

Growing Herbs & Microgreens Indoors



Class Description:

Imagine seasoning your dishes with fresh herbs and microgreens all year round without even leaving home. This step-by-step guide to success with growing and maintaining a windowsill garden will show you how.

Discuss best plants to select, choosing the right location, optimum soil conditions and watering strategies. Learn about cost-effective options for grow lights and when you might need them. Take home a microgreen starter kit that includes trays, grow mats and “superfood” seeds.



Class Content (90 Minutes)

- **Background on Instructor**
- **Microgreen Advantages**
- **Microgreen Grow Process**
- **Microgreen Grow Supplies Needed**
- **Microgreen Grow Steps**
- **Plant Selection**
- **Grow Location in your Home**
- **Optimum Soil Conditions**
- **Watering Strategies**
- **Grow Light Options**
- **Windowsill Newspaper Seed Starter**
- **Windowsill Garlic Shoots**
- **Rosemary Flatbread Cracker Recipe**

Take Homes:

- **Microgreen Starter Kit**
- **Special Gifts – Signed Learn from Looking Books**

Bonus Content

- **TIPS on Storing Fresh Vegetables and Fruits**
- **TIPS on Storing Fresh Herbs**
- **MORE TIPS – Storage and Cleaning**
- **MORE INFO: 9 Foods You're Probably Cleaning Wrong**

Questions and Answers (Q&A) are during the class as well as at the end.

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Background on Instructor

Charlie Szoradi has over three decades of experience in sustainability, and he is the current President of The Agrarian Group. Charlie is also one of the instructors for the non-profit StudentFarmers.org.



President



Masters of Architecture 1993



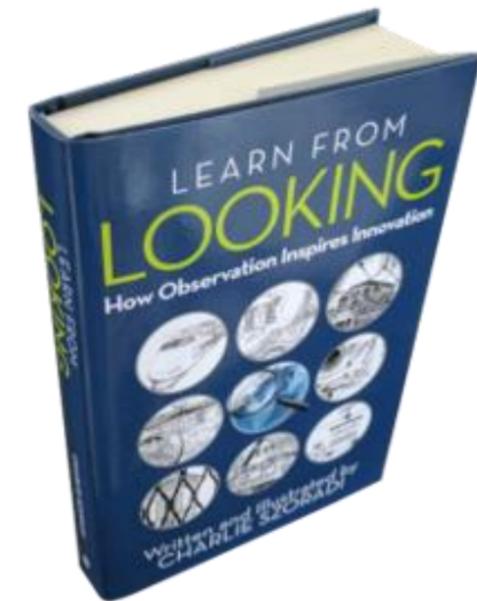
Board Member (3 Elected Terms)



Instructor



Founder & Editor since 2007



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Microgreen Advantages



Microgreens are baby plants that are typically harvested in the first 10 days of their life. They often have 40 times the nutrients of their mature counterparts and are packed with antioxidants and other nutrients that are beneficial to people of all ages.

They look like little “shoots” that are about two to three inches tall with a pair of small leaves at the top. To date, microgreens have often been used as a garnish to add flavor to everything from avocado toast to steaks.

Highlights on “all-star” microgreens relative to key benefits:

- **Healthy Skin** - Beet and Kale Microgreens
- **Weight Loss** - Swiss Chard Microgreens
- **Sports Performance** - Arugula Microgreens
- **Heart Health** - Broccoli and Radish Microgreens
- **Cancer Prevention** - Broccoli Microgreens
- **Digestion** - Broccoli Microgreens
- **Immune System** - Broccoli, Clover, and Pea Microgreens
- **Ulcer Relief** - Alfalfa Microgreens
- **Cholesterol Improvement** - Collard Microgreens
- **Vision Loss Prevention** - Kale Microgreens
- **Diabetic Diet Enhancement** - Buckwheat Microgreens



Cost-Effective Health!

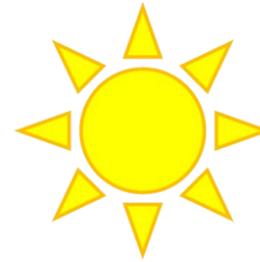
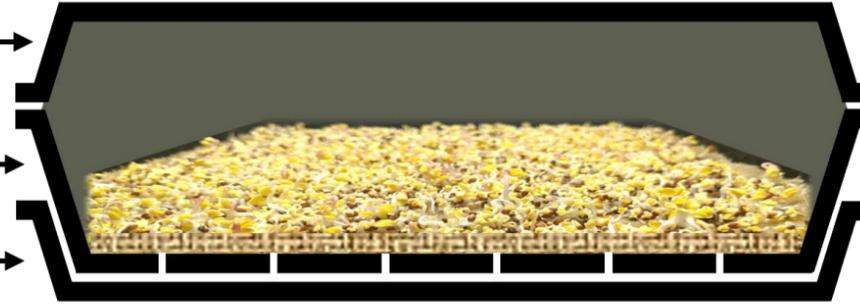
Microgreen Grow Process

Germination (typically 3 Days)

Upper Tray (without holes)

Grow Tray (with holes)

Lower Tray (without holes)



Vegetation (typically 7 Days)

Upper Tray
(removed for photosynthesis)

Grow Tray (with holes)

Lower Tray (without holes)



Microgreen Grow Supplies Needed

1. Seeds
2. Grow Mat (hemp)
3. Spray Bottle
4. Scissors
5. Measuring Device (teaspoon or $\frac{1}{4}$ cup)
6. Tray with drainage holes
7. Tray without holes
8. Tray without holes (cover for germination)
9. Container for refrigeration (eco-plastic)
10. Stickers for labels
11. BONUS: Tenacity

For daily watering just use any cup that holds 16 oz or $\frac{1}{2}$ liter

For online purchasing see: <https://studentfarmers.org/shop/>



Microgreen Grow Steps

Microgreens are easy to grow on a small scale and can thrive indoors if sunlight is available or with a light-emitting diode (LED) fixture for controlled environment agriculture (CEA). **Grow Mat Cultivation:** StudentFarmers.org recommends Grow Mat Cultivation over Soil Cultivation because of the ease of the farming, harvesting, and packaging.

1. Sowing seeds: Scatter the seeds over a moist grow mat (e.g. hemp) in a double planter tray that has drainage holes in the upper tray and no-holes in the lower tray. This allows excess water in germination and vegetation to drain into the lower tray and prevent overwatering and mold. Spray the seeds with water from a misting sprayer and make sure not to have the sprayer head so close to the seeds that it moves them. Spray the underside of a third tray (no-holes) and turn it upside down to cover the seeds on the grow mat. This is important for the first three days, given that germination occurs in darkness. For a 10" x 20" tray you will typically need 1 oz of seeds, which is the equivalent of ¼" cup or about 8 to 10 teaspoons of seeds.

2. Germination: Place the tray setup in a cool dark place or at least a counter that is not near a sunny window. Lift the upper lid and mist the seeds on the grow mat with water twice daily for three days or until some of the stalks are 1" to 1.5" in height. Make sure to **Direct link:** <https://youtu.be/-UiDopHchpY> place the top tray back over the germinating seeds each day. If you do not mist the baby stalks you will start to see white fuzz. Do not be alarmed, because it is just root hairs and the water from the spray bottle will make them disappear. The baby stalks will look yellow given that they have not yet been exposed to sunlight or a grow light which turns them green through photosynthesis.



Microgreen Grow Steps

3. Vegetation: On day four remove the cover tray, and place the microgreens on or near a sunny windowsill (preferably facing south) or under a grow light. You can mist the microgreens once or twice daily but it is not required. What is required is watering the plants. At least once a day lift the edge of one of the short ends of the upper tray and pour ½ liter (approx 16 fluid ounces) of water into the lower tray, which is the one without the drainage holes. This will fill it up to between ¼” and ½” of water to help keep the roots and Grow Mat moist. You will see that the roots start to “reach” down from the upper to the lower tray to absorb the water. Check about 12 hours from when you added water to see if the lower tray is dry or near dry. If so, add another ½ liter, and typically do not add more than 1 full liter or 32 fluid ounces in any 24 hour period. The key is to keep the roots wet.

4. Harvest: After about 7 to 10 days from the time that the microgreens have been in the light, you will be ready to harvest when the greens are about 2” to 3” in height. To harvest, use scissors or shears to cut the microgreens at the base of their stalks near the top edge of the soil. If you do not eat the microgreens within 1 to 3 days of the harvest, then you will want to cut the Grow Mat vs the microgreens into sections that fit into a sealed container such as clamshell. They will last approximately one week, while refrigerated. Since you have not cut the microgreens they are technically still “living” so they are fresh up until the moment that you eat them. You can also cut and freeze microgreens in a freezer friendly bag or container if you do not expect to eat them all within a week.

Watch: 11 minute video on Student Farmers YouTube Channel <https://studentfarmers.org/social-media/>
“Student Farmers Microgreen Windowsill Grow Tips from Seed to Harvest October 26 2022”



Plant Selection: Microgreens, Leafy Greens, and Herbs

Microgreens – Advantages of “Superfood”
See: www.StudentFarmers.org/microgreen-benefits



Herbs



Leafy Greens



Key Topics

Grow Location in your Home

(Windowsill, Counter, Extra Area like a Basement with LED Lights)

- Microgreens
- Herbs and Leafy Greens

Optimum Soil Conditions

- Soil
- Grow Cubes
- Grow Trays



Watering Strategies

- Spraying conditions
- Daily needs
- Twice Daily needs
- Automation

Grow Light Options

Solution for anywhere



Under Cabinet Solution for Kitchens

Larger scale shelving system Solution with timer option for basements and anywhere else.



Details and purchasing at: <https://studentfarmers.org/shop/>

www.StudentFarmers.org

Windowsill Newspaper Seed Starter

SUPPLIES:

- * pot maker
- * newspaper strips 3 1/2" x 16"
- * potting soil
- * seeds
- * permanent marker
- * waterproof tray or plate for seed pots

DIRECTIONS:

- * loosely roll paper around handle
- * fold paper under the end
- * press into base and twist
- * remove cup from handle (tape end if you want)
- * fill paper cup 3/4 full of potting soil
- * plant 2 or 3 seeds in cup
- * sprinkle dirt on top of seeds
- * label cup with seed name
- * spray with water to soak
- * place on windowsill on tray or plate, check daily and keep moist
- * after germination, the entire paper cup can be planted in a larger pot or outside



Windowsill Garlic Shoots - (USE INSTEAD OF CHIVES)

SUPPLIES:

- * 16oz (small) plastic water bottle
- * small rock to fit inside bottle (to stabilize it)
- * large clove of garlic (carefully peeled)
- * scissors or knife

DIRECTIONS:

- * with scissors or knife pierce bottle at top groove - cut around groove and remove top
- * place rock in bottom of bottle
- * turn top upside down into bottle
- * place garlic clove firmly in bottle top (garlic must be large enough to not slip through)
- * add water to bottle and 1/2 way up garlic clove
- * add water daily if necessary to ensure roots stay wet
- * cut garlic shoot to use in salads, soups, on hummus etc
- * garlic will regrow one or two more shoots - then discard and begin again



Rosemary Flatbread Cracker Recipe

Here is a great way to convert the Rosemary that you grow into delicious treats.

SUPPLIES (Ingredients):

- 1 3/4 cup flour
- 1 tsp baking powder
- 1/2 tsp salt
- 2 T chopped rosemary
- 1/2 cup water
- 1/3 cup olive oil
- kosher or flaked salt (for a topping)

DIRECTIONS:

- Preheat oven to 450 degrees
- Mix all dry ingredients in a bowl
- Add water and olive oil - mix
- Put dough on floured board and knead a few times
- Divide dough into 6 pieces with a knife and roll each into a log
- Cut each log into 8 pieces and make into mini logs
- Roll out each piece into a thin strip with a rolling pin
- Place on baking sheets
- Brush each piece with olive oil and sprinkle with salt
- Bake 450 degrees for about 4 to 5 minutes until golden brown
- Let them cool
- Store in airtight bag or container



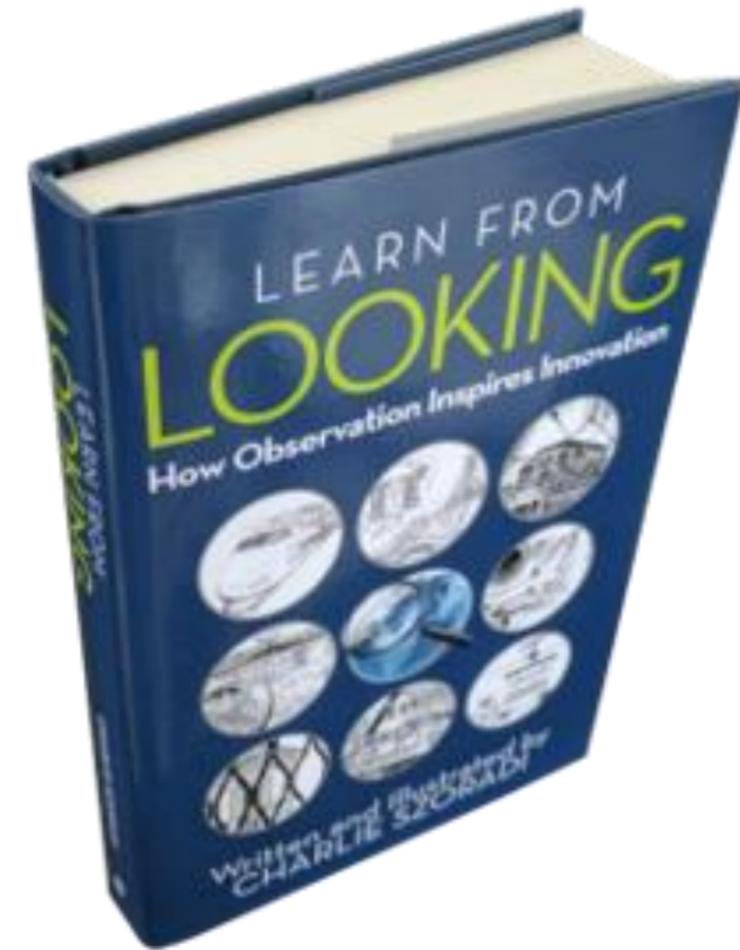
Take Homes

- **Microgreen Starter Kit**

Each tray is 10" x 10"

- (1) Grow Tray with Drainage Holes
- (1) Lower Tray (no holes)
- (1) Germination Cover Tray (no holes)
- (3) Hemp Grow Mats
- (3) Seed sets of 28 grams (1 oz) each for one harvest (3 total)
- (1) Spray bottle for misting
- (4) Eco-friendly biodegradable bio-plastic containers
- (4) Superfood labels

- **Special Gifts – Signed Learn from Looking Books**



Note: Chapter 14 covers advanced indoor agriculture with a “Perpetual Food Machine”

TIPS on Storing Fresh Vegetables and Fruits

ROOM TEMPERATURE (Typically kitchen Counter)

- Bananas
- Basil
- Cucumber
- Eggplant
- Garlic
- Grapefruit
- Green beans
- Lemons
- Limes
- Onions
- Oranges
- Potatoes
- Summer squash
- Sweet potatoes
- Watermelon
- Winter squash
- Zucchini

TRANSITION Counter first > Then move to the refrigerator when Ripe

- Apricots
- Avocados
- Kiwifruit
- Mangoes
- Melons
- Nectarines
- Papayas
- Peaches
- Pears
- Pineapple
- Plums

REFRIGERATOR

- Apples
- Asparagus
- Blueberries
- Broccoli
- Brussels sprouts
- Cabbage
- Carrots
- Cauliflower
- Cherries
- Cilantro
- Corn (whole ears in the husk)
- Dark leafy greens
- Grapes
- Leeks
- Lettuce
- Parsley
- Peas
- Pomegranate
- Raspberries
- Strawberries

Source: <https://www.eatingwell.com/article/286048/the-best-way-to-store-fruits-and-veggies/>

TIPS on Storing Fresh Herbs

REFRIGERATE herbs so that they last longer and stay green and flavorful for a good while (10 days to 2 weeks, and sometimes even longer).

Most fresh herbs are best stored in the refrigerator

(with the exception of basil). Refrigerate both hardy and soft herbs.

HARDY HERBS have woody stems (which should not be eaten) and tougher leaves.

Examples include:

- Rosemary
- Thyme
- Oregano

SOFTS HERBS have tender stems and delicate green leaves. The stems are also edible, though, in some cases, they may taste bitter.

Examples of soft herbs include:

Cilantro
Dill
Mint
Parsley
Basil

Herbs

Wash fresh herbs like you would salad greens in cool water and then spin them dry. With the exception of [basil](#), fresh herbs like to be stored in the fridge with a damp (but not soaking wet) paper towel to keep them fresh. You can also store them like a little mini bouquet of flowers in your fridge by trimming off an inch or so of the stem and sticking them in a jar of water with a plastic bag loosely covering the bunch. You can use the same trick for asparagus too; it helps keep the flower ends fresh. Ditto for basil, but keep your basil bouquet on your counter instead of in the fridge.

Related: [Guide to Cooking with Fresh Herbs](#)

Source: <https://www.themediterraneandish.com/how-to-store-fresh-herbs>

www.StudentFarmers.org



MORE TIPS – Storage and Cleaning

Produce Storage (Together or Separately): Some vegetables and fruits should be stored separately either in the fridge or on the counter. Ethylene gas, a natural gas that some fruits emit, can speed the ripening process of some (but not other) fruits and vegetables. If you want to ripen your avocado faster, store it next to a ripe banana in a paper bag. The ethylene gas from the banana is a ripening accelerant. Best-Practice: Keep high-ethylene gas-emitting fruits apart from other produce. Apples, avocados, stone fruits, pears, bananas and tomatoes are a few of the top ethylene producers. Delicate leafy greens are some of the most susceptible to ethylene gas. Onions share their fragrance with the neighbors, most aggressively after they have been cut. Onions should be stored separately and away from potatoes, because they will wilt and sprout more quickly when onions are along side.

Storing Cut Produce: Many vegetables may last 5 to 7 days after being cut and fruits may last about 5 days, so long as you always refrigerate cut vegetables and fruits and store them in airtight containers. Fruits like apples, pears, bananas and avocado brown quickly, so it is better to eat them after slicing. Store ripe fruits (exception bananas) whole in your refrigerator crisper drawer. The crisper keeps the moisture in balance, which adds longevity to produce.

Washing Produce: Wash your fruits and vegetables before eating them. This includes the ones that you peel. Bacteria that causes foodborne illness can cling to the surface of the produce. As an example, cantaloupes have had problems with *Salmonella*. Bacteria may contaminate your cutting board, so prevention is the best medicine. A quick cold-water rinse is key and running water, and here are some added tips:

Cleaning Leafy Greens: Best-practice is to separate the leaves from the head and soak them for about 5 minutes in a bath of cold water. With your fingers, swirl them gently to loosen the debris. Then lift them out of the water and into a salad spinner and spin to dry. If they are not dry, wet leaves can turn into a mush overnight or within about a day. After they are dried, wrap lettuce leaves in a paper towel. Then placing in a plastic bag. The paper towel helps absorb extra moisture, so the leaves stay crisp). Store the plastic bag in the crisper drawer of the refrigerator. Eat the loose lettuce leaves within 3 days of storing.

More info: [9 Foods You're Probably Cleaning Wrong](#)

Source: <https://www.eatingwell.com/article/286048/the-best-way-to-store-fruits-and-veggies/>

www.StudentFarmers.org



MORE INFO: [9 Foods You're Probably Cleaning Wrong](#)

- 1. Mushrooms:** Mushrooms are porous, so it is best not to soak them, but a quick rinse under cold, running water is perfectly fine and won't waterlog them. Rinsing mushrooms will save you time and paper towels from drying ones that have been soaked.
- 2. Chicken:** There's a long-held belief that washing raw chicken is crucial. However, this is the last thing you should do. Yes, raw chicken can contain bacteria, but washing just risks spreading that bacteria to kitchen surfaces, utensils and even other food. Instead, use a separate cutting board and utensils for raw chicken, wash your hands with warm soapy water before and after you handle it, and use a thermometer to check that your bird is fully cooked—that's what's going to kill any bacteria. The FDA recommends an internal temperature of 165°F, whether you're roasting a whole chicken or cooking parts.
- 3. Bagged Lettuce:** It may be tempting to wash bagged lettuce, but if it's labeled "prewashed," "ready-to-eat" or "triple-washed," it's safer to use it as is. The reason? Washing those greens simply opens the door for contamination from bacteria already in your kitchen. This rule applies to other bagged items like precut carrots, as long as they're labeled the same way. The bottom line? Tonight's salad prep just got significantly speedier.
- 4. Greens:** Unlike bagged lettuce, greens bought in bunches [require thorough washing](#). The leaves of hearty greens—think spinach, collards, kale and chard—have a knack for trapping dirt, so rinsing really won't cut it. Swish the greens in a bowl of cold water to remove any dirt—it will fall to the bottom—and soak especially dirty greens for 5 minutes. Next, lift out the greens and dry with towels or a salad spinner. The process takes a few extra minutes, but unless you're a fan of soil in your sautéed greens, it's definitely worth it. **Related:** [You Can Revive Wilted Lettuce and Veggies with This Simple Trick](#)
- 5. Berries:** While we love advance prep, rule No. 1 for washing berries is to wait until you're ready to eat them. Why? Moisture leads to mold and spoilage, so it's best to store berries dry. If you must wash berries ahead, be sure to thoroughly dry them on a paper-towel-lined baking sheet before refrigerating. As for the actual washing, remember that berries are delicate. Strawberries are sturdy enough to be rinsed in a colander, but blackberries, raspberries and blueberries require extra care. Place them in a colander, dip it in cold water and gently swish the berries to remove any dirt without crushing them.
- 6. Broccoli, Brussels Sprouts & Cauliflower:** Cruciferous veggies have tiny nooks and crannies that love to trap dirt, but a quick soak will ensure they're perfectly clean and ready to eat. Soaking gives the water time to penetrate—this is especially handy when cooking whole heads of cauliflower—and wash away unwanted extras, but follow with a rinse under cold running water just to be safe.
- 7. Rice:** Have you ever noticed that rice cooking instructions often say to rinse the rice? If you skip this step, you're not alone, but it's time to change your ways. Rinsing removes debris, but more important, it removes surface starch, which is what leads to clumpy, gummy rice. So, grab that strainer and give your grains a good wash. The water doesn't need to run clear, but a thorough rinse will bring you one step closer to fluffy, tender rice.
- 8. Scallions:** You're probably already washing scallions under cold running water, but did you know their tubes can fill with dirt? As you rinse, simply fill and drain the tubes to remove any trapped dirt. It's that easy.
- 9. Leeks:** When it comes to trapping dirt, there may be no worse offender than leeks. These versatile members of the allium family are grown with soil piled around them, which means they need serious cleaning. Start by trimming the roots and dark green tops, then cut each leek lengthwise in half. If you're cooking leeks in larger pieces, hold each leek half under cold running water, riffling the layers like a deck of cards to help remove all the dirt. For smaller pieces, cut or chop your leeks then swish them in a bowl of cold water before lifting them out and leaving the dirt behind.

