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Notes & Quotes

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Soil Blocking Basics

By: Dean Painter

Soil blocking is a method of starting and transplanting seedlings that minimizes root system disturbance. Soil blocks are made by compressing soil into small cubes that are able to hold together without any sort of container. Seeds can be started in small blocks then easily inserted into progressively larger blocks until they are ready to go directly into the ground.

There are some distinct advantages of using soil blocking techniques, rather than planting in peat pots or using plastic packs and trays. The first advantage is reduced cost—you will not have to purchase peat pots and plastic planting trays in varying sizes every year. You also won't have to figure out how to store or dispose of them. The second advantage is the way that your plant's root system will develop—they will be better than if your seeds are planted in containers. When plants are grown in containers the roots reach the edge of the container and they begin to circle to continue growing and can become root bound. When grown in soil blocks the roots do not circle the edge, they are "air pruned" at the edge of the block. Air pruning simply means that the initial roots slightly dry out and stop outward growth, which spurs secondary root development. The overall result is a well-developed, full root system for your plant. The final advantage is that during transplanting the entire root system and soil block are immersed into the ground—which means the root system is not disturbed by trying to remove it from a container. This results in a seamless transition for the roots and facilitates uninterrupted plant growth.

Recently we have received multiple inquiries about how to use Fertrell's Premium Potting Soil for soil blocking. Our Premium Potting Soil blend is designed to aid in vigorous germination of seeds and it contains enough nutrients to grow your plants to a transplantable size, so it is a good choice for this purpose. Additionally, it contains aragonite, a coral and sea shell blend of available calcium, which encourages better utilization

of nutrients than typical rock lime. Another benefit is its excellent water retention ability. I have completed some experimentation and have concluded that Fertrell's Premium Potting Soil can successfully be used to make soil blocks for starting seeds, but some specialized tools are required. Soil block makers will need to be purchased in various sizes. The ones I used in my process included $\frac{3}{4}$ " mini block makers for starting seeds, 2" ones that can be used for starting or transplanting the $\frac{3}{4}$ " blocks, and 4" block makers for transplanting seedlings from the 2" blocks.



Soil blocking tools shown in $\frac{3}{4}$ ", 2" and 4" sizes.

To begin with, I emptied the Fertrell Premium Potting Soil into a mixing tub. This soil mix contains particulates of varying sizes. If you are starting seeds in $\frac{3}{4}$ " mini soil blocks you should begin by removing the largest of these particles, to allow for the best possible soil compaction. This could be done by screening the soil, but I just picked out the largest pieces by hand. Once this step is complete, add water to the soil. The soil should be damper than you may expect, about the consistency of a thick oatmeal.

Now you are ready to create the blocks. Start with soil piled twice as high as the block you are making, then push the block maker down into the soil, filling the mold. You need to apply steady pressure to compact the soil. Once the block is full, press it into the bottom of the tub and slide it back and forth to help pack the soil and scrape off the excess. On the $\frac{3}{4}$ "

blocks, you can actually flip the block maker over and use a thumb to press the soil in. You can also remove any large particles by hand. To remove the soil block from the mold, sit the block maker on the flat surface where you will locate the soil blocks. First press the handle down to firmly compact the block, then lift the block maker gently and you have created soil blocks. When they are first taken out of the mold, soil blocks are too delicate to pick up and move. Once a seedling is growing and the root system is developed soil blocks can be handled and moved.



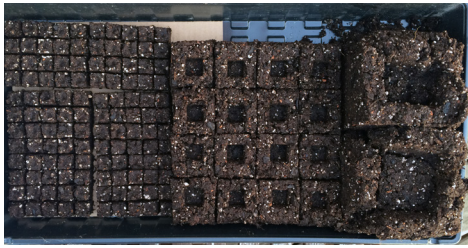
Firm pressure is needed to fully compact the soil into the block makers.



Press the handle while lifting the block maker to release the fully formed soil block.

In my experimentation with making soil blocks using Fertrell Premium Potting Soil, my $\frac{3}{4}$ " and 2" blocks turned out great. My 4" soil blocks did not hold their shape very well, you can see they are crumbling in the photo. I think that I over

moistened the batch of soil I used for that size block. When making your blocks, you should be prepared for some experimentation with the amount of water required to create blocks in each size.



Finished soil blocks in various sizes.

Fertrell's Premium Potting Soil will provide your seedlings with all the nutrients required to reach a transplantable size and is a convenient, cost effective material for making soil blocks to start seeds. If you try soil blocking this season, share your results and photos with me at dean@fertrell.com.

Aragonite vs. Limestone by Seth Epler

The Aragonite that Fertrell supplies to customers is essentially a mineral form of calcium that comes from the sea. Generally, it runs from 33%-39% readily available calcium. What this really means is that the calcium is immediately available, at a high percentage, and starts working with the soil right away. Therefore, Aragonite can be applied in fall or spring.

"Is aragonite better than limestone?"

The most common question I receive on Aragonite is, "Is it better than lime?" And my answer is not necessarily, but there are many reasons that Fertrell prefers it to lime. Don't get me wrong, lime has its place and can work just fine. But Aragonite has a lot of qualities that makes it stand above limestone, in the eyes of Fertrell.

Aragonite is readily available

As I stated above, the calcium in Aragonite is readily available at high levels. Compared to lime, which comes from stone and takes quite some time to break down and become available to the soil, Aragonite is working for your soils right off the bat. Also, Aragonite has a lot of live bacteria in it, which lime does not. This is an added benefit to building microbial life, along with the organic matter.

Aragonite as barn grit

Many of our customers also use the Aragonite as barn walk grit. Thus, adding calcium to the manure which adds to the fertility of the farm. I also have had customers say that their manure pit didn't have that bottom layer of sludge they always had in the past, after they used the Aragonite as grit. This was partly due to those live bacteria helping to break everything down.

Lower levels of Magnesium

Also, Aragonite has very low levels of magnesium. This is a huge benefit because many farming systems have been using applications of high magnesium lime for many years. This has brought the levels of magnesium

up above normal. And with these high levels of magnesium, the soils become tied up, which in turn, prevents the plants from taking up essential nutrients. In other words, these soils potentially have all the right nutrients but certain things are off balance just enough to stop the plant from getting what it needs. So, when your farm still needs a calcium source to help keep things going, Aragonite comes in and doesn't much increase those magnesium levels.

Doesn't affect your pH level

Another difference is that continuous lime use can also drive up the level of pH. And like with the magnesium, when the farm still needs calcium but cannot afford higher pH levels, the Aragonite works just fine. Lastly, even though Aragonite is a bit pricier, it calls for much lower application rates than lime. So, there are some good examples of why Fertrell likes Aragonite as a calcium source. Limestone has its place if you need to adjust the pH of your soil or are looking for a calcium amendment that doesn't provide immediate calcium, but in many instances, Aragonite will do more for a farmer than limestone.

Aragonite is available at Fertrell in as a dried product in 50 lb. and 2000 lb. totes.

For field application we also have the "raw/damp" Aragonite available at highly discounted pricing in direct shipment by full dump truck loads to your farm. (NOTE: this cannot be shipped during freezing temperatures!). Please call your local dealer / representative for current pricing!

Cash Order Discount	
January	2%
February	2%

Pneumonia Treatment Tips by Dr. Paul's Lab

With fall and winter's changeable weather, pneumonia season is here. Whether you are looking for a conventional pneumonia treatment program with vaccines or a more natural approach using homeopathic remedies, you have options for treating your herd.

The Conventional Method

The trick for pneumonia is to have some protection with a vaccination program. The modified live viruses have been shown to have a longer protection when given twice. Consider first shot at 3 to 4 months and second shot at pre-breeding, 14-15 months of age. Then go to a killed 10-way vaccine as the modified live can cause abortions. If vaccines are objectional, consider using nosodes (the homeopathy vaccination pills).

The Homeopathic Method

These are only available from a vet as they are prescription items. Dr. Paul's Lab cannot sell them, but I can and do handle many nosodes. Please contact me directly if you need nosodes. It has been found that you get a greater protection if animals are on aloe pellets a few days before vaccination and stay on 4 days after vaccinating.

Dr. Paul's Lab Products for Pneumonia

Treatment items for pneumonia are CEG, OLS-M tinctures, and Wild Herb Tea to clean out the lungs and sinuses. Aloe liquid and pellets to negate the cortisol and on bad cases (if they're off feed), IV glucose or dextrose can be given for energy. Also 30-60 cc's of natural whey helps boost immunity. Good ventilation, dry bedding, and water should also be provided.

Catching a few coughing calves early and feeding aloe pellets is a real help. Early treatment can quite often ward off full blown pneumonia. Clipping long haired heifers when you bring them into a warm barn is a must.



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Fertrell Beneficial Biology

Contains our top blend of beneficial soil-based microorganisms including multiple species of plant growth promoting rhizobacteria (PGPR) and other beneficial plant growth promoting microorganisms (PGPs). This specially formulated blend enhances and restores beneficial soil microbe populations to augment the natural organic processes that occur in healthy soils. Available in 50 lb bags.

SPE 120 - Soil Plant Enhancer

Contains Beauveria bassiana, a natural symbiotic fungus that grows with your plants. SPE-120 uses this natural fungus to defend roots stems and leaves, from pathogens and insects. Recommended use of 2 oz per acre dry or 1 oz per acre liquid. Available in 6 oz liquid or 8 oz dry.

Fertrell Mycorrhizae Plus

This blend of beneficial soil-based microorganisms plus mycorrhizal fungi colonizes, nourishes and aids plant roots and the surrounding rhizosphere. This provides improved crop health, greater drought tolerance and mineral availability (i.e. phosphorus, nitrogen, calcium, iron and more) and more robust soil food web. Available in 50 lb bags.



Liquid #3 2-3-1

10% off during February*



Use as a transplant solution or apply during stress periods of plant growth i.e. early growth, budding, pod formation, fruiting, prior to frost, and crops damaged by herbicides



Also use as a foliar spray or added to liquid fertigation systems. When foliar feeding, apply fine mist in early morning or late afternoon.

*Restrictions Apply

Fertrell Staff Listing

Our staff can be reached through the main office number 717-367-1566 / 800-347-1566. Extension numbers are listed below.

Receptionist

Nicole Benasutti – info@fertrell.com

Accounting: accounting@fertrell.com - This should be used for emailing orders and general accounts receivable questions

Beth Knaub ext 223 beth@fertrell.com

Holly Oberholtzer ext 256 Holly@fertrell.com

Accounts payable / Vendors

George Hoshauer ext 224 george@fertrell.com

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Dean Painter ext 231 dean@fertrell.com

Sage Dennis ext 259 sage@fertrell.com

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Data entry/ certification / product registration

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PA - Lancaster and surrounding counties:

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Seth Epler ext 222 seth@fertrell.com

PA- North West PA:

Jeff Pennay Jeffpennay@fertrell.com

717-275-4496

NY – Finger lakes area:

Jim Martens Jim@fertrell.com 315-719-2050

VA – Shanandoah Valley:

Rodney Martin Rodney@fertrell.com

540-705-7834



Liquid 3-4-3

10% off during February*



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

News From The Front:

Upcoming Events

To protect the health of our staff members. We are still limiting our participation at in-person events. Check out our social media for updates. Or you may call our office at 717-367-1566 or 800-347-1566.

Mid-Atlantic Fruit and Vegetable Convention

February 1st -3rd 2022, Hershey Lodge Hershey PA Info: 717-694-3596 or PVGA@pvga.org

Product Updates

Discontinued Products

Fertrell Catch It (formerly Kelp Conditioner)
Fertrell Cal Mag Booster
Fertrell Breeder Mix
Fertrell NY Base Mix
Fertrell Rumicult 40
Fertrell NY Dairy Base Mix
Fertrell Buffer Blend
Fertrell Invigorate
Fertrell Bone Char
Fresh Start
Milky Spore (powder and spreader mix) – currently few of the spreader mix available
Mineral Feeders

Product changes

Fertrell Super N , Super K , Blue N blend with Sodium Nitrate are no longer stock item, but considered custom blends (1 ton increments for ordering).
Fertrell Blue K Plus – also considered custom

Fertrell Turf Pro 5-0-5 will be manufactured with ALL organic ingredients!

Please contact our support staff in the agronomy and animal nutrition department should you have any questions regarding the alternate options for any of these products.

New dealers

Shady Grove Bio Ag - 17703 County Road 4057, Kemp, TX 75143 972-576-6365 sgf2001@pri-

vategarden.org replacement for Hickory Hollow

Lily of the Valley Landscaping - 2781 Lisbon Street, East Liverpool, OH 43920 330-932-0158 sales@lilyofthevalleylandscape.com

The Agronomy Center - 12039 William Penn Hwy, Thompsettown, PA 17094 717-535-5151 theagronomycenter@gmail.com or painter@agronomycenter.com

Oyler's Organic Farm - 400 Pleasant Valley Road, Biglerville, PA 17307 717-677-8411 (Jacob) oylersorganicfarms@gmail.com

Nittany Feeds - 1126 Beagle Road, Mill Hall, PA 17751 570-927-2720 Jonathan Fisher

Bluegrass Blueberries - 11067 Porter Pike, Oakland, KY 42159 270-529-0348 blueberry-nurseryky@gmail.com

Bagdad Roller Mills Inc - 5740 Elmsburg Rd., Bagdad, KY 40003 502-747-8968 brmnc@bellsouth.net

Quality Stored Feed by Alyssa Walsh

As winter approaches, the switch to stored feeds begins. During this change, feed quality needs to be considered to maintain the health and production of your livestock. Your animals are relying on you to provide quality feeds to help them stay healthy and continue to meet performance expectations.

To maximize feed quality, ensure your feed is stored away from direct sunlight and in cool temperatures, ideally below 77°F. We know this isn't always manageable. Stored feed already has a higher risk of being infected with molds and toxins, so if you are storing feed and can't keep it in a cool, dry place, you need to get your grains tested. Especially with all the rain we have received this past year. Fungal growth, mycotoxins and nutrient destruction can be caused by pockets of moisture as low as 16%, when temperatures are right. Testing for molds and toxins and acting as needed (with Redmond Conditioner) will help prevent a decrease in feed conversion. Levels of just 2ppm of mycotoxins in grains can result in a 10% or greater decrease in feed efficiency.

Also, certain nutrients in stored feeds can deplete over time. Vitamins A, D, and E, along with the B vitamins are less stable and deplete in stored feeds. Additionally, your livestock won't be getting the added benefit of the vitamins and minerals that are found in pasture. Because of that, it's important to adjust the vitamin and mineral premix to meet the animal's needs. For example, switching from Grazier's Choice to Cattle Choice to balance the loss of vitamins and minerals that cattle were getting from pasture in the grazing season. This will help ensure your animal is getting the micronutrients needed to stay healthy and continue to perform during the winter months.

Additional items of concern:

- Oxidation of nutrients will destroy unsaturated fats, essential fatty acids, Vitamins A, C, D, biotin, and lysine. This will cause an off flavor and a loss of activity of fatty acids and

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Dairy Nutri-Balancers

***10% OFF during January**

Our line of Dairy Nutri-Balancers includes 3 dairy premixes. Each is blended with precise ratios of calcium and phosphorus to balance rations with all types of forages. They contain vitamins and minerals your herd needs for both health and performance.

Dairy Nutri-Balancer # 1 is designed for diets consisting of mostly legumes or high calcium forages.

Dairy Nutri-Balancer # 2 is designed for diets consisting of mostly legumes in combination with some corn silage.

Dairy Nutri-Balancer # 3 is designed for diets consisting of mostly corn silage in combination with some legumes.

*Custom minerals are not included

vitamins.

- Light will degrade riboflavin, which is essential for many processes including normal cell growth and function.
- Insect and rodent damage. Having a safe, effective rodent control program will help decrease your risk of fecal contamination in stored feeds.
- Grinding, flaking, and crimping of grains releases oil from the germ, which will oxidize within days or weeks after processing, decreasing palatability and nutrient content.

Spotted Lantern Fly Testing by Sage Dennis

The Spotted Lantern Fly (SLF) has continued to expand its range much to the misfortune of some farmers. Over the past few years various institutions such as Penn State, Rutgers, and many others have conducted studies about what works the best at controlling SLF. There are many proven conventional means of controlling SLF such as dinotefuran, imidacloprid, carbaryl, and bifenthrin. But it got me thinking what controls do we have organically? I don't want to spray the grapevines that I pick and eat from with a few of these chemicals and there has to be some products that are effective that we can use while maintaining our organic integrity.

So, I grabbed a handful of products and decided to test various organic pesticides as well as a few home remedies that I have heard over the last several months. In total I ended up using 9 products but was only able to reliably test 6 due to the weather changing and not being able to find a respectable sample size. The products I used were the following: 200 Grain Distilled White Vinegar, Orange Guard, Redmond Salt, Redmond Garlic Salt, Pure Spray Green, Diatomaceous Earth (DE), Pyganic, Fertrell Fly Aside, Venerate, and Grandevo.

Before I tell you about what product works best, let me tell you about how I conducted this experiment. First, I attempted to test at least one product on thirty-two different samples. If I

could not locate that many insects to test on, I did not consider it a legitimate testing pool and voided out that product. This is why I will not speak too much on the Grandevo, Venerate, and Pure Spray Green as I was not able to meet the criteria I set up. To apply the product, I would capture the SLF and bring it into a sanitized testing area that was cleaned between each use. In this area a bug cage was used that had spacious wire siding to allow proper coverage of both liquid and dry products. After I coated each sample, I would remove it and put it into its own container, in this case it was a mason jar that allowed airflow.

Out of the tested products, the results looked as follows. The least effective products were the Diatomaceous Earth, Redmond Salt, and Garlic Salt Sprays. I used a rate of 2 oz/Gal of salt/water ratio and this had little to no effect. The amount of SLF that died with these applications was only 6 out of 32. Rare enough that I could not confirm the salt spray was the cause for the SLF to expire. The Garlic Salt was the about the same, controlling 8 out of 32 SLF sprayed. The DE had no effect whatsoever. Not a single SLF died due to DE application. The Distilled White Vinegar controlled the SLF more often

than not 22/32 could not withstand the Vinegar applications. What it mostly came down to was a direct application. If I was able to spray the product in a concentrated stream it was far more effective than a light misting. Lastly, was the Pyganic and Fertrell Fly Aside. Both of these products were very effective in controlling the SLF which is understandable due to Pyganic being a contact killer and Fly Aside using the same active ingredient that Pyganic has. Both of these products killed at least 30 out of the 32 samples of SLF.

In conclusion, the most effective tested product was Pyganic but it was not the most economical. The winner for that was the 200 Grain Distilled White Vinegar which is what I will be recommending to those that are looking for their own small-scale control. The largest concern is that the Vinegar will cause damage to plant tissue as it is traditionally used as more of an herbicide than an insecticide. I was happy with the results that I obtained but, in my eyes, this is only the first part of a larger experiment which we hope to continue next year! Together we can work as a collective and help slow the spread of a potentially devastating pest.



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CEG Tincture - cayenne, echinacea, and garlic. available in 2, 8, and 32 oz.



OLS-M - organic grain alcohol, oregano, lobelia, slippery elm, mullein and organic apple cider vinegar, available in 2, 8, and 32 oz.

