



Experience the Power of Healthy Soil

SoilSoup Brewer Manual

6.5 Gallon & 25 Gallon Home Brewing Kits

Congratulations on your decision to purchase a SoilSoup Home Brewing System. Please take a few minutes to review the manual before you brew the first batch of SoilSoup

Contents:

Important Notes	page 2
The BioBlender	page 3
The 6.5 Gallon System	page 6
The 25 Gallon System	page 9
The Brewing Cycle	page 11
Application	page 12
Care and Maintenance	page 14
Frequently Asked Questions	page 15
The Bottom Line	page 18

A few very important points before you proceed with the first batch of SoilSoup

1. After filling up your pail or tub with water, always remember to run the BioBlender for 1 hour in the water without any nutrient or compost mixed in. During this first step of the brewing process, you “deplete” the added chlorine in the municipal water supply.
2. Always clean the BioBlender after each batch. Please follow the cleaning instructions. The BioBlender is not designed to be used continuously without being cleaned between each batch. It is recommended that the bottom 1/3 portion of the BioBlender should be kept in clean water with a few drops of dish detergent when not in use.
3. Only brew a “full batch” of SoilSoup. The BioBlender is not designed to brew a “half batch” since the water level in the brewing container will not be high enough for the BioBlender to function properly.
4. Store the nutrient solution in a cool shaded place. Do not expose the nutrient container to direct sunlight, especially during the summer months.

The BioBlender

The BioBlender is designed to infuse and saturate the “soup” with oxygen. The compact design, without any hose attachments, and its ability to produce very fine air bubbles are the key benefits of the BioBlender.

Remember to keep it clean between batches, and it will last for a long time.



Before you brew the first batch, it is recommended that you take the BioBlender apart and familiarize yourself with the moving parts inside before they are covered with “bioslime”. (The bioslime is the by-product from brewing a healthy and energetic batch of SoilSoup) It is full of beneficial microbes!



Remove the rubber closure ring



Lift in the front and remove the slotted cover



Gently lift the black plastic aeration pump and pull the shaft away from the motor coupling.



Pull gently on the shaft to separate the dome connector from the aeration pump.

Please note the male cross section inside the dome connector and the mating female cross section on the aeration pump.

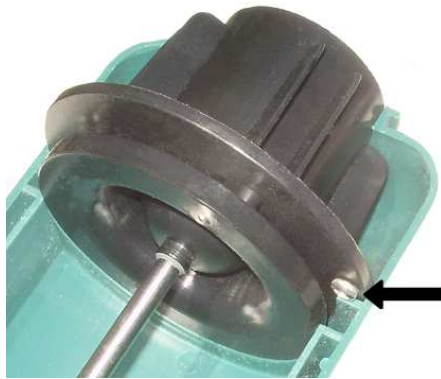
To reassemble the BioBlender:



Attach the shaft back onto the aeration pump. Make sure you line up the “cross section” on the dome connector with the cross section on the pump. The dome connector will fit snugly when mated with the pump connector.



Fit the black rectangular shaft connector to the motor drive (a round stainless steel part) and drop the aeration pump portion into place at the bottom of the housing. If all the parts are assembled correctly, the aeration pump should “slide” right into its place in the housing, lining up with the bottom of the housing.



If your Bioblender has a stainless steel “stop screw” attached to the pump, position the pump as shown in the picture. The screw will prevent the pump from rotating inside the housing.



Fit the slotted cover back on and “snap” it in place.



Put the rubber closure ring back on.

The 6.5 Gallon System



The 6.5 Gallon Home Brewing kit includes:

One BioBlender
One 6.5 Gallon container
1/2 Gallon of Nutrient Solution
5 Lbs. of Worm Compost
One re-usable filter bag
Brewer Manual

The 6.5 Gallon kit includes nutrient solution and worm compost for 10 batches. (65 Gallon)

Brewing Instructions

Find a location that is close to a water outlet, a GFI electrical outlet and has a durable, easy to clean floor. Please note that the "bioslime foam" can spill over the side of the container during the brew cycle. The bioslime foam is proof that you are brewing a potent and energetic batch of SoilSoup. Also, the warmer, the better. (up to 100 degrees F)

Please locate the brewer away from any type of "moist" "wet" environment. The motor housing at the top of the BioBlender must be kept dry at all times.



Hang the BioBlender over the side and adjust the rubber clamps.

Fill up the 6.5 Gallon pail with clean water within 2-3 inches from the top.

Turn the BioBlender on by plugging the power cord into a 110 volt outlet or extension cord.

LET THE BIOBLENDER RUN FOR A MINIMUM OF 1 HOUR TO FULLY DE-CHLORINATE THE WATER.



After running the BioBlender for 1 hour, fill the filter bag with 1.5 cup of worm compost. Tie the filter bag string to the handle opposite the BioBlender, and submerge the filter bag in the de-chlorinated water.



Add 6 oz. of nutrient solution.

Never run the BioBlender if the water level is not covering at least 6 inches of the BioBlender.



Now we wait 24 - 48 hours, depending on the ambient temperature. Normal brewing time at 70 degrees F is 24 - 36 hours. If the ambient temperature is below 70 degrees F, it normally takes longer than 36 hours to brew a batch of SoilSoup.

Fully brewed SoilSoup will have a pleasant "earthy" smell to it, with a brownish foam on top. Prior to being fully brewed, it will have a slightly sweet odor from the nutrient solution not yet being fully consumed by the growing microbial population.

The brewing process starts when the worm compost and the nutrient solution are added to the water. During this first 12 hour period the microbes start waking up and begin to feed on the nutrient solution.

During the next 12 -36 hours the microbial population multiplies at a very high rate. By the end of the brewing cycle, you will have a very high concentration of active microorganisms that are ready to start feeding the soil food web and digesting organic matter in your soil. Fully brewed SoilSoup will have a very pleasant "earthy" smell that is concentrated with as many as one billion microbes per teaspoon.

In addition, the population of beneficial microbes in SoilSoup become metabolically active during the brew cycle, which means that they are "awake". They are not in a dormant state like in any shelf product. They are awake and will start their life in the soil food web as soon as they are dispensed onto your soil.

A thin layer of SoilSoup from a watering can is equivalent to covering the entire treatment area with a high quality compost, 2-3" thick!

The 25 Gallon System



The 25 Gallon Home Brewing kit includes:

One BioBlender
One 25 Gallon container with lid and spigot
1 Gallon of Nutrient Solution
10 Lbs. of Worm Compost
One re-usable filter bag
Brewer Manual

The 25 Gallon kit includes nutrient solution and worm compost for 5 batches. (125 Gallon)

Brewing Instructions

Find a location that is close to a water outlet, a GFI electrical outlet and has a durable, easy to clean floor. Please note that the "bioslime foam" can spill over the side of the container during the brew cycle. The bioslime foam is proof that you are brewing a potent and energetic batch of SoilSoup. Also, the warmer, the better. (up to 100 degrees F)

Please locate the brewer away from any type of "moist" "wet" environment. The motor housing at the top of the BioBlender must be kept dry at all times.



Insert the BioBlender into the single hole on the right side of the tub. (the other side has 3 holes) Adjust the rubber clamps.

Fill up the 25 Gallon tub with clean water within 2 inches from the top. Turn the BioBlender on by plugging the power cord into a 110 volt outlet or extension cord.

LET THE BIOBLENDER RUN FOR A MINIMUM OF 1 HOUR TO FULLY DE-CHLORINATE THE WATER.



Insert the filter bag through the center hole opposite the BioBlender and push it all the way down until the top ring fits in the hole.

Fill the filter bag with 3 cups of worm compost.



Add 3 cups (24 oz.) of nutrient solution.

Never run the BioBlender if the water level is not covering at least 6 inches above the bottom of the BioBlender.

Now we wait 24 - 48 hours, depending on the ambient temperature. Normal brewing time at 70 degrees F is 24 - 36 hours. If the ambient temperature is below 70 degrees F, it normally takes longer than 36 hours to brew a batch of SoilSoup.

Fully brewed SoilSoup will have a pleasant "earthy" smell to it, with a brownish foam on top. Prior to being fully brewed, it will have a slightly sweet odor from the nutrient solution not yet being fully consumed by the growing microbial population.

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The Brewing Cycle

The normal brewing cycle is 24 - 36 hours if the ambient temperature is around 70 - 75 degrees F. For every 10 degree drop in ambient temperature, the brewing cycle normally increases by approx. 12 hours. It normally does not take more than 48 hours to brew a batch of SoilSoup.

The batch of SoilSoup is ready when:

1. There is a ring of “bio-slime” around the inside of the container
2. There is brownish foam on top of the soup
3. There is an “earthy” aroma from the soup

If there still is a slight sweet smell from the soup after 36-48 hours you can keep the bioblender running until the sweet smell is gone. (Usually 3-6 hours) However, it is still OK to use fully brewed SoilSoup with a slight sweet smell. The sweet smell comes from the nutrient solution that is still not fully consumed by the microbes and will only act as additional food for the microbes in the soil.

Fully brewed SoilSoup contains billions of beneficial microorganisms in just a teaspoon. After being brewed in an oxygen rich environment, they are awake and metabolically active.

Please note that after you stop running the BioBlender, you must use the fully brewed Soup within 12 - 18 hours.

If the brew sits too long without oxygen, the microbial population will start to decrease. You can keep the brew “fresh” for a few days after the initial brew period by running the bioblender continuously and adding a few ounces of nutrient solution to the soup.

If you are a weekend gardener

Start brewing SoilSoup on Thursday afternoon/evening. By Saturday morning you normally have fully brewed SoilSoup. If you are unable to use the soup on Saturday, keep the BioBlender running and add a few ounces of nutrient solution on Saturday evening. The SoilSoup will be ready for use anytime on Sunday. Remember that you must use all of soup in the container at one time. The BioBlender is only designed to function properly when the brewing container is filled to the top.

Application

The most important rule is: USE IT FRESH!

There is no danger of applying too much SoilSoup on a single plant, unless you “over water” the plant in the process. However, a thin coat of SoilSoup twice a week is much better than a heavy drench every 2 months!

Apply SoilSoup either as a soil drench or spray it directly onto the foliage. For more application details, see the enclosed application guide. (a copy of the application guide is also available at www.greenorganics.biz)

Apply to soil that is damp or wet.

Since the microbes are brewed in a liquid environment they will benefit from being applied to a similar environment. Apply after watering or when the soil is naturally wet from rain or dew. Apply in the morning or afternoon when the UV light is low.

Always use a clean applicator.

Make sure your watering can or sprayer is clean from any pesticides or herbicides. Even a small amount of a chemical product may damage or destroy the microbial population in SoilSoup.

Application frequency and benefits.

If you recently switched over to “organic gardening” from using a chemical fertilizer, or you have infertile soil or soil heavy in clays, apply SoilSoup at least every two weeks until you will see a noticeable improvement. As the soil structure improves, it will become “looser” and more granular in texture. The soil color will become darker and the water retention will increase. After a season of treating your garden and lawn with SoilSoup, you can cut back on watering by approx. 1/3.

If you use a hose-end sprayer for treating your lawn, the solution will be quite diluted. If so, apply at least once a week until you begin to notice improved vigor and color in the grass. You will also notice a reduction in thatch and an increase in water retention. After a season of SoilSoup, approx. 1/3 less water will be needed to keep the lawn green and healthy.

SoilSoup as a Foliar Spray.

When spraying SoilSoup directly onto foliage it is important to begin such treatment early in the growing season before any pathogens have established themselves. For maximum benefit, spray once a week directly onto the foliage with full strength SoilSoup. Make sure to cover the foliage on both sides. If the disease pressure is high, increase the frequency to twice a week.

The preferred sprayer to use can spray in any direction, including upwards. As mentioned above, it is important to cover the leaves on both sides with fresh SoilSoup.

Flower beds.

The easiest and quickest way to treat your flower beds is with a watering can. It is not recommended to saturate the soil with SoilSoup. Instead, just apply a thin coat to cover the soil surface. One gallon of Soilsoup will cover up to 100 - 200 square feet. If you use a “pressure sprayer” that puts out a fine mist, you may cover as much as 500 square feet with a single gallon of SoilSoup.

Lawns.

For smaller lawns, use a watering can or pressure sprayer. For larger lawns, use a hose end applicator that mixes SoilSoup with the water and sprays the mix from the nozzle.

Plant rescue.

If your mission is to save or help a seriously ailing plant, bush or tree, SoilSoup is your best chance for success. In this case a heavy dose of SoilSoup is recommended. 3- 4 gallons of undiluted SoilSoup might be necessary. Prepare the soil so the SoilSoup treatment will reach as far deep as possible towards the root system. You do not want to “turn” the soil. Instead, somehow “drill” holes 12-24” deep around the ailing plant so the beneficial microbes will reach deep down in the soil towards the root system of the ailing plant. Depending on the seriousness of the situation, more than one treatment might be necessary.

We have received numerous positive testimonials from gardeners that were ready to give up on sick plants or trees. In almost all cases, the sick plant or tree was saved with a few gallons of SoilSoup!

It's not magic, it's just the power of healthy soil!

Care & Maintenance

IMPORTANT!

CLEAN THE BIOBLENDER, FILTER BAG AND CONTAINER AFTER EACH USE!

- 1. Clean all SoilSoup brewing equipment after each use. The bio-slime will easily wash off after each use while it's still moist. It is much harder and time consuming to clean up the bioslime if allowed to dry!**
 - 2. Empty the contents of the filter bag into your garden or compost bin. Rinse and dry the filter bag. The holes in the filter bag must be kept free from debris and mildew for future batches of SoilSoup.**
 - 3. Please visit page 4 and follow the instructions of how to disassemble the BioBlender.**
 - 4. Rinse all the “lower” Bioblender parts with clean water. However, do not “spray” or “wash” the motor housing at the top.**
 - 5. In between batches, store the black aeration “pump” in a container with water and a few drops of dishwashing detergent.**
 - 6. Please visit page 5 and follow the instructions of how to re-assemble the BioBlender**
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Frequently Asked Questions

What is the difference between Compost and SoilSoup?

Compost is solid bulk material from: Leaves, grass clipping's, manure, food waste, etc. that has been broken down by micro-organisms. The result is a material that looks like "rich healthy soil" full of beneficial microbes and nutrients. In general, incorporating compost into soil is the most important step when improving soil structure. Soil with adequate compost mixed in will have better water absorption, retention and drainage, improved soil structure, a steady supply of plant nutrients and a more balanced soil pH.

Soilsoup is made from certified organic worm castings and compost.

The main difference between SoilSoup and solid compost is twofold:

1. The total quantity of aerobic bacteria. During the "brewing" process of SoilSoup we increase the total number of microorganisms by 10,000 - 25,000 times compared to our inoculant. "A huge increase in microbial population".
2. The microbes in SoilSoup become "metabolically active" during the brewing process. The microbes go from a "dormant" state to a "metabolically active" state, ready to start digesting organic nutrients.

So, the benefit from SoilSoup is similar to using compost, but with considerably more rapid and substantial results. SoilSoup is also in a liquid form which makes it very easy to use. To cover your garden with SoilSoup will take 10-15 minutes compared to hours it would take to raking out a 2-3" thick layer of compost covering your entire garden.

What is the NPK rating for SoilSoup?

It is not possible to rate SoilSoup in terms of NPK. The traditional NPK rating system describes the concentration and solubility of a synthetic chemical fertilizer. Synthetic nutrients are readily available to the plant roots for absorption. However, they do not retain in the soil very long. The demand for nutrients varies throughout a plant's growing cycle. Sunlight, heat, water and oxygen will affect a plants immediate need for nutrients. When soil microbes are present in the soil, they seek out the organic nutrients and convert them for the plants. However, organic nutrients retain in the soil, readily available for the plants when needed. So, the more soil microbes present in the soil, the more available nutrients for the plants!

How long do the Microbes live in the soil?

They can live for hours, days and months. It depends on the particular microbe in question. Some microbes are food for other microbes, while others compete for food and space with pathogens. The key is the wide diversity of microbes in SoilSoup. With a wide diversity of microbes, some will adhere to foliage and some will penetrate deep down towards the root zone. All providing their specific function in the “soil web”. In a handful of healthy soil there could be over 100,000 different species of microorganisms.

When do I use SoilSoup?

If your soil is showing signs of nutrient deficiency due to years of chemical fertilizers and pesticides, your plants will welcome SoilSoup with open arms. The microbes in SoilSoup will not only treat a specific nutrient deficiency, they will make sure a full spectrum of nutrients become available to the plants. It is impressive to read all the testimonials we have received from gardeners being successful in “resurrecting” or “saving” a sick plant or tree by using SoilSoup.

Foliar disease. Some of the foliar diseases that SoilSoup has proven to be effective against are: black spot, white powdery mildew and camellia blight. To treat or prevent a foliar disease SoilSoup needs to be sprayed directly onto the foliage, covering both the top and bottom of the leaf. After applying SoilSoup to an affected leaf, the beneficial microbes start to compete with the pathogen for nutrients and space. They consume the nutrients on the leaf surface, taking away the food source for the pathogen. However, they will not hurt the plant!

Compacted soil and water retention. After treating the soil with SoilSoup, the beneficial microbes will penetrate as deep as oxygen is available in the soil. In compacted or clay soil, they will initially not survive far from the surface. However, as SoilSoup is being absorbed into the soil, the microbes start to “create” space around themselves. After each treatment, the microbes continue to “break up” the compacted soil and penetrate deeper and deeper. After a season of using SoilSoup, you will be amazed how far you will be able to push your garden shovel into the soil with ease.

In addition, the microbes produce a mucus like substance called glomalin. Glomalin, a fungal protein, binds soil particles together which allows the soil to retain more moisture rather than letting it run off into the ground water. Some studies suggest that “tillage” tends to lower glomalin levels. It’s been found that soil from no-till corn plots had more glomalin and higher aggregate stability than soil from tilled plots.

Lawn and turf. Many lawns are laid on top of sand, with little or no organic matter under them. After a few years, these lawns fall into decline, unless they are boosted regularly with a chemical fertilizer. Instead of using chemicals every 4-6 weeks, consider SoilSoup 4-6 times a year. SoilSoup will start decomposing the thatch in the lawn, breaking it down into plant nutrients. The soil microbes will “aerate” the lawn naturally, increasing the water retention and keeping the water bill down.

Is it possible to use too much SoilSoup?

No! The inoculant we use to “brew” SoilSoup is 100% Organic Worm Castings and Compost. In other words, the best, most refined compost material available. In the brewing process we stimulate the aerobic bacteria from the worm castings and multiply them. However, we do recommend that you apply a relatively thin layer of SoilSoup. It is not necessary to “soak” a plant in SoilSoup.

Is it recommended to use full strength, or can you dilute it?

The recommended dilution ratio is normally anywhere from "full strength" to 33% SoilSoup. (Dilute with water and use right away) The main question is: Are you re-building soil structure from using chemical fertilizers, or are you maintaining an organically grown garden. If you are re-building, use a higher concentration more frequently. Probably twice a month, with 50% to 100% concentration. If you are “maintaining” your garden, you can dilute up to: 2-3 parts water - 1 part SoilSoup, and still see good results. Remember, the healthier the soil, the healthier the plants will be!

How long does it take to “brew” SoilSoup?

The standard “brew time” for aerobic compost teas is normally 24-36 hours. The brew time is very temperature sensitive. The cooler the liquid, the longer it will take to reach a fully brewed solution. We believe that a slightly longer brew time will enhance the final microbial concentration. So, 36 - 48 hours might be closer to the optimum brew time.

IMPORTANT!

When storing your aeration pump in between batches, first rinse it off with clean water. Then place it in a container with clean water and a few drops of dish detergent. This will keep any “bioslime” residue from drying inside the aeration pump.

Never start up the BioBlender if the aeration pump was never cleaned from the previous batch.

The Bottom Line

SoilSoup will out-perform any chemical fertilizers over time, increasing both plant size and yield. In addition, plants grown in soil treated with SoilSoup are healthier due to the symbiotic relationship between the plant and the microbes around the root zone.

The microbes in SoilSoup also feed other organisms in the soil food web: Protozoa and nematodes feed directly on bacteria, while worms ingest bacteria laden soil particles. All life in the soil depends on microbes, directly or indirectly.

SoilSoup can remediate soil that has been damaged by agricultural chemicals, including chemical fertilizers. With repeated application, the microbes will adapt to the soil, convert and metabolize organic and non-organic chemicals.

Adding SoilSoup in potting soil will suppress airborne pathogenic fungi that can infect a sterile potting medium. The microorganisms in SoilSoup also produce hormones, vitamins, nutrients, enzymes, amino acids and minerals needed by seedling cuttings and young plants. Treat the soil with SoilSoup 1-2 weeks before planting.

Fruits and vegetables grown in soil treated with SoilSoup have a higher nutritional value than fruits and vegetables grown in soil treated with a chemical fertilizer. The nutrient value of these plants is increased due to the availability of minerals, vitamins, enzymes and amino acids.

SoilSoup will treat lawns affected with thatch, which is a condition caused by sterile soil. Garden chemicals is the main cause of soil sterility. SoilSoup repopulates the soil with beneficial soil microbes which break down the thatch turning it into food for the grass.

SoilSoup applied to the soil greatly improves water retention. Many of the microbes manufacture a protective mucus (glomalin) which acts as a glue that bind soil particles together. The water retention of healthy soil can be 3-4 times greater than unhealthy soil. Approx. 33% less watering is needed for soil treated with SoilSoup.

SoilSoup applied along with insoluble granulated or powdered minerals such as granite, limestone, rock phosphate, etc will supply 95% of everything the soil needs. The other 5% is various organic materials.

SoilSoup applied to a compost pile will accelerate the breakdown of plant material reducing the amount of time it takes to make compost.

SoilSoup applied as a foliar spray will act both as a fertilizer as well as an organic fungicide. Foliar treatment will produce more foliage and larger stems. It is a good treatment for plants that are stressed. SoilSoup has also proven to be effective against mildew on the foliage. When SoilSoup is sprayed directly onto the foliage, the metabolically active microbes will out compete the pathogens for space and available nutrients on the surface of the leaf.

In general, there is a constant battle for available nutrients both in the soil and on the foliage. The larger the concentration of beneficial soil microbes, the less space and available nutrients for the pathogens. It is rare that a pathogenic fungi will invade and “take over” a plant growing in a healthy environment. In a healthy garden, beneficial soil microbes and fungi take up all the available space, preventing the pathogens to establish themselves and start threatening the plants.



SoilSoup,

Healing the Planet One Garden at a Time!