

# Lettuce

(*Lactuca saliva*)

<u>Recommended Varieties</u>	<u>Disease Resistance</u>
<b>Butterhead (Boston)</b>	
Buttercrunch	AAS, B
Dark Green Boston	
Summer Bibb	B
Tom Thumb (suitable for containers)	
<b>Cos (Romaine)</b>	
Parris Island	LMV, TB
Valmaine	DM
<b>Crisphead (iceberg)</b>	
(Difficult to grow in home gardens)	
Great Lakes	AAS, TB
Vanguard	LMV
Calmar	TB
Empire	B, TB
<b>Loose Leaf</b>	
Salad Bowl	AAS, B
Oak Leaf	B, H
Green Ice	B
Red Sails (deep red-bronze)	AAS, B
Ruby (red shading)	VAS, H

Lettuce, a cool-season vegetable, is extremely sensitive to high temperatures. If direct seeded during high temperatures, seed dormancy may result. Use transplants that are 3 to 4 weeks old. Time your planting of the crop so it matures during periods of cool temperatures. Several types of lettuce, described below, are commonly grown in home gardens.

Crisphead, also known as 'Iceberg', is the lettuce most widely available as a fresh market type. It has a tightly compacted head with crisp, light-green leaves. Many home gardeners find this type difficult to grow because it requires a long season and some of the most advertised varieties are not heat-resistant and tend to go to seed as soon as temperatures go up. High temperatures during maturity of crisphead types (see below) may result in premature seed stalk development and internal tip burn. Select a slow bolting variety and start seed indoors in late winter or late summer for best results. Transplant in early spring or fall to take advantage of cool weather and mulch well to keep soil temperatures from fluctuating and to hold moisture in. Thin or space crisphead types so the plants are 10 to 12 inches apart. An organic mulch is more suitable than black plastic after soil warms up. Mulching also keeps soil off the leaves, reducing chances of disease from soil-borne organisms.

Butterhead, or Bibb lettuce, is a loose-heading type with dark green leaves that are somewhat thicker than those of iceberg lettuce. Butterheads develop a light yellow, buttery appearance and are very attractive in salads. It may be started indoors for an even longer season. Bibb lettuce will develop bitterness readily if temperatures get too high. Romaine, also known as cos, is a fairly nutritious lettuce that deserves attention. It, too, is relatively easy to grow, forming upright heads with rather wavy, attractive leaves. Thin or space cos types to 6 to 8 inches apart.

Most gardeners who grow lettuce raise the leaf type, either with green or reddish leaves. This type is a fast-growing, long-lasting lettuce used for salads, sandwiches, and in wilted lettuce salads. Thin or space leaf types to 4 to 6 inches apart.

Cultivate carefully because lettuce is shallow-rooted. Use frequent, light waterings to encourage rapid growth, but do not overwater, because it can encourage root and leaf diseases. Overhead watering should always be done in the morning to give plants time to dry off. Mulches are helpful in maintaining soil moisture and keeping lettuce leaves off the ground.

Lettuce planted in very early spring should be given full sun so that the soil will warm enough for rapid growth. For long-season lettuces, plant so that crops such as sweet corn, staked tomatoes, pole beans, or deciduous trees will shade the lettuce during the hottest part of the day. Interplanting, i.e., planting between rows or within the row of later-maturing crops like tomatoes, broccoli, and Brussels sprouts, is a space-saving practice. Most lettuces are attractive in flower borders and in containers.

Lettuce is best planted in succession, or using different varieties that mature at different times. Thirty heads of iceberg lettuce harvested at once can present a major storage problem! Leaf and Bibb lettuces do well in hotbeds or greenhouses during the winter and in coldframes in spring and late fall.

Harvest heading types when they are firm, but not hard. Do not allow heads to become hard; it decreases flavor and other quality characteristics. Bibb lettuce is mature when the leaves begin to cup inward to form a loose head. The heads will never become compact. Cos or Romaine is ready to use when the leaves have elongated and overlapped to form a fairly tight head about 4 inches wide at the base and 6 to 8 inches tall. Crisphead is mature when leaves overlap to form a head similar to those available in groceries; heads will be compact and firm.

Harvest loose-leaf (nonheading) types when they reach full size. Use the older, outer leaves which contain high levels of calcium first. Correctly harvested and trimmed lettuce stores reasonably well in most refrigerators. Lettuce will keep about 2 weeks in the refrigerator. If lettuce is to be stored, harvest when dry but early in the day when water content of plants is high. Remove outer leaves but do not wash. Place in a plastic bag and store in the crisper drawer.

**Nutritional Value of Romaine Lettuce**

Serving size:	1/2 cup, shredded, raw	<u>Primary Nutrients</u>	<u>%RDA(m)</u>	<u>%RDA(f)</u>
Calories	4	Folic acid	38 mcg	19
Fat	0.1 g	Vitamin C	7 mg	12
Calories from fat	12%	Vitamin A	73 RE	7.3
Cholesterol	0			
Sodium	4 mg			
Protein	0.5 g			
Carbohydrate	0.7 g			
Dietary fiber	0.5 g			

**Problem Diagnosis for Lettuce**

<b>What the Problem Looks Like</b>	<b>Probable Cause</b>	<b>Comments</b>
Curled, distorted leaves. Stunted plants. Green, pink or black aphids on undersides of leaves, stems, or roots	Aphids	Use insecticidal soap.
Seedling plants damaged by caterpillars feeding in crown Plants may die.	Corn earworm Armyworms	
Leaves have ragged holes. Holes bored into heads of lettuce. Leaves devoured.	Loopers	Use <i>Bacillus thurengiensis</i>
Leaves skeletonized or almost totally destroyed.	Armyworms	
Small holes in leaves or leaves heavily skeletonized	Vegetable weevil	Attacks radish, carrot, turnip also. Damage is spotty. Adults do not fly.
Inner leaves of head lettuce black on edges	Hot weather	Do not plant head lettuce are for harvest in warmest months.
Upper leaf surface has yellow to light green areas delineated damaged by leaf veins. Undersurface has soft, downy white growth.	Downy mildew	Most prevalent under cool, moist conditions. Remove outer leaves at harvest. Remove sources of disease -- old lettuce plants and wild lettuce before planting Use resistant varieties.

<b>What the Problem Looks Like</b>	<b>Probable Cause</b>	<b>Comments</b>
Lower leaves, whole plant wilt get slimy. Hard, black sclerotia and white cottony moldy growth under lower leaves and plant crown.	Sclerotinia drop a.k.a. lettuce drop Caused by a fungus	
Leaf veins lose green color and appear enlarged. Leaves appear puckered, ruffled.	Big vein (a viroid disease)	Associated with fine-textured, poorly drained soil. Do not overwater. Plant tolerant varieties. Plant so that air temp is >60°F because symptoms are less severe. Remove sick plants.
Edges of internal leaves are brown and rotting. Not visible from outside of head.	Tipburn Physiological disorder due to calcium deficiency, aggravated by high soil fertility and high temps.	Avoid excess potash. Keep nitrogen levels as low as possible. Avoid water stress. Keep calcium adequate.
Leaves wilt temporarily, may turn dark green or gray-green. Smaller roots dead. Taproot in cross section is yellow, red or brown.	Ammonia injury	Common with urea fertilizer and chicken manure. Keep ammonium forms of nitrogen out of seed row. Cool, waterlogged soil is a problem.
Silvery leaves. Upper leaf surface separated from rest of leaf by water droplets	Frost Injury	Sudden temperature drop below freezing will injure lettuce.
Leaves faintly mottled. Yellowed, stunted plants.	Viruses	Plant virus-free seed, N . available. After symptoms occur, there is no practical control. Aluminum foil mulches may help prevent infection by aphid and leafhopper-transmitted viruses. Plants showing symptoms near harvest are edible. Plants that show symptoms early may produce no or only small heads. Remove infected plants. Control weeds and insects.

<b>What the Problem Looks Like</b>	<b>Probable Cause</b>	<b>Comments</b>
Silvered areas on undersides of leaves of head lettuce. Yellowed lower leaves with tiny brown spots.	Smog	Do not grow head lettuce in smoggy months.
Plants begin to grow tall and send up flower stalks	High temperatures	Prolonged hot weather causes seed stalks to form. Grow lettuce only during cool months. Leafy types are more tolerant of heat. Plant in partial shade among corn in mid-summer or plant early or late to mature during cool weather.
Bitter taste	High temperatures	See above.
Torn areas on leaves	Birds	
Stem, lower leaves rotted Dense, fuzzy gray mold on affected areas.	<i>Botrytis</i> gray mold (Caused by a fungus)	Rotate; remove old plant debris. Plant in well-drained area.
Sunken, water-soaked spots appear on lower leaves, which turn brown and slimy	<i>Rhizoctonia</i> bottom rot (Caused by a fungus)	Rotate; remove old plant debris. Plant in well-drained area.