



Microgreens

Microgreens are edible seedlings, harvested from the cotyledon stage to the few-true-leaf stage of growth. While some innovative chefs began using them in the 1980s, micros took a few decades to catch on in many areas. More recently, their popularity has surged among commercial as well as home growers.

THE BENEFITS OF MICROGREENS

FOR THE GROWER

- Year-round production
- Short cropping times
- Minimal space requirements

Micros can be grown to generate income in a small space, and at any time of year propagation space is otherwise unoccupied. This high-value product makes the most of a small footprint. Off-season production can be used to establish markets and determine whether investing in space specifically for microgreens production is worthwhile. Year-round production can be equally useful for providing steady cash flow or keeping a foot in the door with buyers.

FOR THE CONSUMER

One key benefit to the consumer is the instantaneous boost microgreens give to the nutritional value of a meal or snack. They are rich in phytonutrients and other health-promoting compounds, so a little goes a long way.



Growing

OVERALL PLANNING CONSIDERATIONS



To view our supplies for microgreens production, visit johnnyseeds.com/microgreens-supplies

For more in-depth growing information, visit johnnyseeds.com/microgreens-library

For a grower thinking about getting into microgreens, here are some decisions that are best to weigh up front:

- What quantities will your markets demand?
- How much space will that require to meet?
- Will you produce single components, mixes, or both?
- What is your packaging and delivery strategy?
- What sources will you tap for trays, growing media, and other supplies?
- What time and labor constraints do you foresee for planting, harvesting, and packing?



CULTURAL METHODS

Grow in a greenhouse or protected area, either in potting mix or a hydroponic system.

PLANTING MEDIA

Many substrate options are available for growing microgreens hydroponically, including standard growing mixes and various nonwoven mats made from materials like hemp, jute, or geotextiles. These mats are often available in sizes to fit 1020 trays or rolls you cut to fit your growing system. If using a mix, it is best to choose a sterile soilless mix designed for germination and growing seedlings. Note that any mix that contains compost or soil may increase the risk of soilborne disease.

SEEDING & SEEDING DENSITY

The desired size of the finished product is a primary factor affecting the amount of seed to use. Microgreens grown to the cotyledon stage can be planted more densely, whereas those grown to the true-leaf stage should be seeded less densely, as they will grow larger and require more fertility, time, and space. (For specific recommendations, refer to our Tech Sheets at johnnyseeds.com/microgreens-library.)

Broadcast the seeds evenly to distribute them at your preferred seeding density. You can add a thin layer of vermiculite or soilless mix on top of the seeds to conserve moisture, or cover with an inverted tray until seeds start to germinate.

Using shallow-sided trays for production can be helpful for easier harvesting.

DAYS TO HARVEST

Different varieties can have widely differing days to harvest, with some fast-growing varieties ready in as little as seven days and slower-growing varieties taking a few weeks. To aid in production, we have divided our line of microgreens into two groups — slow- and fast-growing varieties — based on average days to harvest for each variety. To produce a mix, plant the varieties sequentially according to average days to maturity and harvest concurrently.

One way to simplify production is to plant one of Johnny's carefully curated mixes, formulated to diversify color and leaf shape while maintaining similar days to maturity for uniform harvest times: Mild, Spicy, Confetti, Kalefetti, or Rainbow Sprinkles Micro Mix.

WATERING & FERTILITY

- Water gently, so as not to disturb seeds. Either top or bottom-water depending upon your growing system. If top-watering, you can use a mister, gentle nozzle, or spray bottle. Bottom-watering options can include leakproof trays for 1020 flats, ebb-and-flow benches or floors, or other types of hydroponic systems.
- For growing media that hold some fertility, such as germination mix, plain water is usually best. Watering with a dilute fertilizer solution is appropriate for media with no inherent nutrient value, or for slow-growing species that might exhaust fertility before reaching harvest stage.

TEMPERATURE

- Microgreens can be germinated on heat mats, in germination chambers, or on greenhouse benches.
- Ideal soil temperature for germination and growth is dependent on the specific need of each variety, with different considerations for heat-loving crops like basil than for cooler-loving brassicas. Optimal ambient temperatures are variety-specific, but 65–75°F/18–24°C° is generally a favorable range. Temperatures above 75°F can increase disease pressure and inhibit germination in some varieties.
- Moderate nighttime dips are acceptable, but steady, higher temperatures encourage full-speed production.

AIR CIRCULATION

Because they are planted so densely, microgreens can be prone to disorders associated with poor air circulation and saturated media, such as damping off. To avoid this:

- Use clean media and water sources.
- Use appropriate seeding density.
- Ensure air movement with horizontal airflow fans.

LIGHTING

Consider using supplemental lighting in any environment where natural light is insufficient. Supplemental lighting can also shave time from seed to harvest stage, up to 20% or more.

Harvesting



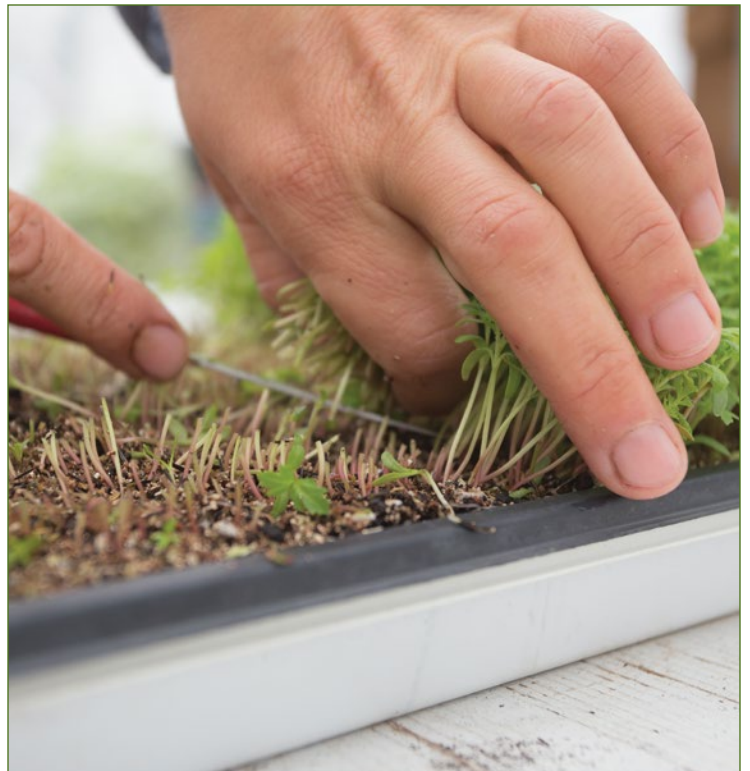
HARVEST METHOD

Microgreens can either be sold as a live product or cut and sold bagged or in clamshells. Selling live product in trays can save labor and extend shelf-life. If using mats, choose flats of the desired size and cut the growing medium itself to the desired size for packaging. We now offer 5" x 5" hemp mats and corresponding inserts that fit 8 to a 1020 tray, so you can mix, match, and market a selection of smaller quantities to customers.

For loose microgreens, one-cut harvesting is standard practice. Because much of their weight is in the stem, microgreens sold by weight are usually cut with scissors or a sharp knife as close to the stem base as possible without getting the medium in the finished product. While many growers do not wash their finished microgreens, some do to remove growing media and seed coats, lower core temperature, or mix different components together. Dry thoroughly before packaging and refrigerating for maximum shelf life.

YIELD

Crop, variety, and size at harvest are all factors that influence yield. Within each crop family, larger-seeded crops tend to yield a higher volume faster than smaller-seeded crops, with variation between varieties as well.



Marketing

EVALUATING MARKETS

Check with chefs in your area to scout demand. Microgreens are being sold in some farmers' markets, natural food stores, and many grocery stores now as well. Since they command a high price per pound and are not a staple in every home kitchen, they tend to be regarded as a specialty item, but this perception is evolving. The retail demand for micros has been strongest in more upscale markets but consumer exposure continues to increase.

DEMAND

If you live in an area where there is not much competition on microgreens, you may do well by growing a fairly standard blend. A good place to start would be to talk with wholesalers in your area, to find out if they are dealing in microgreens and if so, what they have demand for. They may even have price lists available, telling you the types of micros they are buying and what prices they are paying. Even in areas with a lot of competition for the microgreens market, you may be able to create demand for your product by providing custom blends or unique products.

PACKAGING & DELIVERY

Living microgreens can be sold in the trays in which they are grown or in clamshells to preserve their dimensions and keep them from getting crushed. Microgreens sold loose by weight can be put in clamshells or bagged. Bags tend to be a more economical option than clamshells.

Refrigeration is important, as microgreens are highly perishable. If you are going to retail microgreens, it may be necessary to take a cooler or another kind of refrigeration to the market to ensure premium quality and appearance.

PRICING

To succeed long-term, the microgreens producer must cover their costs of production (materials, labor, overhead) and set their pricing with an adequate profit margin. Growers commonly sell microgreens by unit price per tray, clamshell, or bag, rather than selling by weight. Research prices in your own markets routinely, as the figures can vary and change. They will differ between regions with level of interest and market saturation, as well as between heavier and faster-growing varieties and lighter and slow-growing varieties.

PROFITABILITY

The major factors affecting the profitability of microgreens include:

- Materials, including seed quantity
- Time to harvest
- Labor
- Harvest yield
- Price and market demand

These factors vary widely depending on your production model, growing conditions, and the varieties grown. With practice and good recordkeeping, growers can become adept at approximating the quantity to plant to meet market demand, how long a particular variety will take to reach harvestable size, and how much that quantity of seed will yield at harvest.



ATTRIBUTES

COLOR

A few microgreens sprinkled on a finished dish as a garnish can add considerable plate appeal — one reason they're so popular with gourmet chefs and cooks. The dark-red-leaved varieties are particularly prized for this, as the red stands out against the majority of leaves that are green.



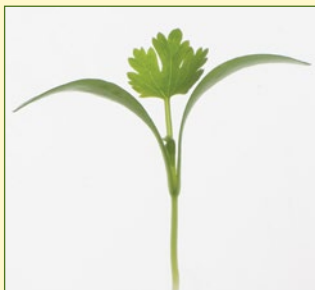
TEXTURE

Interesting leaf shapes add to the visual appeal as well as the loft of microgreens mixes. Loft is important because it gives the product volume. Restaurateurs like mixes with loft; they appear more voluminous and less weight can be used to achieve the desired effect.



FLAVOR

Microgreens can be used to top an entrée, soup, salad, cocktail, or even dessert with a fresh burst of flavor and visual appeal. The flavor of most microgreens is a milder version of the flavor of the mature crop, although some varieties are more intensely flavored.



Some microgreens species are strong in one particular attribute, and some offer all three. Whatever the attributes of the varieties you are growing, make sure your customers know what they are.