

FOODCYCLER

Foodilizer™

Gardening Guide

A Gardener's Handbook for Using
Foodilizer as a Soil Amendment to
Enrich Gardens, Lawns and Houseplants

Prepared in partnership with



vineland
RESEARCH & INNOVATION CENTRE

Getting Started

Introducing Foodilizer

Foodilizer is a nutrient-rich soil amendment produced by the FoodCycler.



The FoodCycler is a kitchen appliance that recycles food waste, reducing its volume by up to 90% and eliminating associated odours, sticky residues and CO₂ gas emissions.

The by-product left over after the FoodCycler cycle, called Foodilizer, has been scientifically proven to nourish plant roots and soil, amending garden soil with a plethora of important nutrients and organic matter that plants need to survive.

Producing Foodilizer

Step 1



Collect food waste from kitchen scraps and add to the collection bin

Step 2



FoodCycler mixes and heats to create a uniform product

Step 3



Foodilizer is generated and ready to use as a soil amendment

In this guide, you'll learn how to properly integrate Foodilizer in your garden. Experience a practical, sustainable way to manage food waste while enriching your garden and compost piles—right from your kitchen!

For more information about the types of food waste you can add to your FoodCycler, refer to the FoodCycler product manual or **visit foodcycler.com**

Foodilizer Benefits

Your Garden Will Love



Nutrient Rich Material

Foodilizer is packed with essential nutrients that plants need to grow, like nitrogen, phosphorus, and potassium. Adding it to your soil can give your garden a quick and healthy growth boost.

Nitrogen (N)

Promotes above ground plant growth

Phosphorous (P)

Promotes below ground root growth

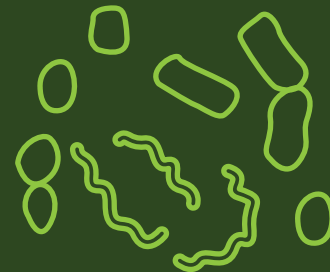
Potassium (K)

Supports water and nutrient movement for plant survival



High in Organic Matter

Foodilizer is rich in organic matter, which helps your soil hold water longer for your plants to use and slowly releases nutrients over time. As microorganisms break down this organic matter, your soil becomes more fertile and supportive of strong, healthy plants.



Feeds Soil Microbes

The organic matter in Foodilizer feeds beneficial microbes in your soil. These microbes are essential for improved nutrient cycling, ensuring that plants have continual access to the nutrients they require.

Nutrient Threshold

Knowing the Electrical Conductivity (EC) limits of the plants in your garden can help you apply the optimal amount of Foodilizer

What is Electrical Conductivity?

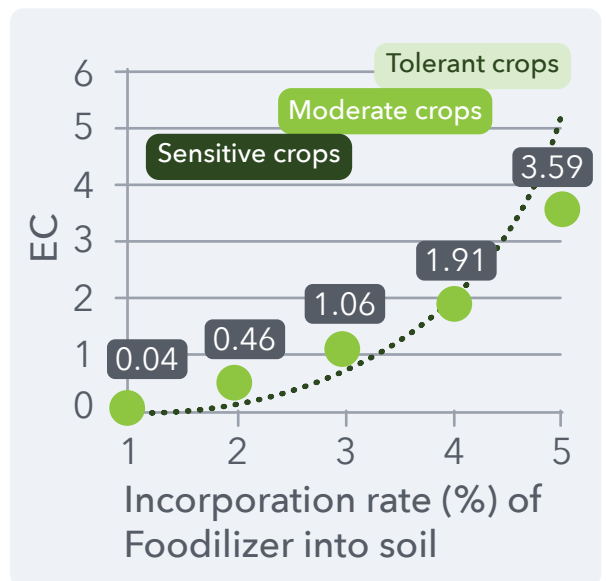
Electrical Conductivity (EC) is a simple metric used to identify the amount of nutrients (e.g., nitrogen, phosphorus, potassium) in a growing media or soil amendment by measuring the ability of a solution to conduct electricity. The higher the EC, the more nutrients are available.

Why is EC Important for Plants?

Plants need the right amount of nutrients to grow properly. Too low an EC indicates insufficient nutrients, which can lead to poor growth and deficiencies. Too high an EC can mean excess nutrients, which can harm plants by causing nutrient burn or water stress.



Reminder: Plants should only be added once the soil and Foodilizer has had a chance to settle for 1 week.



Each plant has a specific EC range that it prefers for optimal growth. Matching the Foodilizer EC to the target plant's preferred EC range will help ensure healthy plants. Seeds are a sensitive life stage and do not require added fertilization until they grow.

When your seedlings have 4-6 leaves, transplant them into pots or a garden bed considering:

Sensitive EC crops

Low nutrient requirements

Lettuce, Herbs, Peas, Strawberry, Blueberry, Radish, Lawn Grass

~1/3 cup of Foodilizer per gallon of soil. This will give them a nutrient boost with a 2% mixture

Moderate EC crops

Moderate nutrient requirements

Carrot, Beet, Cauliflower, Garlic, Raspberry, Celery, Potato, Melons, Grapes, Kale, Onion, Squash, Corn, Zucchini, Spinach

~3/4 cup of Foodilizer per gallon of soil, for a 5% mixture.

Tolerant EC crops

High nutrient requirements

Cucumber, Pepper, Eggplant, Tomato, Broccoli, Beans, Cabbage

~1 1/2 cup of Foodilizer per gallon of soil, for a 10% mixture.

EC categories based on experiments and analysis by Vineland Research

Keeping Foodilizer Plant-Friendly

If you're planning to add Foodilizer to your garden, be cautious about adding food scraps that are high in salt (i.e sodium) to your FoodCycler. The following items are typically high in salt content and could potentially alter the soil balance if added in large amounts:

Foods High in Sodium



Cured Meats

Bacon, salami, ham, prosciutto, and sausage



Salty Sauces

Soy sauce, ketchup, mustard, BBQ sauce, and salad dressings



Deli Meats

Turkey, chicken, roast beef slices, and other deli-style meats



Snack Foods

Potato chips, pretzels, salted nuts, and flavored crackers



Canned Meats & Fish

Canned tuna, salmon, chicken, and spam



Pickled Foods

Pickles, sauerkraut, and pickled vegetables



Processed Cheeses

Cheese slices, spreads, and dips

Instead, opt for fresh fruits and vegetables, coffee grounds, eggshells, and other low-salt organic waste for optimal results.

Does my diet affect my Foodilizer and plant growth?

Yes, it can! Omnivore-based Foodilizer (made from plant and animal scraps) may promote better plant growth than vegetarian-based Foodilizer - in a lettuce trial, plants grown with omnivore-based Foodilizer had 10% higher fresh weight compared to using a vegetarian-based Foodilizer.

Richer nutrient profile - Omnivore-based Foodilizer generally provides a richer and more diverse nutrient profile, which can enhance plant growth more effectively than vegetarian-based Foodilizer.

Both are better than none - Whether you're vegetarian or omnivore, using soil amendments will improve plant growth compared to not using any at all.

Tips for best results - Avoid high-salt foods and follow the recommended application rates, no matter what your diet is.

Omnivorous Diet



Omnivorous Foodilizer

Vegetarian Diet



Vegetarian Foodilizer

Applications

Four ways to Apply Foodilizer in your Home



1. Enhancing Garden Soil (pre-planting)

Before planting: Prepare the garden bed

Foodilizer can be incorporated into the soil to provide nutrients to promote continuous plant growth.

Wait 1 week before planting

5 Plant your
veggies

4 Cover
with soil

3 Add
Foodilizer

2 Add leaf &
yard waste

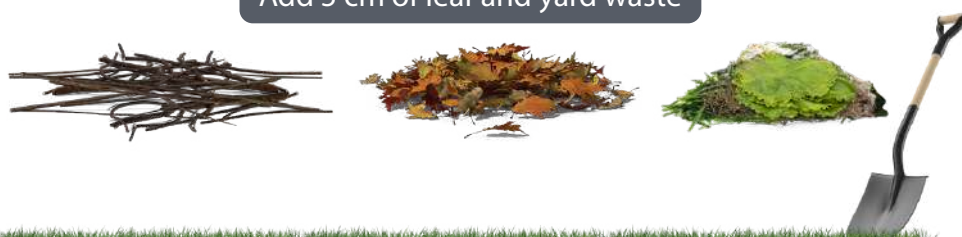
1 Dig a
garden bed



1/3 to 1½ cup of Foodilizer for every m² of soil



Add 5 cm of leaf and yard waste



Before planting, add 1/3 to 1/2 cups of Foodilizer per square meter of soil. Thoroughly mix in the Foodilizer into the soil to a depth of 5 to 10 cm using a shovel and rake. After application, water the area and wait 1 week before planting transplants.

Seeds are sensitive to high nutrient levels and may not germinate if Foodilizer is applied directly. To support seed germination, use the lower application rate of 1/3 cup per square meter and allow the Foodilizer to rest for 1 week before planting.

After planting: maintaining nutrient supply

To maintain nutrient supply throughout the growing season, thoroughly mix in 1/3 cup of Foodilizer in the soil around each plant, without touching the stem and water lightly. As microbes break down the Foodilizer, the nutrients will deplete over time – typically in 2 weeks. Re-apply the Foodilizer every two weeks to ensure a constant nutrient supply.



Avoid touching stem with Foodilizer and water lightly



Reapply every 2 weeks



Soil application is based on a soil volume of ~1 gallon

2. Lawn Amendment

Foodilizer can be added to your lawn to encourage grass growth



Sprinkle ¼ to ½ cups per m² (10 ft²) of Foodilizer onto bare or patchy areas of your lawn.



After adding the Foodilizer, gently rake it into the soil, creating a planting bed for grass seed.



Apply grass seed and top-up with soil. Grass seed requires ample water to germinate. Water daily for one week, and during hot periods.



Caution: Do not add Foodilizer to existing lawn cover, as the Foodilizer soil amendment needs to be mixed in thoroughly with soil to integrate properly and provide growth benefits to new grass.

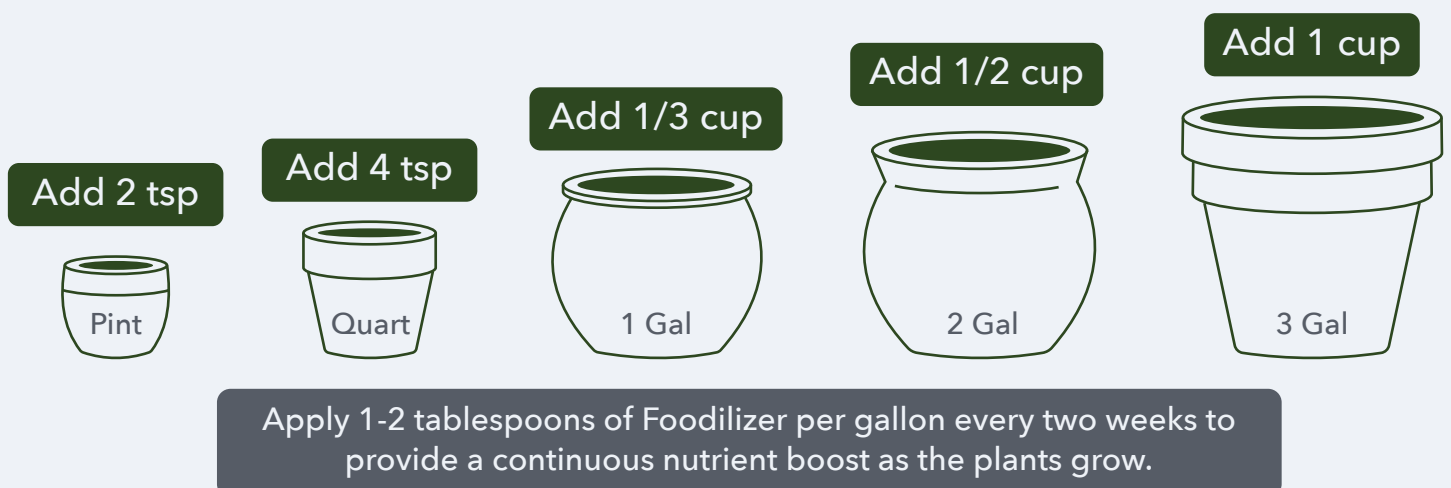
3. Compost Pile Integration

Foodilizer can be added to your outdoor compost pile along with your leaf and yard waste

- **Weekly Boost:** Add 2-3 cups of Foodilizer to your compost each week. Foodilizer breaks down quickly, providing a rich source of nitrogen that feed your compost microbes.
- **Balance with Yard Waste:** Continue adding leaf and yard waste materials like grass clippings and leaves. These are high in carbon but low in nitrogen, making Foodilizer an essential addition to maintain the right nutrient balance.
- **Seasonal Maintenance:** Keep adding yard waste and Foodilizer throughout the growing season, all the way until late fall when the leaves stop dropping. After the final additions, let the compost mature over the fall, winter, and early spring. However, this is primarily about colder climates and may differ in warmer climates.
- **Turn and Water Weekly:** Each time you add Foodilizer, water the compost pile and give it a good turn with a shovel. This routine helps control pests while ensuring your compost stays healthy.
- **Ready for Spring:** Let it mature for about six months (from November to April), and it's ready to add to your garden in May.

4. Container and Houseplants

To maintain nutrient supply throughout the growing season, thoroughly mix in 1/3 cup of Foodilizer in the soil around each plant, without touching the stem and water lightly. As microbes break down the Foodilizer, the nutrients will deplete over time - typically in 2 weeks. Re-apply the Foodilizer every two weeks to ensure a constant nutrient supply.





Note about top dressing plants

Top dressing with Foodilizer on potted plants can lead to mold growth at the application site. To avoid mold growth, mix Foodilizer into the soil before planting rather than top dressing.

If you have mold allergies or sensitivities, or if you're growing houseplants indoors, avoid top dressing. If you choose to use top dressing, bury it under the soil surface to reduce the risk of mold.

Foodilizer in Action

Case Study: Findings from study using Foodilizer to support the growth of potted lettuce

Adding Foodilizer boosted plant growth by more than 4 times compared to potting mix alone

Plants grown in standard potting mix tended to be small with pale leaves, indicating nutrient deficiencies. However, adding Foodilizer boosted their growth by over 340%, resulting in healthier, more vibrant plants.



0%

Potting mix



3%

2 cups of potting mix
+ 1 tbsp Foodilizer

Allow the potting mix and Foodilizer to 'rest' before planting

After adding Foodilizer to your potting mix, water it well and let the mixture sit for 1 week before planting seeds. If you're planting transplants, let it rest for 1 week before transplanting. This waiting period allows the Foodilizer to break down and release nutrients aligned with the needs of lettuce plants.



1 week rest



No rest

Seedlings grow healthier and larger when the potting mix has rested for a week before planting.

Provide smaller amounts of Foodilizer to sensitive young plants, and larger amounts to mature plants

Seedlings grown in a 1% Foodilizer mixture (1tsp Foodilizer + 2 cups potting mix) thrive in the early stages. However, as they grow and develop, they need more nutrients to reach their full size. When your plants have 4 to 6 leaves, transplant them into a 3% Foodilizer mixture. After that, add more Foodilizer every 2 weeks to keep them growing strong.



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Vineland respectfully acknowledges that it is situated on treaty lands. The land is steeped in the history of the First Nations including the Hatiwendaronk, the Haudenosaunee, the Anishinaabe and the Mississaugas of the Credit First Nation. They have lived on this land since time immemorial. We are grateful to have the opportunity to be present in this territory. Vineland is Canada's leader in horticulture-related innovation, from research and development to commercialization, with a mission to improve the economic viability, sustainability and competitiveness of Canadian horticulture with impactful action. Vineland has five major research programs: Biological Crop Protection, Consumer, Sensory & Market Insights, Horticultural Technology Solutions, Plant Responses and the Environment and Plant Variety Development. Approximately 100 employees, graduate and co-op students from partner colleges and universities work at Vineland.

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