

About Lettuce

Lettuce needs little introduction. Grown for its luscious leaves, there's a cornucopia of both hearting and loose-leaf varieties to explore. Lettuces that form dense heads for harvesting whole include creamy butterhead types, upright romaine and cos lettuces, and the classic, crunchy iceberg. Looseleaf lettuces can be harvested whole or a few leaves at a time, 'cut-and-come-again'-style. Choose from the classic salad bowl lettuce, handsome oakleaf types, or any number of other colorful leaves that'll brighten vegetable beds and ornamental borders alike.

Lettuce is a cool-season crop growing well in most regions in the spring and fall. This crop is perfect for beginners; it's easily sown by seed directly in the soil as soon as the ground can be worked. Because lettuce grows quickly, the best approach is to plant a small amount of seeds at a time, staggering the plantings.

Lettuces are a great leafy green because they grow quickly, produce for a long time, and are not very demanding if you keep the plants sufficiently watered. Plus, lettuce grows great in raised beds, making it ideal for small spaces. Lettuces are perfect for containers, which can be placed on decks, patios, balconies, and porches.

Planting

Lettuce prefers a location with 5 to 6 hours of sun, but can benefit from afternoon shade when temperatures soar. Soil should be loose,

well-draining, and moist but not soggy. In the weeks prior to planting, amend with plenty of compost for added fertility.

Or grow lettuces in pots or tubs of potting soil. Lettuce prefers a bright, open position with good air circulation to promote strong, disease-free growth.

Lettuce is a cool-season crop, so in hot climates, you may get better results growing it in a cooler, shadier spot, especially as the young plants start out. Either way, lettuces don't take long to reach maturity, which makes them an excellent choice for growing in between slower-to-establish crops such as corn or leeks.

When to Plant Lettuce

- Soil temperatures between 45°F and 65°F (7°C and 18°C) are ideal. Cold-adapted varieties can survive much lower temperatures.
- Make the earliest sowings under cover from late winter to grow on in greenhouse or hoop house beds for a super-early harvest. Then, from early spring, it's time to sow for growing outside.
- Direct sowing is recommended. Sow seeds in the ground 2 to 4 weeks before your last spring frost date or as soon as the ground can be worked.
- Or, to get a head start, start seeds indoors about 1 month before your last spring frost date. Harden off seedlings for 3 days to a week before setting outdoors.
- If you are buying transplants (small plants) from a garden center or nursery, you may plant between 2 weeks before your last spring frost to 2 weeks after your last spring frost.

- In most regions, it's possible to plant another crop of lettuce in the fall or even early winter. See our [Planting Calendar](#) for planting dates.
 - **Tip:** To plant a fall crop, create cool soil in late August by moistening the ground and covering it with a bale of straw. A week later, the soil under the bale will be about 10°F (6°C) cooler than the rest of the garden. Sow a three-foot row of lettuce seeds every couple of weeks—rotate the straw bale around the garden.

How to Plant Lettuce

- Sowings may be made directly into prepared soil or into module trays of multipurpose potting soil. To sow directly, remove any weeds, then rake the soil level to a fine, crumbly texture. Mark out shallow drills, 8 to 12 inches or 20 to 30cm apart, using a string line as a guide if this helps. Then, sow the tiny seeds in clusters—a pinch of seeds every four inches or 10cm. Backfill the seed drills, label with the variety and water.
- Since the seed is so small, a well-tilled seedbed is essential. Stones and large clods of dirt will inhibit germination.
- Plant seeds 1/8 to 1/4 of an inch deep. Lettuce seeds need light to germinate, so don't sow them too deep.
- Seeds may be sown in single rows or broadcast for wide-row planting (loose-leaf varieties are best for this). When broadcasting, thin 1- to 2-inch tall seedlings for the proper spacing.
- Spacing between plants depends on the variety:
 - *Loose-leaf lettuce*: Plant or thin to 4 inches apart.
 - *Romaine (cos) and butterhead (loose-head, Bibb, Boston) lettuce*: Plant or thin to 8 inches apart.
 - *Crisphead (iceberg) lettuce*: Plant or thin to 16 inches apart.
- Set rows of lettuce 12 to 15 inches apart.
- Sow additional seeds every 2 weeks for a continuous harvest.

- Consider planting rows of chives or garlic between your lettuce to control aphids. They act as “barrier plants” for the lettuce.
- Water thoroughly with a mist nozzle at the time of transplanting or seeding.

For a fall crop, cool the soil in August by moistening it and covering it with a bale of straw. One week later, the soil under the bale should be a few degrees cooler than the rest of the garden and ready to be sown with a 2-foot row of lettuce. Repeat the process every couple of weeks by rotating the straw bale around the garden. As autumn temperatures decline, seed as usual for a fall harvest.

Growing

You can help transplants along at the start of the season by covering them with a temporary cloche made from bottomless milk cartons or plastic bottles. These will keep the chill off your seedlings just enough to help them acclimatize. Newly planted lettuces may also be helped with a simple row cover or fleece.

- Fertilize 3 weeks after transplanting with organic alfalfa meal or another slow-release fertilizer to provide a steady stream of nitrogen.
- Make sure the soil remains moist but not overly wet. It should drain well. Overwatering leads to disease or soft growth.
- Lettuce will tell you when it needs water. Just look at it. If the leaves are wilting, sprinkle them anytime, even in the heat of the day, to cool them off and slow down the transpiration rate. Using row covers can also help to keep lettuce from drying out in the sun.

- An organic mulch will help conserve moisture, suppress weeds, and keep soil temperatures cool throughout the warmer months.
- Weed by hand if necessary, but be careful of damaging your lettuce plants' shallow roots.

Growing Lettuce in Containers

When you grow salad greens in containers, it can be different every day, as there are dozens of lettuce varieties along with other leafy edibles. What's more, greens can grow in as little as 6 inches of soil! Some greens can be harvested in as little as a month's time, and cut-and-come-again plants keep producing, often for weeks! In fact, the hardest part of "salad bowl gardening" may be deciding what to grow.

Choose a container that is 6 to 12 inches deep; a diameter of 18 inches is recommended. (Greater depth allows more room for roots and keeps the soil from drying out.) Moisten (do not soak) a portion of good-quality potting mix that is enough to fill your container to within an inch of the top. Direct-sow seeds densely—about 1/2 inch apart—on the prepared mix. Then cover with about 1/4 inch of dry potting mix, sprinkling it around. Tamp, or press, the seeds gently (a flat surface is recommended) so that they make contact with the soil and to keep them from blowing away. Water gently (a handheld pump container is advised instead of a hose, the water force from which can displace the cover soil and seeds). Keep the seedbed moist. (You can assess the wetness of the container by lifting it, as it will be lighter when dry.)

When seedlings are 4 to 6 inches tall, apply a balanced fertilizer at half strength. Continue watering as needed. Apply diluted fertilizer every 2 weeks, or per package directions. Protect greens from afternoon sun, if necessary and especially in summer, with shade cloth or row cover or by

moving containers into shade. Plant more seeds in other containers every 2 to 4 weeks to maintain a fresh crop.

How to Delay Bolting

- Bolting is a common problem caused by warm temperatures (over 70°F/20°C) or changes in day length. When a lettuce plant bolts, it starts to produce a central stem and seed stalk, and leaves take on a bitter flavor.
- To delay bolting, cover plants with a shade cloth so that they get filtered light. Be sure to maintain watering throughout the warmest parts of the growing season, too.
- Planning your garden so that lettuce will be in the shade of taller plants, such as tomatoes or sweet corn, may reduce bolting in the heat of the summer.
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Varieties

Some of our favorite varieties include:

- **Crisphead:** 'Great Lakes', 'Ithaca', 'King Crown', 'Mission', 'Summertime'
- **Romaine (Cos)/Butterhead:** 'Burpee Bibb', 'Cosmo Savoy', 'Green Towers', 'Little Gem', 'Paris White Cos', 'Parris Island', 'Valmaine'
- **Loose-Leaf:** 'Black Seeded Simpson', 'Green Ice', 'Ibis', 'Lollo Rossa', 'Oak Leaf', 'Prizehead', 'Salad Bowl', 'Slobolt'
- **Red Leaf:** 'New Red Fire', 'Red Sails', 'Ruby Red' (Not recommended for hot weather areas; the red pigment absorbs more heat.)

...But there are so many more types of lettuce to explore! What are your favorites?

Harvesting

Harvest lettuce in the morning when full-size but young and tender. Check your garden every day for ready-to-harvest leaves; mature lettuce gets bitter and woody and will go bad quickly.

- Before maturity, you can harvest leaf lettuce by simply removing the outer leaves so that the center leaves can continue to grow.
- Harvest butterhead, romaine, and loose-leaf types by removing the outer leaves, digging up the whole plant, or cutting the plant about an inch above the soil surface. A second harvest is often possible when using the first or third methods.
- Enjoy your lettuces over a longer period by cutting just a few leaves from each plant at a time. Called cut-and-come-again harvesting, harvesting like this not only prolongs the cropping period—so individual plants crop for anywhere up to two months—it will also give you many more leaves in total. Cut or twist the leaves from the stem, taking care not to damage it. Leave the central leaves untouched to grow on for the next cut.
- Crisphead lettuce is picked when the center is firm.

How to Store Lettuce

- Store lettuce in a loose plastic bag in the refrigerator for up to 10 days.
- When ready to use, put the harvested lettuce in cold water for a few minutes. Then, place in a salad spinner or towel. Spin the spinner to remove water from the lettuce.
- Lettuce leaves wilted? Put the leaves in a bowl of cold water with ice cubes and soak for about 15 minutes.

Pests/Diseases

Lettuce Pests and Diseases

Pest/Disease	Type	Symptoms	Control/Prevention
Aphids	Insect	Misshapen/yellow leaves; sticky “honeydew” (excrement); sooty, black mold	Grow companion plants; knock off with water spray; apply insecticidal soap; put banana or orange peels around plants; wipe leaves with a 1 to 2 percent solution of dish soap (no additives) and water every 2 to 3 days for 2 weeks; add native plants to invite beneficial insects

Cutworms	Insect	Wilting; severed stems of seedlings and transplants just above or below soil line; whole seedlings disappear	Handpick; in spring before planting, cultivate soil to reduce larvae; wrap a 4-inch-wide collar made from cardboard or newspaper around each stem, sinking 2 inches into soil; weed; use row covers; destroy crop residue
Earwigs	Insect	Many small holes in leaves/stems	Create an earwig trap by placing a tuna can filled with 1/2 inch of fish oil and sinking it into the soil such that edge is slightly above ground level; remove plant debris
Lettuce mosaic virus	Virus	Leaves may show green mottling or brown spots and can be distorted, blistered, curled backward; plants stunted; heads may be distorted or fail to form	Destroy infected plants; choose resistant varieties and certified virus-free seed; use row covers; disinfect garden tools; weed; control aphids

Powdery mildew	Fungus	White spots on upper leaf surfaces expand to flour-like coating over entire leaves; foliage may yellow/die; distortion/stunting of leaves	Destroy infected leaves on plants; choose resistant varieties; plant in full sun, if possible; ensure good air circulation; spray plants with 1 teaspoon baking soda dissolved in 1 quart water; destroy crop residue
Slugs/snails	Mollusk	Irregular holes in leaves; slimy secretion on plants/soil; seedlings “disappear”	Handpick; avoid thick bark mulch; use copper plant collars; avoid overhead watering; lay boards on soil in evening, and in morning dispose of “hiding” pests in hot, soapy water; drown in deep container filled with 1/2 inch of beer, or sugar water and yeast, and sunk so that top edge is slightly above ground; apply 1-inch-wide strip of food-grade diatomaceous earth as barrier

White mold	Fungus	Pale gray, “water-soaked” areas on stems, leaves, and other plant parts that enlarge and develop white, cottony growth, later with black particles; bleached areas; plants wilt/collapse	Destroy infected plants; ensure good air circulation; water in morning; weed; destroy crop residue; rotating crops on 5-year or longer cycle may help
Whiteflies	Insect	Sticky “honeydew” (excrement); sooty, black mold; yellow/silver areas on leaves; wilted/stunted plants; distortion; adults fly if disturbed; some species transmit viruses	Remove infested leaves/plants; use handheld vacuum to remove pests; spray water on leaf undersides in morning/evening to knock off pests; monitor adults with yellow sticky traps; spray with insecticidal soap; invite beneficial insects and hummingbirds with native plants; weed diligently; use reflective mulch

Also keep an eye out for mammalian pests such as rabbits and groundhogs!

Frequently Asked Questions

What is hydroponic gardening?

Hydroponic gardening is a soilless cultivation method that uses nutrient-rich water to grow plants. This approach provides a controlled environment that promotes faster growth and higher yields compared to traditional soil gardening.

What are the benefits of growing hydroponic lettuce?

Growing hydroponic lettuce offers several advantages, including space efficiency, water conservation, faster growth rates, reduced pest issues, and the ability to produce lettuce year-round for fresh, crisp salads.

What types of lettuce are good for hydroponics?

Leaf lettuce varieties, such as red leaf, green leaf, and oak leaf, are excellent for hydroponics due to their quick maturation (30-45 days). Romaine and butterhead varieties are also suitable, maturing in 60-75 days and 50-60 days, respectively.

What equipment do I need for hydroponic lettuce cultivation?

Essential equipment for hydroponic lettuce includes a hydroponic system (e.g., DWC, NFT, Ebb and Flow), grow lights, a nutrient solution, pH testing kit, water pump, and air stones for oxygenation.

How do I set up a hydroponic system for lettuce?

To set up a hydroponic system, choose a suitable method, gather necessary equipment, and create an optimal environment with proper lighting and temperature. Prepare the grow medium, then plant seeds or seedlings according to the system's requirements.

When should I harvest hydroponic lettuce?

Harvest hydroponic lettuce when leaves reach 6 to 8 inches in height, usually 30 to 75 days after planting. Check for leaf color and firmness to ensure optimal flavor and texture at the time of harvest.

How should I harvest hydroponic lettuce?

Use clean, sharp scissors to harvest hydroponic lettuce. For cut-and-come-again varieties, trim outer leaves, and store harvested lettuce immediately in a cool environment to maintain freshness.

.When to Harvest

Harvest your hydroponic lettuce when the leaves reach a height of 6 to 8 inches, typically between 30 to 75 days after planting, depending on the variety. Monitoring leaf color and firmness is crucial. Look for vibrant green color and firm leaves, indicating readiness. For cut-and-come-again varieties, you can start harvesting when outer leaves reach size while allowing inner leaves to continue growing.

Techniques for Harvesting

Use clean, sharp scissors or garden shears for an effective and efficient harvest. Follow these techniques:

1. **Gather Supplies:** Have clean scissors or shears on hand and a container for collected lettuce leaves. Make sure these tools are sterilized to prevent contamination.
2. **Identify Harvesting Points:** Target outer leaves for cut-and-come-again varieties. For head types, cut the entire head at the base when it's mature.
3. **Cut Leaves:** Gently cut leaves just above the base. Avoid tearing leaves to minimize damage and stress to the plant.
4. **Store Immediately:** Place harvested lettuce in a shady spot or cooler to preserve freshness, and use it as soon as possible for the best taste.
5. **Maintain Growth:** Monitor the remaining plants for new leaf growth. Continue to care for them with proper light, nutrients, and water. Regular harvesting encourages bushier, more productive plants.

Planting Seeds and Seedlings

1. **Select Seeds:** Choose appropriate lettuce seeds based on your taste. Leaf varieties mature quickly and are ideal for beginners.
2. **Prepare Grow Medium:** Use a sterile growing medium like rock wool or coconut coir. Place the medium in net pots for easy handling.
3. **Sow Seeds:** Plant 2-3 seeds per pot to ensure a high germination rate. Cover lightly with the growing medium, and mist with water.

4. **Germinate Seeds:** Keep the pots in a humid environment until seeds sprout. Maintain moisture but avoid overwatering, which can lead to rot.
5. **Monitor Water Levels:** Check the water level in your reservoir regularly. Refill it with nutrient solution as needed to keep it adequate.
6. **Adjust Nutrient Solution:** Change the nutrient solution every two weeks to prevent nutrient depletion. Regularly test pH and adjust as necessary.
7. **Inspect Plants:** Look for signs of pests or diseases. Address issues promptly to maintain plant health. Natural remedies or insecticidal soap can help.
8. **Prune and Harvest:** Trim excess leaves to encourage growth and increase air circulation. Harvest outer leaves when they reach an appropriate size, allowing the center to continue producing.

By following these steps, you can cultivate fresh and crisp hydroponic lettuce efficiently in your chosen environment.

Growing hydroponic lettuce is straightforward when you follow specific steps. The process includes preparing your setup, planting, and maintaining your plants.

Preparing Your Hydroponic Setup

1. **Choose Your System:** Decide on a hydroponic system that fits your space. Options include Deep Water Culture (DWC), Nutrient Film Technique (NFT), or Ebb and Flow. Each system has unique features and requirements.

2. **Gather Equipment:** Collect essential items like a water reservoir, nutrient solution, pH meter, air pump, and net pots. Make sure to have grow lights if you're growing indoors.
 3. **Set up the Environment:** Ensure your growing area has adequate lighting, temperature control, and ventilation. Your lettuce prefers a temperature range of 60°F to 70°F.
 4. **Mix Nutrient Solution:** Follow the instructions on your nutrient solution package. Maintain a 5.5 to 6.5 pH level for optimal nutrient absorption.
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Essential Equipment for Hydroponic Lettuce

To grow hydroponic lettuce successfully, you'll need specific equipment. Having the right tools makes the process easier and more efficient.

Hydroponic System Options

1. **Deep Water Culture (DWC):** In this system, the roots of your lettuce plants sit directly in nutrient-rich water. An air pump provides oxygen, supporting rapid growth. This method works well for faster-growing varieties.
2. **Nutrient Film Technique (NFT):** NFT involves a thin film of nutrient solution flowing over the roots in a sloped channel. This method ensures that plants receive constant nutrients and oxygen while minimizing water usage.
3. **Ebb and Flow (Flood and Drain):** This system periodically floods the plant roots with nutrient solution, then drains it back

into a reservoir. This cycle enhances oxygen access and prevents root rot.

4. **Aeroponics:** In this advanced option, the roots hang in the air and receive a fine mist of nutrient solution. Aeroponics supports strong growth and is space-efficient.
 5. **Wicking System:** This passive system uses capillary action to draw nutrient solution to the roots. It's simple and perfect for beginners but may not yield as quickly as other methods.
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Preparing Your Garden

Preparing your garden for lettuce planting sets the stage for healthy growth and bountiful harvests. Focus on location and soil to establish a thriving environment for your plants.

Choosing the Right Location

Choose a location that receives full sun for at least six hours daily. Lettuce grows best in bright light, enhancing flavor and preventing leggy plants. Avoid spots with heavy shade from trees or buildings. Select a well-drained area to prevent waterlogging, which can lead to root rot. If you have limited space, use containers to set your lettuce close to sunny windows or patios.

Soil Requirements

Soil plays a crucial role in lettuce growth. Aim for a sandy loam or loamy soil rich in organic matter. Test the soil pH; lettuce prefers a pH between

6.0 and 7.0. Amend the soil with compost or well-rotted manure to boost nutrients. Ensure the soil drains well but retains moisture, as lettuce thrives in consistently damp conditions. Before planting, work the soil to a depth of about 12 inches to create a loose, friable texture.

Planting Lettuce Seeds

Planting lettuce seeds involves careful timing and proper techniques for a successful harvest. Follow these guidelines to ensure robust growth and great-tasting leaves.

When to Plant

Lettuce thrives in cool temperatures. You can plant lettuce seeds indoors 4 to 6 weeks before the last frost date. If sowing outside, do so as soon as the soil is workable in early spring. For a continuous harvest, schedule additional plantings every 2 to 3 weeks until early summer. You can also consider a fall planting, typically 8 to 10 weeks prior to the first expected frost. This approach allows for sweet, crisp leaves later in the year.

1. **Select Your Seeds:** Choose varieties suited to your climate and taste preferences. Common types include Iceberg, Romaine, and Leaf lettuce.
2. **Prepare the Soil:** Ensure the soil is moist and well-drained. Use a rake to create a smooth seedbed free of clumps or debris.
3. **Sow the Seeds:** Plant seeds about $\frac{1}{4}$ to $\frac{1}{2}$ inch deep for optimal growth. Space them 12 inches apart in rows to allow easy access. You can also scatter seeds for a more natural look, aiming for a density of about 10 seeds per square foot.

4. **Water Gently:** After sowing, water the area lightly to avoid displacing the seeds. Ensure moisture remains consistent but not soggy during germination, which takes 7 to 14 days.
5. **Thin Seedlings:** Once seedlings reach about 2 to 3 inches in height, thin them to prevent overcrowding. Keep the healthiest plants, spacing them about 6 to 12 inches apart based on their variety.
6. **Mulch:** Apply a layer of organic mulch around the seedlings to retain moisture and suppress weeds.

Caring for Your Lettuce

Caring for your lettuce ensures healthy growth and a delicious harvest. Focus on watering practices and pest management to achieve the best results.

Watering Practices

Water your lettuce consistently to keep the soil moist but not soggy. Aim for about 1 to 1.5 inches of water weekly, adjusting for weather conditions. If rain is insufficient, use a soaker hose or drip irrigation to deliver moisture directly to the roots. Water early in the morning, allowing the leaves to dry before evening to reduce the risk of disease. Avoid overhead watering, as it can promote leaf rot and fungal issues.

Pest Management

Manage pests quickly to prevent damage to your lettuce. Inspect your plants regularly for common pests like aphids, slugs, and caterpillars. Hand-picking pests or using yellow sticky traps can help control infestations. Introduce beneficial insects, like ladybugs or lacewings, to

your garden to keep pest populations in check. If needed, apply organic pesticides, such as neem oil or insecticidal soap, targeting affected areas while being mindful of beneficial insects nearby. Always follow application instructions for safety and effectiveness.

Signs of Readiness

Look for key indicators to determine when your lettuce is ready for harvest.

- **Leaf Size:** Heads should reach a size that feels suitable for picking, usually about 6 to 8 inches tall for varieties like Romaine.
- **Leaf Color:** Leaves should exhibit vibrant green hues, indicating freshness.
- **Texture:** Leaves should feel crisp and firm rather than wilted or limp.
- **Growth Shape:** Full heads should appear tight and compact, especially for types like Iceberg.

Check your plants daily as they mature, since timing can vary based on specific conditions like temperature and sunlight.

Proper Harvesting Techniques

Utilize effective techniques to harvest your lettuce without damaging the plants.

- **Harvesting by Hand:** Use clean, sharp scissors or garden shears to cut the leaves or heads. Avoid pulling them out by hand to prevent root damage.

- **Cutting Techniques:** For leaf lettuce, snip the outer leaves about 1 inch above the soil level, leaving the inner leaves to continue growing. For head lettuce, cut at the base to remove the entire head.
- **Timing:** Harvest during cooler parts of the day, ideally early morning or late afternoon. This preserves moisture and enhances flavor.
- **Cleanliness:** Ensure your tools are sterilized before use. This helps prevent disease.
- **Immediate Use:** After harvesting, rinse lettuce leaves under cool water and store them in a damp cloth or airtight container in your fridge for fresh use.

Frequently Asked Questions

What are the benefits of growing lettuce at home?

Growing lettuce at home offers fresh, flavorful greens that enhance meals. It also provides a rewarding gardening experience and adds aesthetic value to your living space. Plus, home-grown lettuce is free from pesticides and can be picked just before use.

Which lettuce varieties are easiest for beginners to grow?

Beginners can easily grow Leaf lettuce due to its loose structure and quick growth. Romaine is also a good choice, as it thrives in various conditions. Iceberg requires slightly more care but is manageable for novice gardeners.

How should I prepare my garden for planting lettuce?

Choose a sunny spot that receives at least six hours of sunlight daily. Ensure the soil is well-drained, ideally sandy loam or loamy, with a pH of 6.0 to 7.0. Amending the soil with compost or well-rotted manure enhances growth.

When is the best time to plant lettuce?

Plant lettuce seeds indoors 4 to 6 weeks before the last frost or sow them outdoors in early spring when the soil is workable. For a continuous harvest, sow additional seeds every 2 to 3 weeks until early summer.

How often should I water my lettuce plants?

Lettuce needs about 1 to 1.5 inches of water weekly. It's best to water early in the morning and avoid overhead watering to minimize the risk of disease. Adjust your watering schedule based on weather conditions.

What are common pests that affect lettuce, and how can I manage them?

Common pests include aphids, slugs, and caterpillars. Regularly inspect your plants and use hand-picking, yellow sticky traps, or introduce beneficial insects for control. If needed, apply organic pesticides carefully to protect beneficial species.

How do I know when to harvest my lettuce?

Harvest when leaves are a good size, vibrant in color, and firm in texture. For head lettuces, the heads should feel solid. Use clean scissors to cut leaves during cooler times of the day for the best flavor and texture.

What is the best way to store harvested lettuce?

Rinse the harvested lettuce gently and pat it dry with a paper towel. Store it in a clean, dry container in the refrigerator. For longer freshness, add a damp paper towel to the container to maintain moisture without causing rot.

Disease Management

Five Common Lettuce Diseases

1. **Bacterial Leaf Spot**
2. **Bottom Rot**
3. **Damping Off**
4. **Downy Mildew**
5. **Lettuce Mosaic Virus**

1. Bacterial Leaf Spot

The main symptom of bacterial leaf spot is black lesions on the outer leaves, often surrounded by yellow discoloration known as “halos.” These typically appear on mature heads rather than on younger plants.

The primary causes of this disease are types of bacteria from the *Xanthomonas* and *Pseudomonas* genera.

If you see signs of leaf spot, note that the disease is commonly spread by splashback from watering, and that this can be prevented in part by using **drip irrigation** or watering at the ground level rather than using sprayers or sprinklers.

You'll also want to avoid overwatering, but be aware that rain may still spread the bacteria.

Another way that the bacteria can be introduced into the garden is by planting infected seed.

These types of bacteria have a very long shelf life of up to ten years, so if you've had an outbreak, you should forgo saving seed from infected plants or others grown nearby.

You may be able to kill pathogens that are present on the seed surfaces, even on seed that you've purchased, by soaking seeds in a bleach solution to sterilize them.

Place about a tablespoon of seeds in a container, such as a glass jar, and add one cup of hot but not boiling water, and one tablespoon of chlorine bleach.

Allow the seeds to soak for about 15 minutes, and then rinse with cool water until the smell of bleach is gone.

Note that this treatment will only kill pathogens that are present on the outside surface of the seeds, and bacteria could potentially survive

under the seed coats. After the seeds have been thoroughly rinsed, spread them out and allow them to dry overnight.

Despite your best efforts, infection can still occur, and the bacteria can colonize very quickly in warm, humid conditions. Increasing airflow and allowing the garden bed to dry out a bit can help to stop the spread.

Prior to the onset of disease symptoms, you can spray a commercial copper fungicide on young plants.

This can help to kill bacteria that have survived seed sterilization, or if you've planted from seedlings or store-bought starts that were infected at the time of purchase.



Bonide Copper Fungicide

You can find Bonide Copper Fungicide [available from Arbico Organics](#) in 16- or 32-ounce ready-to-spray bottles.

Copper fungicide should be used sparingly, as overuse can reduce its efficacy.

Any affected leaves should be removed on sight and disposed of in the trash, or far away from other plants or garden soil.

Infected planting beds should not be planted back to back as the bacteria can live in the soil, and in infected organic debris, for as long as a year.

Rotate crops between beds or leave infected soil unplanted if possible, and be sure to remove weeds in the area as well, as the bacteria can be harbored in the roots, even in plants that are not typically hosts.

It's also a good idea to observe any other plants in the garden, as leaf spot can affect many other species, including ornamentals.

2. Bottom Rot

Keeping lettuce leaves away from contact with the soil beneath them will aid in preventing some types of infestation and disease. Pests and soilborne pathogens have easier access to your crops when plants lie against the ground.

Opportunistic fungi from the *Rhizoctonia* genus are extremely common in garden soil, and unfortunately, these thrive in much the same conditions as lettuce does.

It's particularly aggressive when soil temperatures are consistently between about 75 to 80°F.



Photo by Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org, via [CC BY-SA](#).

As heads mature, outer wrapper leaves can come into contact with soil where the fungus is present, and it's very easy for it to begin to colonize on plants.

This fungus can also survive between crops, so if you've had an outbreak, it's best to rotate your planting beds.

Bear in mind, though, that some strains can infect other types of crops – such as [potatoes](#), [onions](#), and even weeds – so it's also important to keep garden beds well weeded between planting.

If your plants have been infected, you'll start to notice a brown or rust-like coloration, often developing into scabby spots, on the midribs.

Eventually, slimy sections will develop that may overtake most of the underside of the head or on the stems.

If left to persist, leaves will wilt and yellow, the rust coloration will change to black, and the slimy texture will dry to a powder as the plant dies.

Another telltale sign of bottom rot is a musky, moldy smell that you'll be able to notice as the fungal damage becomes apparent.

Removing affected leaves may help to stop the spread through the rest of the head, but reinfection can still occur.

As with many types of fungal or bacterial disease that affect the garden, there is no known cure for bottom rot, and prevention is key.

Mounding soil at the time of planting can assist in keeping the leaves of head lettuce in particular from coming into contact with the ground.

A simple, mounded row of four to six inches is enough to elevate heads, and this also makes it easier to prevent leaves from sitting in water that has collected on the ground, where the fungus can also be present.

It's sound advice to rotate crops each season, regardless of whether you've had a disease outbreak. When a fungal infection is present, it can help to till planting beds deeply prior to planting, and after harvest.

Allow tilled soil to remain exposed to air and sunlight, as drying it out can kill some of the fungi present in the soil.

Next, you can treat the soil with fungicide, spraying according to package directions, or you may choose to solarize the soil by laying clear plastic sheeting over the tilled area.

The tarp should remain in place for two to six weeks, allowing the heat of the sun to build up throughout the day. Temperatures will increase under the tarp to a degree that the fungus can not survive.

Alternatively, you can treat the soil in the planting area with a product containing *Trichoderma harzianum*, a beneficial fungus that attaches itself to the plants' roots to prevent disease pathogens from taking hold.



RootShield Biological Fungicide

It's available as RootShield Home and Garden, [from Arbico Organics](#). Note that this product will not treat an existing infection, but will prevent the pathogen from taking hold.

Follow package instructions and apply at planting time, and repeat as recommended.

[Read more about soft rot of lettuce here.](#)

3. Damping Off

You may observe your young seedlings suddenly falling slack against the soil, and note that the stems are brown and wilted, unable to support the plant. In some cases, seedlings may fail to emerge altogether.

As mentioned previously, seedlings in this condition could be accompanied by fungus gnats, which may be your first clue even before plants begin to die off.



Photo by Yuan-Min Shen, Taichung District Agricultural Research and Extension Station, Bugwood.org, via [CC BY-SA](#).

If you see gnats on plant leaves, the soil surface, or floating in the air above the sprouts, it may be too late.

Damping off is caused by fungi that thrives in cool, wet environments such as garden soil. While it most commonly affects seedlings, it has also been known to damage mature plants, sometimes leading to root or crown rot.

Most of the time, pathogens are present in store bought garden soil at the time of purchase. In humid environments, or if soil is kept very wet, the fungi can develop.

This type of fungi can infect most types of seedlings, and not just lettuce, although lettuce seedlings are fairly delicate and can be killed very quickly when infected. More than one variety of fungi can cause this condition, specifically *Fusarium* and *Rhizoctonia* species.

Symptoms of damping off can include the previously mentioned failure of seedlings to emerge; thread-like wilting of stems; yellow or brown cotyledons; presence of fungus gnats; or white, mold-like formations on the surface of soil, sometimes surrounding the base of the seedlings.

Most symptoms will be seen between planting and the growth of the first true leaves.

Planning ahead can be an excellent preventative with regard to damping off, as any tools or pots that have been exposed can potentially spread the fungus to new crops, so it's important to disinfect implements or containers that have been exposed before reusing them.

Rubbing alcohol or bleach can be used to sterilize tools; however, be aware that bleach is corrosive to metal implements.

Always use new potting soil for planting and use heat mats to keep soil warm, as cool, wet soil is a breeding ground for fungi. Temperatures above about 70°F are ideal for control. Use room-temperature water when watering plants as well.

Consider **using a grow lamp** to increase available light, which can not only assist plants in becoming established, but can warm and dry

out soil at the surface level, dissuading gnats and fungi from taking up residence. Good airflow also helps.

Don't add fertilizer to your potting mix, as this just encourages fungi to develop, and won't aid in plant growth until plants have developed their first true leaves.

Sprinkle ground cinnamon on the surface of the soil as this not only deters gnats, but it also acts as a natural fungicide.

Don't transplant too soon if there are no signs of disease. Wait to transplant until your lettuce seedlings have developed a large enough root system to produce their own fungicidal compounds.

This typically takes a few weeks after the seedlings have emerged, and the larger the root system, the better.

If you notice symptoms developing, you can water your plants with a mix of three parts water to one part hydrogen peroxide, which can help to aerate the soil and kill fungi.

If you've caught signs of development of the disease early enough, you can transplant seedlings out of infected soil and into new, clean pots, being sure to follow the above steps for preventative care.

[Learn more about damping off in our guide.](#)

4. Downy Mildew

In cooler environments, or areas with high daytime humidity and low overnight temperatures, you may notice downy mildew growing on your lettuce leaves.

Lettuce that is exposed to long periods of cool, wet temperatures is highly susceptible to this fungus-like infection.

Symptoms of this disease include yellow or brown spots on leaves; wilting; and the development of fluffy mold, typically on the underside of leaves.



Photo by Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org, via [CC BY-SA](#).

It's important to note that downy mildew can visually appear very similar to **powdery mildew**.

However, powdery mildew is caused by fungi, whereas downy mildew is caused by water molds (oomycetes) in the *Peronospora*, *Plasmopara*, and *Bremia* genera. Treating with a fungicide will not correct a downy mildew problem.

Once symptoms of this disease are noticed, it's best to remove affected leaves and destroy them. If a large portion of the head is affected, it's best to dispose of it quickly to prevent the spread from plant to plant, or into the garden soil.

The best treatment is prevention. Plan your garden space to allow adequate distance between plants, as this can help to prevent more than one type of disease.

Plants that don't have enough room can transmit disease and infestation very easily. [Check your seed packet](#) for spacing information.

Avoid watering heavily during periods of cool temperatures, and don't allow water to sit on leaf surfaces. Be sure that loose, low-hanging leaves are not laying against the soil underneath, or pressed tightly against other plants.

If possible, use drip irrigation that allows water to seep directly into the ground rather than wetting the leaves, or water at ground level.

Increase air circulation if possible by using a fan or blower, as this will keep plant surfaces drier and help them to dry more quickly.

Any time disease has affected your garden, it's best to rotate susceptible crops to avoid planting in areas where disease pathogens may still be present.

5. Lettuce Mosaic Virus

Mosaic virus is unfortunately very common in the home garden. It can be spread through infected seed, or transferred from plant to plant by insatiable aphids as they puncture plant leaves to extract fluids.

In lettuce, symptoms of infection include stunting; chlorosis or bleach-like spotting; dull, misshapen leaves; blistering; and ragged leaf margins. In short, lettuce mosaic virus is relatively obvious and easy to spot once you know what to look for.



Photo via Alamy.

The term “mosaic” comes from the yellow-green mottled color of infected leaves. Note, however, that symptoms can look different depending upon your seasonal climate, so you may not see all of the symptoms described here.

In humid climates, discoloration is more common, whereas in cooler, drier climates, you may have less of an issue with the virus altogether.

After detecting initial signs of infection, first and foremost, carefully comb through your plants for the presence of aphids. You can **control them as described in this guide**, and you’ll want to do so posthaste.

Bear in mind that both aphids and mosaic virus can spread across species, so if your lettuce is showing symptoms of either, you'll surely want to check in on neighboring crops. **Spinach**, **peas**, and all **varieties of lettuce** are susceptible.

The *Potyvirus* that causes mosaic virus is typically spread through the use of infected seed, so once the aphids are dealt with, if you started your lettuce from seed, you may want to discard any that remains.

While your lettuce will still be edible even after being infected, you may not get the chance to consume it as the virus can kill crops if it worsens.

Unfortunately, there is no cure for mosaic virus. The only real treatment is prevention.

Be sure to weed planting beds well to avoid having infected weeds spreading through the garden. Never harvest or plant seeds produced by infected plants, and keep a careful watch for aphids, especially if any of the plants in your garden are showing symptoms of the virus.

