



Grow This! Microgreens and More

Brandy Brabham, WVU Extension Agent –
Roane County

Microgreens are very young and tender miniature versions of full-grown plants. Often, the term microgreens is used interchangeably with sprouts and baby greens; however, each are considered different products, as the plant is harvested at different stages of growth for consumption.

Microgreens are gaining popularity, because they are easy to grow, can be grown indoors and add color, texture and distinct flavors to food – particularly salads, soups and sandwiches. Microgreens also are more nutritious than their full-grown counterparts, sometimes by significant amounts.

Sprouts

Sprouts are seeds that have just germinated. The sprout is generally harvested one to eight days after germination (depending on the size of the seed) and when the stems are between 1 to 3 inches in length with two small leaves. The most commonly grown seeds for sprouts are alfalfa, mung bean, sunflower seeds, lentils, peas, mustards, red clover, radish, broccoli and wheat grass.

They may not have any color to them and typically are consumed raw and whole, including the seed and roots. If lightly cooked, sprouts provide a crisp texture to sandwiches and salads.



Growing sprouts at home does not mean they are safer. The environment that sprouts need to grow, along with the fact that they typically are eaten raw or lightly cooked, has caused many foodborne illness outbreaks. The ideal growing environment for sprouts supports the microorganisms' growth. There is a risk of contamination with salmonella and E. coli. Seeds are often the source of infection; therefore, it is important to purchase seeds that are sold specifically for sprouting and that have been tested for microorganisms.

Sanitation

Good sanitation is also necessary when growing sprouts. Always wash hands thoroughly before setting up the sprouting operation and when handling the seeds or sprouts. Keep sprouts away from other food production areas and animals. Grow sprouts in an area of your home where they are not disturbed. Keep pets away from the seeds and sprouts. Ensure that all containers and contact surfaces are clean and remain clean. The water used to irrigate the sprouts should be fresh, drinkable water and applied with a clean container.

Due to the high number of outbreaks, sprouts have been labeled as a high-risk food. This means that people with compromised immune systems, such as children, elderly, pregnant women and those who are sick or taking medications that impair the immune system, should avoid eating sprouts.



Sprouts require adequate moisture and warm temperatures (about 70 F) to grow. Sprouts can be grown in a sterilized jar, covered with a couple inches of water and then by a food-grade cloth.

The chance of developing a foodborne illness from sprouts also can be reduced after harvest. Keep fresh sprouts refrigerated at or below 40 F. Do not consume foul-smelling sprouts or sprouts that are limp, slimy or moldy. Store sprouts in clean containers. Wash hands thoroughly before touching sprouts. Right before use, wash sprouts with cool water.

Baby Greens

Baby greens are the next size of miniature versions of mature plants to harvest. Plants used for baby greens typically are more commonly known as greens, such as baby spinach, lettuces, kale and beet greens. Baby greens are just the young, tender leaves of the plant. Often, they are used in salad or mesclun mixes. Different greens and herbs add various colors and flavors. Baby greens are also relatively easy to grow, though unlike most microgreens, may require some fertilizer to reach the ideal size and quality.

Microgreens

Microgreens can be grown from just about any seed, but not all plants make good microgreens. The determination of what makes a good microgreen is the hardiness and taste of the cotyledons (first leaf-like structures). Lettuce, for example, is too delicate. Cantaloupe is not a good microgreen, because the cotyledons do not taste good. However, some plants whose greens are not often consumed, such as carrots, make excellent microgreens.

Common choices for microgreens are radishes, arugula, red beets, red radishes, cilantro, basil, green peas, popcorn, red cabbage, mustards, broccoli, dill, sunflower and basil. Similar to their mature versions, microgreens add a subtler flavor and texture to food. Radish microgreens can be spicier than full-grown radishes, while red cabbage microgreens can be sweeter.

Planting

Microgreens are grown in soil or preferably soilless mixtures (such as a peat moss-based mix with vermiculite or perlite) and usually are ready to harvest in two weeks.

First, fill a sterile, shallow tray that has drainage holes in it with about ½ inch to 1 inch of soilless seed-starting mix or premium potting soil. Water the soil so that it is damp but not soaking through the container.

Next, broadcast seeds or plant in rows. Gently press into the medium. Seed heavily (closely together) to the point of overcrowding to make efficient use of space. Some seeds benefit from having a thin layer of medium placed on top but others do not need it. Some harder seeds, like beets, will germinate more easily if they are soaked in water before sowing. Some seeds will germinate unevenly when covered with soil. It is easiest to sow only one cultivar in a tray; however, if variety is sought in a limited space, plant cultivars that germinate and reach the harvest stage in the same amount of time.

Lastly, water lightly over seeds. A small towel is recommended to cover the seeds. This keeps the soil warm and the seeds healthier, as it blocks the light. If the soil needs moisture, mist water lightly on top until seeds germinate. Usually within three or four days, the seeds will start to sprout. Then, remove the towel and place the tray under bright lights, preferably grow lights or fluorescent lights, for about six to eight hours a day.



Watering

Once seeds have emerged, microgreens need to be properly watered. They prefer to be watered from the bottom of the tray – have a second small tray underneath the actual microgreen tray. When the soil feels dry or the greens start to droop (usually every other day), fill the second tray with 1 inch of water and let the microgreens seed tray sit in it for a few minutes.

If you must water from the top, do so gently with a misting system to avoid damage or excess water. Be aware that overhead watering can encourage disease development. Microgreens also need some air flow and low humidity.

If mold develops on the soil, the microgreens may be getting too much water or not enough air flow or the humidity could be too high. If mold persists after adjustments are made to water, air flow and humidity, dispose of the tray.



Harvesting

The first leaf-like structures on a seedling are called the cotyledons. There are one or two cotyledons on each seedling. Their shape is not usually the same as the mature plant leaves. When the first leaf after the cotyledons emerges, the microgreens can be harvested.

Harvest microgreens when they are approximately 1.5 to 2.5 inches tall. Use a sanitized pair of scissors to cut the seedling's stem at the soil line or slightly above so that the seedling has the seed leaves and a few true leaves. The seedlings are cut lower than the growing point, so they do not regrow.

Microgreens harvest typically takes 7 to 21 days, depending on the cultivar. Gently scoop the harvest with cleanly washed hands and place into a clean plastic container. Immediately refrigerate for up to a few weeks. Eat as soon as possible to avoid bacterial contamination.

WVU is an EEO/Affirmative Action Employer. Underrepresented class members are encouraged to apply. This includes: minorities, females, individuals with disabilities and veterans.

In accordance with Federal law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, disability, and reprisal or retaliation for prior civil rights activity. (Not all prohibited bases apply to all programs).

The WVU Board of Governors is the governing body of WVU. The Higher Education Policy Commission in West Virginia is responsible for developing, establishing and overseeing the implementation of public four-year colleges and universities.

Reasonable accommodations will be made to provide this content in alternate formats upon request. Contact the WVU Extension Service Office of Communications at 304-293-4222.

FCD19-121