaying the original shipping date.

If an order needs to be expedited, a surcharge of \$100 will be applied.

We appreciate your business and look forward to better serving you.

Fertrell's Liquid 3-4-3 By Dean Painter

Fertrell Liquid 3-4-3 is formulated to meet the nutritional demands of high producing crops in a liquid fertilization program, a supplemental drip or foliar program. It is a balanced NPK product that contains kelp, liquid humates, fish emulsion, and sodium nitrate. These provide a boost at planting time or during the growing season by increasing nutrient uptake and stimulating soil biology.

Fish emulsion and sodium nitrate provide the bulk of the NPK, while kelp supplies additional micronutrients along with plant hormones, auxins and cytokinins. The auxins and cytokinins help the plant to boost its natural immune system, which enables the it to cope with stresses (disease and pest pressure, heat and cold stress and drought stress). The kelp also provides the plant with a dose of iodine, which is readily absorbed and has the ability to deter some pests.

Fertrell Liquid 3-4-3 can be used in a variety of ways, based on individual farm needs. Suggested application rates are listed below:

- Transplant solution use at a rate of 2-4 quarts per acre or 1-2 ounces per gallon of water.
- Starter fertilizer for row crops at a rate of 1-1.5 gallons per acre
- Supplemental application in a foliar spray or drip application at rates of 2-4 quarts per acre.
- Fertigation program at a rate of 1.5-2 gallons per acre
- Small applications can be mixed at 2 ounces per gallon of water

Fertrell Liquid 3-4-3 is a liquid fertilizer blend available exclusively at Fertrell in 1-quart, 1-gallon, 5 gallon, or 55-gallon plastic containers. Contact your Fertrell dealer or salesperson to inquire about pricing and delivery.



Liquid 3-4-3

10% off during May*



Fertrell Liquid 3-4-3 is formulated to meet the nutritional demands of high producing crops in a liquid fertilization program or a supplemental drip program.



It contains good amounts of kelp and liquid humates along with the fish emulsion to provide a boost at planting time while increasing nutrient uptake and stimulating biology.

*Restrictions Apply

Importance of Copper By Alyssa Walsh

Copper is an essential trace mineral that's important for the growth of bones, body, and wool, healthy nerve fibers, coat pigmentation, and white blood cell function. It's needed for all grazing livestock, including sheep!

Late winter and early spring can be tough on livestock because of the wet and sloppy conditions. We've especially seen that here in Pennsylvania with the mild winter. It's been a muddy mess! These wet conditions are tough on all livestock's hooves because it can cause them to soften and lead to lameness. Lameness can affect your cow's overall health by reducing her movement and feed intake because she's spending more time laying down. If she's laying down because she has sore feet, she won't be eating as she should, which can result in a reduction in milk production. You can tell a lot about an animal's health from their hooves. Hooves are on a one-year growth cycle. Any areas on the hoof that are not smooth and shiny can be an indicator of poor nutrition, acidosis, toxins or molds, a stressful event or acidosis, etc., from the past year.



Hooves are primarily made of keratin, which is a protein that gives the hoof strength and elasticity. Copper is critical for the formation of cross-links in the keratin that help keep the hoof strong and hard. Sulfur is also very important for hoof health as keratin strands are linked together by sulfur bonds between sulfur containing amino acids for additional strength. Copper also helps prevent hooves from becoming dry and brittle. Copper is an essential nutrient for hoof health.

- Copper has benefits in dealing with internal parasites. Managing internal parasites is a constant battle for grazing livestock. Animals infected with parasites can have a reduction in feed intake, reduced feed efficiency, and reduced growth and performance. Copper sulfate has been used as a dewormer by many farmers since the 1950s (maybe even earlier). It can work as a deworming agent against some parasites such as *Haemonchus contortus* (barber pole worm), which infect large and small ruminants. While it works as a treatment, making sure the animal is not copper deficient should help reduce the incidence of internal parasites. As mentioned before, copper is important for white blood cell function. White blood cells are the cells of the immune system that are active in protecting the body against infections and diseases. A healthy animal is less susceptible to illnesses. For reducing your chances of being challenged by parasites, it's important to maintain good free choice mineral practices and good pasture management.

Fertrell offers a Grazier's Choice with Copper Sulfate which helps to meet your grazing livestock's copper requirements. We also recommend that you offer kelp and salt free choice along with the Grazier's Choice with Copper. I've heard on a couple occasions that animals fed kelp throughout their life are less likely to have internal parasite issues.

Copper deficiency can be seen in various ways such as decreased growth, rough hair coat, and loss of coat pigmentation. However, a brownish tint to black animals is a telltale sign of not enough copper in the diet. Forages and free choice supplements are both sources of copper. Therefore, copper deficiency can be from not having enough copper in your soils and forages. Again, it's very important to test and know the mineral levels in your soil and forages. While that sounds very cliché, everything needs to be in balance. This holds true in all aspects of life and farming.

Grazier's Choice

FREE-CHOICE LIVESTOCK MINERALS



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A superior free choice supplement for all classes of livestock.

A unique blend of nutrients specifically designed for grazing livestock

Fortified with Thorvin kelp, Redmond salt, vitamin E, selenium, calcium, and phosphorus



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Mycotoxin Management Tom Roskos, DVM

Mycotoxins have been a common topic this year because of the wet growing season we have had in the Midwest in 2019. Animal health can be negatively affected by presence of the toxins.

Where do they come from?

Mycotoxins are produced by molds. These molds thrive in warm damp environments. Molds can grow on growing plants or in stored feeds. Mostly we are concerned with molds in grain.

How many types of mycotoxins are there?

There are hundreds of types of molds but in livestock production we are concerned with a smaller number. The mycotoxins we are most concerned with include:

- Aflatoxin
- Zearalenone
- Vomitoxin – also known as DON (deoxynivalenol)
- Fumonisin
- Tz
- Ochratoxin

Often there are more than one mycotoxin present in feed. If conditions are good for mold growth, numerous species can be present at same time. Specific molds produce specific toxins.

What issues do mycotoxins cause?

First, molds of any type use nutrients from the crop to grow. This diminishes the quality and nutrient density of the feed stuff. The mycotoxins produced by these molds can cause a variety of issues, including:

- Immune Suppression – a weakened immune system can lead to an increase of occurrence of common diseases like mastitis, pneumonia and salmonella.
- Rumen Upset/Indigestions – Disruption of normal rumen function can cause reduction in milk production and loose or inconsistent manure.
- Disrupt Normal Reproductive Function – Most commonly with zearalenone. May see decrease in pregnancy rate and weak or irregular cycles.

- Damage to gut lining, followed by increased oxidative stress in liver.
- Decreased feed intake, especially with vomitoxin.

How does the body get rid of the mycotoxins?

- Inside the rumen a healthy population of bacteria, especially some of the Lactobacillus, can degrade mycotoxins
- If absorbed into the bloodstream, the liver can break them down. This does stress the liver
- Best is if the mycotoxins can pass through the gut and passed in manure. This is best accomplished if they are bound to another compound

What can help minimize mycotoxin levels?

- Not much can be done to control field molds since it is a function of heat and humidity.
- All attempts should be made to minimize storage molds. This includes proper techniques for eliminating oxygen and getting food fermentation of silage.
- Grain should be dried to moisture levels below 13% quickly and with good aeration.

Once present, whether from the field or from storage, there is not a way to get rid of the mycotoxins. They are not destroyed by heating or fermentation.

How can I help my animals deal with mycotoxins?

- Dilution – Feeding suspect feeds with good feeds is helpful
- Maintain good gut health. Rumen acidosis will make effects worse. Probiotics are helpful to maintain beneficial bacterial levels.
- Binders – The best approach to mycotoxin control is with binding agents in feed. They attach to the toxin and move it through the digestive tract.
- Antioxidants – These products help the liver deal with oxidative stress and cellular damage.
- These include:
 - Vitamin A and Vitamin E
 - Selenium
 - Zinc
 - Vitamin C

- Dr. Paul's Antioxidant Blend tincture

What are good binding agents for mycotoxins?

Different binders work better on different mycotoxins. Therefore, it is beneficial to use more than one.

Binders include:

- Clays – Such as montmorillonite clay and bentonite
- Humates – A source of stable carbon
- Yeast fermentation products
- Diatomaceous Earth
- Organic Acids – Example=Apple Cider Vinegar

Dr. Paul's Lab Product – Ration Boost. Developed for this purpose. This product uses a combination of humates and montmorillonite clay and apple cider vinegar. Comes as a bulk product that can be fed in a TMR or grain mix or as an individual cow treatment. Recommended dose is 1-2oz. each feeding. Palatability of this product is good so can be used as a top-dress.

Dr. Paul's products can be found online at www.fertrell.com under BUY ONLINE. Or by calling our office at Phone: (717) 367-1566 or (800) 347-1566.





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Upcoming events

Our participation at the following upcoming events will depend on the health situation at the time of the event.

May 16th - 17th - 2020 Mother Earth News Fair, Nashville, TN <https://www.motherearth-newsfair.com/tennessee>

July 12th 2020 - 27th - Annual Horse Progress Days, Mt. Hope Auction, 8076 SR 241, Millersburg, OH 44654 Daniel Wengerd
Phone - 330-857-0383

July 17th - 18th 2020 Mother Earth News Fair Polyface Farm, 43 Pure Meadows Lane, Swoope, VA <https://www.motherearthnewsfair.com/polyface-farm>

July 29th - 31st 2020 - Empire Farm Days, 2973 NY-414, Seneca Falls, NY 13148 (877) 697-7837
<https://empirefarmdays.leetradeshows.com>

August 11th - 13th 2020 - Ag Progress Days, Russell E. Larson Agricultural Research Center 2710 W. Pine Grove Road, Pennsylvania Furnace, PA 16865 <https://agsci.psu.edu/apd>

New Dealers:

Diversified Ag Nutrition PO Box 9, Rose Bud, AR 72137, Phone: (501) 556-5226 Fax: (501) 556-5075, Billy@diversifiedagnutrition.com

Northeast Agricultural Sales Inc. PO Box 5, Lyndonville, VT 05851, Phone: (802) 626-3351 Fax: (802) 626-3450 Nate@NEAG.NET
website: www.neagsales.com

Marketplace

Pastured GMO-Free Chicken

Fresh or frozen, vacuum sealed and labeled
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Quarryville, Pa 17566

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If you are using Fertrell products and would like to advertise your Fertrell grown products. Please send the information to marketing@fertrell.com or call our main office at 717-367-1566. Keep the following deadlines in mind when submitting your ad.

May 15th for July - August 2020

July 15th for September - October 2020