50 Easy and Free Fertilizers to Power Up your Garden

A Reference and Recipe Guide

By Marjory Wildcraft

growtwork™

Home gardeners spend millions each year on fertilizer for their gardens and houseplants. WOW! While many scientists agree that chemical fertilizers are harming the environment, organic fertilizers are draining our wallets. The good news is that you can easily make your own fertilizers from organic waste material and other things that you have around the house.

3 Reasons You Need Fertilizer

Your plants need fertilizer because:

1. Most soil does not provide the essential nutrients that are required for the best plant growth and production.
2. Even if you are super lucky to have rich loamy soil that all of us crave, as your plants grow they absorb those nutrients and leave the soil less fertile.
3. All of those beautiful flowers, fruits, and veggies that you grew last year took the nutrients that were in the soil. This year, your garden needs another boost of nutrients for this year's plants.

Why It's Important To Know Your Soil

While it's important to fertilize your plants and the soil, it's also important to know what your soil needs. That's where a soil test comes in. Get one from your local county extension office. When you send in your sample, you'll get the report. It tells you what your soil has in abundance and what you really need to add for best plant growth.

Also, soils vary in their ability to hold nutrients and make them available to plants. Sandy soils do not hold nutrients well, clay soils do. However, clay soils do not like to give up the water they hold, so it is more difficult for plants to take up the nutrients that are available.

Which Do I Need, Soil Amendments Or Fertilizers?

Soil amendments are mixed with soil to improve the physical properties or increase microbial action. It makes a plant's roots happy and healthy. Amendments improve the soil's water retention, permeability, drainage, air holding capacity, and structure.

Fertilizers are soil amendments that are applied to promote plant growth not change the soils characteristics.

The short answer is you need both.

Okay, so what's the difference?

Soil Amendments are added to…well…the soil! You can add them before, during, or after planting. However, the nutrients are not readily available for the plants to take up. Microorganisms in the soil need to break them down further so the plants can use the nutrients in the amendment. Fertilizers are pretty close to being available for the plants to get their nutrients pretty quickly. Think of soil amendments like eating your favorite veggie. The nutrients in that veggie aren't readily available for your body to use right away. Your body has to digest it for the nutrients to be available for your body to use.

Organic vs. Inorganic Manufactured Fertilizer

Organic fertilizer comes from the remains of or are because of different types of organisms. Microorganisms found in the soil breakdown the organic material, making its nutrients readily available to the plants.

Inorganic fertilizers completely or partially contain man-made materials. Manufacturers combine these in different ways and amounts to get a super-growth fertilizer that may or may not be organic. Many inorganic fertilizers are manufactured using fossil fuels, too.

TIP: Over use of inorganic fertilizers or adding a fertilizer that your soil or plants don't need can lead to a buildup of salts and other minerals in the soil causing damage to your plants. It can also be a waste of money. More is not better when it comes to any kind of fertilizer!

Organic Fertilizers

Organic fertilizers release nutrients slowly and decrease the risk of over-fertilization. The slow release of nutrients also means they are available for a longer period of time. Many organic fertilizers improve your soil, by increasing your soil's ability to hold water and nutrients. Many will help decrease erosion and hard, packed soil due to wind and rain. Organic fertilizer adds natural nutrients, feeds important microbes, and improves the soil structure.

On the downside, organic fertilizers are released slowly so your plants will be nutrient deficient until the decomposing process is completed. Some organic fertilizers contain lower percentages of the three key nutrients: **Nitrogen**, **Phosphorus**, and **Potassium (N-P-K)**. Timing is everything with any fertilizer. The best time is to add them when your soil is waiting to be planted.

TIP: There are fast-acting organic fertilizers. Bat guano, fish meal, and worm casting all have nutrients readily available.

Types Of Organic Fertilizers

Dry

Dry fertilizers are mixed into the soil. They work well for both in-ground gardens and container gardening. These types of fertilizer are added to encourage long-term growth in seedlings, transplants, and crops. An example of a Dry fertilizer is straw or pine needles.

Liquid

Liquid fertilizers are just what they sound like…nutrients in liquid form. There might be a binding agent to help them to be absorbed by your plants. These fertilizers might be poured onto the soil surrounding the plant so the roots can take them up. Or they could be sprayed on the leaves. Foliar (leaf) sprays are great for some vegetables during the growing season. Liquid fertilizers are great for growing plants that need a boost in leaf growth or flowering and fruiting. An example of a liquid fertilizer is comfrey or manure tea.

What is N-P-K, and why should you care? Learn more with this free guide.

Fertilize With Other Companion Plants

Using this permaculture technique, you can fertilize your soil and plants with companion planting. A perfect example of this is the Three Sisters Planting of the southwest Indigenous cultures. In case you missed it, read more about it here.

You've probably already read about 15 of the best fertilizers here.

1. **Aquarium Water**
2. **Bananas**
3. **Blackstrap Molasses**
4. **Coffee Grounds**
5. **Cooking Water**
6. **Corn Gluten Meal**

7. **Egg Shells**
8. **Epsom Salts**
9. **Gelatin**
10. **Wood Ash** *(Note: Be careful of wood ash if you already have alkaline soil. It can sweeten the soil, meaning it raises the pH. It also adds salts.)*
11. **Green Tea**
12. **Hair** (human or pet)
13. **Horse Feed**
14. **Matches**
15. **Powdered Milk**

Here are 35 more great fertilizers to consider:

1. **Worm castings**
   Worm castings are soil superfood! They provide nitrogen and make soil absorbent. They also introduce a huge number of beneficial microbes and bacteria to the soil.
2. **Beer**
   The jury is out on this one. Many tests have shown that beer doesn't add anything, but some people swear by it. Beer is a simple sugar and plants need complex sugars. Scientifically speaking, it probably doesn't work. However, it does work to get rid of slugs and is a great cool down on a hot gardening day! Also, if you brew your own beer or live near a microbrewery, you might want to use "Beer Mash" (the grains leftover from making beer). It's a great soil amendment.
3. **Ammonia**
   Ammonia naturally occurs in the soil. There are microbes in the soil that pull nitrogen from the air and put it into the soil in the form of ammonia. The amount is what is important here. Use 1 or 2 ounces per gallon of water mixed with molasses. Microbes love this stuff. If you're uncomfortable using man-made ammonia, you can always slide down the list and use urine instead.
4. **Liquid Dish Soap**
   This is another one that is up for debate. There are a lot of studies that show that dish detergent (made with a lot of chemicals) is harmful to plants. However, there are some organic dish soaps that will help your "supertonic" to penetrate the soil. You only need a couple of drops in 32 oz. of water to get the job done. Remember, more is not better!
5. **Dog and Cat Food**
   Make sure that it is an organic pet food. Sprinkle the dry pet food on the bed or container. Turn the soil or water it in. It provides protein to feed the fungi and bacteria, nitrogen, phosphorus, potassium, and calcium, plus other minerals. To discourage vertebrae pests, be sure to cover this fertilizer with cardboard.
6. **Tea**
   Tea and tea bags are excellent for your garden. As the bag and tea decompose, they

release nitrogen. First, make sure your tea bag is compostable. You don't want the ones made of polypropylene. If the bag is slippery, don't use it in the garden. Tea also makes a great brew for acid-loving plants like azaleas and blueberries. Tea also helps deter some root maggots.

7. **Bone Meal**
   Alright so this is a stretch for just having some lying around the house. However, bone meal is a really good source of phosphorus and protein. It is coarsely ground animal bones and waste products. Make sure you need phosphorus in your soil before adding it. A soil test is your best friend in the garden. However, if you want to make your own bone meal, here's what you do: 1. Collect bones by storing them in the freezer. 2. Clean them by making a bone broth. 3. Once they are clean, sterilize them. Place them on a baking sheet under the broiler for 10-15 minutes. 4. Dry the bones by placing the cooking sheet on the counter for about three to four weeks. They need to be completely dry. 5. Crush them into a fine powder with a food processor. If you use a mortar and pestle, be sure to wear a mask over your nose and mouth. 6. It is now ready to use.
8. **Antacid Tablets**
   If your soil is low in calcium, this should be a go-to. It helps prevent blossom end rot in your tomatoes, peppers, and eggplants. Push one tablet into the soil by the plant's roots. Voila! Instant calcium boost.
9. **Coconut Coir**
   Coconut coir has become the replacement for the non-renewable Peat Moss. This soil amendment adds air and space to assist with water retention and nutrient uptake. It makes a great seedling starter!
10. **Humanure** *(To prevent pathogens and disease, only use for fruit and nut tree, not vegetables)*
    Okay, I hear you with your "Ewww's," but hear me out. This organic material is a valuable resource rich in soil nutrients. In the U.S., each of us wastes more than a thousand pounds of humanure each year. Composting is key! It takes a year to fully compost human feces and breakdown the pathogens. *For more information, check out* **The Humanure Handbook** *by Joseph Jenkins.*
11. **Newspaper**
    Makes a great mulch and soil amendment. The added bonus is that the soil-based ink kills diseases in the soil. It can be shredded or laid in a thick layer on your beds. It is best to wet the newspaper before applying.
12. **Comfrey**
    This deep-rooted herb was once a traditional remedy to help heal broken bones. Its vast root system acts as an accumulator by extracting a wide range of nutrients from deep in your soil. These nutrients naturally accumulate in its fast-growing leaves. Cut 4 to 5 pounds (1.8 to 2.27 kg) of leaves from each plant. It is super-rich in nitrogen and potassium. Some research has shown that comfrey leaves have 2 to 3 times more potassium than farmyard manures!
13. **Urine**
    Yes, you read that right! Human urine is an excellent source of nitrogen. It is great to add to compost tea or your compost pile as an activator. Pathogens, disease, and toxins

are quickly killed within 24 hours of leaving your body. Dilute the urine with water in a ratio 1::2 and water your plants.

14. **Citrus rinds**
    Stir those rinds right into the soil. As they break down, they'll release sulfur, magnesium, calcium, potassium, and more nutrients. You can also dry the peels and grind them into a fine powder that can be added to the soil.
15. **Kelp meal or seaweed**
    Kelp contains small amounts of nitrogen, potassium, and phosphorus, but it's very high in trace elements, too. Typically, you'll mix this liquid fertilizer with water. Use it as a foliar spray or pour it onto the soil around plants.
16. **Granite dust**
    Granite is made of volcanic rock. It is filled with more than 60 different elements, including potassium, calcium, phosphorus, and magnesium. It also includes the trace elements that make the soil nutrient dense. Be sure to read the label!
17. **Green manures**
    This is a favorite! Green manures are a fall cover crop that is grown on beds or pastures before or after crops or flowers to add nutrients back into the soil as they grow. They get turned under after their season. Some green manures include clovers, vetch, rye, and mustards.
18. **White Vinegar**
    There is a lot of chatter on the Internet about white vinegar changing the pH level of your soil. Tests have shown that it may have a temporary effect, but it is nearly impossible to change the pH of your soil, except over the very long-term. However, feed your container plants with a mixture of 1 Tablespoon of vinegar, 1 tablespoon of sugar in 8 ounces of water. Bring the mix to a slow boil until the sugar dissolves. Then, let it cool and feed those hungry plants.
19. **Grass clippings and Weeds**
    These are an excellent source of nitrogen and potassium for your fertilizer teas. Put the clippings in a 5-gallon bucket filled with water. Cover and let marinate for 3 to 4 weeks. You'll have a lovely batch of "green" fertilizer tea.
20. **Mushrooms**
    The part of the mushroom that you see is actually the fruiting body. The real magic is in the soil. Fungi are part of the soil web that helps bring nutrients to your plants.
21. **Borax**
    Some plants of the Brassica Family, like broccoli and cauliflower need boron (found in borax). Be sure to do a soil test to see if your soil needs boron. If it does, sprinkle 1 Tablespoon over 100 linear feet.
22. **Bat guano**
    Whether fresh or dry, bat poo adds a heavy dose of nitrogen to the soil. It acts fast and has very little odor. It also helps enrich the soil and help with drainage and texture. Add it directly to the soil or make a bat guano tea!
23. **Rabbit droppings**
    Bunny poo has a high concentration of nitrogen and phosphorus, as well as other trace minerals. It can be added directly into the soil or added to your compost pile. Bunny Poo

Tea can be made using a 5-gallon bucket, a shovel full of rabbit pellets, add water, and let steep for two days. Water the soil when it's ready!

24. **Chicken feathers**
    Feathers from your backyard chickens add nitrogen to your compost pile, and eventually, the garden. First, put them into your compost pile to let them decompose.
25. **Shellfish**
    Lobster, shrimp, and crab shells provide nutrients, including phosphorus. However, the bacteria that breaks them down is even more important! Simmer the shells for 20 to 30 minutes in boiling water. Drain well. Put them in a food dehydrator or oven until dry. Crush the shells with a mortar and pestle. Add to your compost pile or directly into the soil.
26. **Baking Soda**
    In order to sweeten tomatoes and discourage pests, lightly sprinkle baking soda on the soil.
27. **Compost**
    Compost is a great soil amendment and provides nutrients and micro-organisms to your soil. The microorganisms make the nutrients available for the plants to take up. However, some research is showing that compost teas are ineffective. Basically, it is watering down the nutrients in the compost, and doesn't make it any more available to the plants to take up.
28. **Alfalfa**
    Alfalfa is commonly used as part of livestock feed. However, alfalfa meal is simply ground up so that it breaks down faster. This particular fertilizer has low amounts of nitrogen, phosphorus, and potassium. As a result, alfalfa meal works fairly slow. The best use for this fertilizer is as a soil amendment in the early spring prior to planting crops.
29. **Nettles**
    The stinging hairs of the nettle plant may deter you from using this bad boy, but if you can stand it, put your harvest into a 5-gallon bucket, and cover them with water. In 3 to 4 weeks, you'll have wonderful plant food for your garden.
30. **Hydrogen Peroxide**
    Your plants' roots will thank you for a little extra oxygen. Mix 1 tablespoon of hydrogen peroxide with 2 cups of water. Water your plant's roots with the solution.
31. **Pine needles or Straw**
    Adding pine needles supplies nitrogen to your soil. It also adds bulk that will bring in the beneficial microbes to help break them down.
32. **Blood Meal**
    Add crucial nutrients like phosphorus and nitrogen to the soil by using blood meal to promote healthy plant growth. Want to make your own blood meal? You can! Gather the blood. If you're a woman, use your menstrual blood by collecting it in a menstrual cup. You can gather it from your meals, or from butchering some of your animals, too. Either way, pour the blood onto a baking sheet. Put it into a 375° oven. Keep it in the oven until all the blood is completely dry, about 20 minutes. Let cool. Scrape the dried

blood off the baking sheet and into a container. Use a mortar and pestle to ground the blood into a fine powder.

33. **Fish Emulsion**
    Fish emulsion fertilizer is high in nitrogen but pretty stinky! It is also very acidic and should be used lightly to avoid burning plants. Fish emulsion nonetheless acts immediately once it is applied, which makes it a good treatment for leafy greens that are suffering from low nitrogen levels. Be sure to experiment. Some plants may not tolerate it very well. There is a recipe below!
34. **Ground oyster shells**
    You may or may not have access to oyster shells, but they are a slow-release fertilizer to keep your garden healthy. Crush them into small pieces and bury them in the garden. The calcium carbonate in the shells will make the soil alkaline. Again, make sure you know your soil before adding this amendment.
35. **Nut Shells**
    Pop the nut in your mouth and toss the shell into the garden. It's a win-win! Nut shells add bulk, which will allow water and nutrients to get to the plant roots. Microbes will be super-happy with your discarded shells.

How do you combine these wonderful fertilizers into a super-mix?

Go back to what your soil and plants need. Grab a 55-gallon plastic container or trashcan with a lid. Add your ingredients, and let it sit for 3 to 4 weeks, or longer depending on your climate. Spread it over your garden. The microbes will thank you!

How much and how often do you fertilize?

It really depends on the plant, the time in the season, and what fertilizer you're using. If you are using a commercial organic fertilizer, always read the instructions and follow them to the letter. If you're making your own liquid fertilizer, test it on a few plants to see how they do. Start with a weak mix with a ratio 1:10, and gradually increase it to full-strength, especially if you're adding it to soil without plants.

Keep the timing in mind, too. You wouldn't put a nitrogen fertilizer on your tomatoes when they are flowering. If your soil needs it, boost your tomatoes with phosphorus to promote more flowering and fruit setting.

Once the growing season is in full swing, you'll want to add fertilizer every four weeks or so. Watch your plants. They'll tell you when it's time to fertilize again.

Seven More Easy Homemade Fertilizer Recipes

Superpower Fertilizer

Watch this short video on how to make an amazing, powerful fertilizer for free in your backyard. This fertilizer is so good, Peter-Paul actually traded a 5-gallon jug of this stuff for an iPhone… and yet it's only made out of leaves, food scraps, and worm poop. **Check it out here!**

You can even take the certification to become an Instant Master Gardener!

Comfrey Tea

What you'll need:

- A brick to hold the comfrey leaves down
- A big bucket or plastic trash can with a lid

1. Submerge your leaves for 3 to 5 weeks in a bucket or trash can of water. It depends on the warmth of your climate.
2. Mix the comfrey solution with more water to dilute (so it doesn't damage or burn the root systems of plants), a 1:3 (water) ratio should work.
3. Store in a cool dark place.

WARNING: Comfrey Tea stinks like crazy, but is OH-so good for your plants!

For Acid Loving Plants

Mix 1 tablespoon of white vinegar in one gallon of water. Hand water your acid loving plants.

Seed Starter Fertilizer

What you'll need:

- 1 drop of organic liquid dish soap
- 2 drops of ammonia
- 1 tablespoon of worm castings

1. Place the above into a one quart misting bottle.
2. Fill with water.
3. Shake it gently and mist the surface of the seed container every day until you start to see little sprouts.

Natural Rooting Hormone for Cuttings

Rooting hormone protects the cuttings from diseases and promotes root growth.

What you'll need:

- Apple Cider Vinegar
- Cinnamon
- Honey

1. Mix 1 teaspoons of apple cider vinegar into 1 quart of water.
2. Add 1 tablespoon of honey and mix until the honey is no longer visible.
3. Dip your cutting into the ACV/honey solution.
4. Then, dip the cut end into the cinnamon.
5. Plant in a seedling mixture, like coconut coir.

Homemade Fish Emulsion

You don't have to buy fish emulsion. You can make it with this recipe! **Click here to get the homemade recipe.**

Apartment (or Condo) Container Garden Smoothie Fertilizer

What you'll need:

- Compost bucket
- Blender
- Kitchen scraps
    - Egg shells
    - Vegetable scraps
    - Banana peel broken into small pieces
    - Old coffee grounds
    - Used bulk herbs from herbal teas

- Spent fruit (non-moldy)
- Stale sea-vegetables

1. Place all scraps in blender.
2. Fill blender halfway with water. Don't add too much water because there is already liquid in your kitchen scraps. *(You don't want your blender to explode compost all over the kitchen!)*
3. Place lid on blender. Start on a low setting and puree until everything is combined and becomes a liquid.
4. Feed it to your container soil.

Other Options:

- Pour it on top of the soil. Let it sit for 24 hours. Then, water in or turn the soil.
- Water in after pouring it onto the container's soil.
- If you already have plants in place, pour the mixture into large bucket and fill with water. Then pour the water-liquid over soil.

Ready to Get Started?

There are a lot of different types of fertilizers for you to try. However, use what you have locally or in your home to save you some money. If you are in the Midwest, there is no point in ordering Oyster Shells. Use what you have! Whether you are a Hobby Farmer or a Container Gardener, here are your first steps in a nutshell (pun intended!)

1. Start your compost pile. Regardless of what your soil test tells you, a compost pile will be an invaluable source of nutrients that will feed your soil's microbes and your plants.
2. Get a soil test to know and understand what your soil needs. More than likely your county extension office will have soil testing kits.
3. Understand what your plants need at different times of the season. Are they growing, flowering, or needing to add roots? Fertilize at the right time with the right fertilizer!
4. Make up a batch of fertilizer that is just right for your garden. Experiment. Learn. Have fun!
5. Remember that gardening is an adventure. Try different things and make note of the results. Some things may work better for you than others. You be the judge!

Let us know about your gardening adventures!

Happy Growing!