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G95-1268-A

NebGuide

Published by Cooperative Extension, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln

Lettuce and Other Salad Greens

This NebGuide discusses different salad greens, their uses and nutritional value.

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Lettuce has been an important part of human diets since ancient times. It was customary for the Romans to precede their gargantuan banquets with refreshing lettuce salads in the belief that lettuce enhanced the appetite and relaxed the alimentary canal. It had other uses, too. Dried lettuce juice was used to aid sleep in Elizabethan times and through World War II lactucarium, a sedative made from wild lettuce extracts, was used in hospitals[1]. Today, lettuce is used as the main ingredient in most salads and it is joined by a variety of other salad greens.

Salad greens are easy to grow in the home garden and are an important source of vitamins and minerals in our diets. Dark green leaves are good sources of vitamins A and C, iron, folic acid, and calcium. Iceberg lettuce is the most popular salad green, but there are many other lettuces and salad greens that can add interest and nutrients to everyday meals.

Lettuce

Lettuce comes in many forms--iceberg or crisphead, bibb or butterhead, Romaine or Cos, leaf lettuce, and stem lettuce. Lettuce also grows in varying shades of green, with darker-green leaf types containing greater quantities of vitamins. Outer leaves of head lettuce are more nutritious than the blanched inner leaves. There are also red lettuces in every type, although red iceberg lettuce is rarely found in grocery stores. Red-pigmented lettuces contain more vitamin C than their green counterparts. Unfortunately, the vitamin C in lettuce is lost within a few days of storage. By growing your own lettuce, you can plan

harvest and consumption for maximum nutrition.

Many other greens are also good sources of vitamins and minerals. A few grow so easily most people consider them weeds. Take revenge on their invading presence in your garden by eating them.

Types of Lettuce and Salad Greens

Crisphead or "iceberg" lettuce with dense, firm heads and crunchy leaves is the most important commercial type lettuce. Because lettuce is a cool-season crop, most iceberg lettuce is grown in the cool coastal valleys of California. Crisphead lettuce is seldom grown in Nebraska because it requires a long, cool growing season not available here. Plant breeders, however, continually work to develop shorticultureer season, heat-tolerant cultivars that can be grown in home gardens. When reading seed catalogs or packets, look for crisphead cultivars that are ready in about 75 days and tolerate hot weather. For more nutritious iceberg lettuce, harvest it immature when the leaves are still dark green, yet crisp.

Leaf lettuce matures quickly, is easy to grow, and is a good type of lettuce for home gardens. There are hundreds of cultivars available including `Black-Seeded Simpson', `Oak Leaf', `Grand Rapids', `Ruby Red', and `Red Sails' all of which mature about 45 days from planting. In contrast to the bright green leaves of other cultivars, All-American Selections `Ruby Red' and `Red Sails', have frilled, glossy red leaves.

Bibb or butterhead lettuce, developed by Kentuckian John J. Bibb and often served at Kentucky Derby breakfasts, produces a loose, soft head[2]. The inner leaves have an oily or buttery feel. Butterhead cultivars produce high-quality lettuce that matures slightly earlier than crisp-head cultivars but are less tolerant of warm weather. `Big Boston', `Bibb', and `Butter Crunch', an All-American Selection, are popular cultivars. Butterhead lettuce does best in Nebraska when started early indoors or in coldframes and later set in the garden as transplants.

The cos or romaine type of lettuce produces an elongated head of stiff, upright leaves ready about 60 days from planting. Cos lettuce is important in Europe and is popular in Caesar salads in the United States. In addition to green cultivars, red cultivars `Rosalita' and `Rouge d 'Hiver' are available from mail order sources.

Stem lettuce is often listed in catalogs under the name of Celtuce (CELery-letTUCE). It is grown for its fleshy, elongated stem. The young leaves are high in vitamin C and are used as "boiling greens". The stem is peeled and may be eaten raw or it may be cooked like celery.

Spinach (*Spinacia oleracea* L.) is a cool-season crop used fresh and as a cooked green. Complete cultural instructions are given in NebGuide *G92-1123, Spinach and Swiss Chard*. Spinach grows best under cool temperatures and shorticulture days, so it should be planted very early in the spring and again in the fall as temperatures cool.

Other Salad Greens

- **Cress** (*Lepidium sativum*) comes in four types--common, curled, broadleaf, and golden. Curly cress, or peppergrass, germinates quickly and is ready to eat in about 10 days. It forms little stems of frilly green leaves and has a peppery taste to add zip to dishes. Because it grows so quickly, it is a good plant to let children grow in pots or flats. It prefers cool weather or a slightly shady spot. It can also be grown on a sunny window sill in the winter. To harvest, snip stems with scissors while it is young and tender, as mature plants tend to become pungent.

- **Corn salad** (*Valerianella locusta*), also known as Mâche, lamb's lettuce, or fetticus has a mild, nutty flavor. It has rounded leaves that grow slowly into small rosettes of soft, buttery leaves. It needs a long, cool growing season and may do best as a fall crop in Nebraska. Since it is quite cold tolerant, it should overwinter easily in the garden to provide early spring salads. Harvest whole rosettes if plants need thinning or individual leaves for repeat harvests.

- **Endive and escarole** (*Cichorium endivia*) are two popular salad vegetables in Europe. Endive has curly, deeply cut, lacy leaves with creamy inner leaves. Escarole has broad, coarse, crumpled leaves that blanch the inner leaves so they are crunchy yet tender. Cultural practices are the same as for lettuce, making it an easy crop to grow in the home garden. Like lettuce, they should be planted early in the spring or as a fall crop as hot weather can make them bitter.

- **Arugula or Rocket salad** (*Eruca vesicaria sativa*) leaves have a peppery/sweet tangy flavor. This green is easy to grow, but the young leaves need to be harvested frequently for best flavor. It becomes bitter in hot weather, so plant successive crops early in spring and then again in the fall. If the plants bloom, harvest the flowers and add the remainder of the plants to the compost pile as they become bitter. The flowers can be added to salads for a bit of color.

- **Mesclun** is a mixture of many different salad greens grown and harvested together for an instant mixed salad. Seed can be purchased from mail order sources or you can mix your own. Mesclun is harvested when individual leaves are bite-sized and immature lettuce is usually the main ingredient. Cultivars in a particular seed mix are chosen for their color, texture, flavor, leaf size, and shape. Other ingredients, which vary by seed company, include endive, arugula, oriental greens, radicchio, mâche, mustard, and cress. Beet and chard thinnings may be included. Herbs, such as fennel, sorrel, tarragon, basil and mints are sometimes included in very small quantities.

  Some companies blend their mesclun mixtures for different flavors, such as tangy or mild. Generally the ingredients need cool growing temperatures and should be planted in early spring or for a fall garden.

- **Chicory** terminology can be confusing because the same plant is used in three different ways and cultivars have specific uses. Chicory (*Cichorium intybus*) is native to Europe but was brought to the U.S. in the 18th century. It has naturalized over much of the U.S., including Nebraska. Young plants resemble dandelions but later the flower stem becomes bristly and bears rigid branches reaching 18 to 24" tall. The flowers are dandelion-like, sky blue, 1-1 1/2" wide and close by mid-day. The roots can be dug and roasted and substituted for or mixed with coffee. Commercially, chicory grown for dried roots is planted in deep, rich soil in rows 18" apart. The parsnip- like roots are dug in the fall, roasted and ground.

  Witloof chicory, root chicory, or Belgian endive is the same plant treated differently. There are improved cultivars of Belgian endive/Witloof chicory available from seed companies. The plants are grown in well-drained, deep, rich soil. In the fall, the tops are cut off and the roots dug and put into cold storage for at least three months. After this dormancy period, the roots are planted in containers 18" deep at 55°F. For high quality white buds or chicons, keep the newly planted roots in absolute darkness. In about three weeks the pale yellow leaves will form cone-shaped buds about 6-8 inches long. Cut off the chicons, discard the spent roots and start another batch. Since the chicons are grown in the dark, they, like blanched asparagus, have few vitamins and should not be considered a good source of nutrition.

- **Radicchio/ Italian chicory** is also *Cichorium intybus*. The beautiful red and white heads grow to

orange- to grapefruit-size. The leaves are slightly bitter like endive, but sweeten slightly with cooler day temperatures. In the past, only a portion of radicchio plants made tight heads, but new cultivars, including some hybrids, have improved uniformity in color and heading.

Radicchio is grown much like head lettuce and needs a long, cool growth period. Spring crops should be started very early and transplanted to the garden when 3-4 weeks old. In Nebraska, a fall crop is likely to be of higher quality than a spring grown crop. Direct seed it in the garden about 85 days before the first average fall frost. Cover the row with a board or very light mulch to keep soil temperatures cooler while it germinates.

Long days and/or high temperatures can cause radicchio to bolt, increase in bitterness and develop tip burn. If temperatures are especially hot in your area, you may want to start transplants for a fall crop indoors where it is cool. Radicchio is frost tolerant, but growth will be slow in cold weather.

Edible Salad Weeds

While most people pull and compost weeds in the garden, some exact their revenge on edible culprits by eating them. Never eat edible weeds which have survived herbicide treatment. Ask about chemical use before you harvest greens from locations other than your own lawn or garden.

- **Purslane** (*Portulaca oleracea*) is one common edible weed that can add valuable nutrients to the diet. It is high in omega-3 fatty acids and vitamin E. Some seed catalogs sell cultivated purslane seed that is reported to have better flavor than the common weed form found in gardens. Purslane has a cool, citrusy-green flavor. When mixed with other greens, purslane adds crunch and texture to an otherwise routine salad.

  When planting cultivated purslane, wait until the soil has warmed and the danger of frost has passed. Purslane is a succulent plant with fleshy, drought-tolerant leaves. It does best in hot weather and full sun.

- **Dandelions** (*Taraxacum officinale*) are an early spring weed that which are a good source of vitamins. Instead of spraying dandelions in your lawn, try eating them. Young leaves can be used raw in salads while older leaves are usually steamed or braised. The yellow flower petals can also be added to salads, butters, or sauces to add color and interest. In some parts of the world, dandelion roots are roasted and used as a coffee substitute.

  Improved dandelion seed can be purchased through some seed catalogs. One French cultivar, `Montmagny', has 8 to 9" leaves that taste like mild chicory. Commercial cultivars are selected for their large, tender leaves.

- **Lambquarters** (*Chenopodium album*) can grow more than 4' tall and can be very difficult to pull or hoe when large. You can save much time and energy by harvesting it when young and tender. The leaves taste like spinach and the plant is related to the common cultivated spinach. The undersides of the leaves have a slightly rough texture so you may prefer it cooked rather than raw in a salad.

Other Greens

Many other plants, cultivated as well as wild, can be used as greens either cooked or in salads. Never eat wild greens unless you can positively identify them as a safe, edible plants.

Seed catalogs are a good source for information on growing and using greens from the garden. Some companies sell seed for uncommon greens from all around the world.

General Growing Requirements and Culture

Lettuce and other salad greens have similar cultural requirements. Methods discussed for growing lettuce can be applied to most other salad greens discussed in this NebGuide.

Lettuce germinates and grows best at low temperates and will withstand a moderate freeze. Because of this, it should be planted as soon as the ground can be worked in the spring. It also does well as a fall crop and can be planted in August. However, high soil temperatures in the summer can inhibit germination. You can improve germination of cool-season plants in summer by shading newly planted seed with a board or light covering of mulch.

Hot weather causes the milky sap to become bitter. High temperatures and long day lengths also cause lettuce plants to "bolt" or flower and go to seed. Butterhead and crisphead varieties are especially sensitive to bolting.

Conditions in western Nebraska are more favorable for growing lettuce than in eastern Nebraska due to cooler night temperatures throughout the growing season. Suggested periods for planting spring and fall lettuce for different regions in Nebraska are:

	Spring		*Fall*	
	Earliest	*Latest*	*Earliest*	*Latest*
East	3/25	5/1	7/25	8/15
Central	3/30	5/5	7/20	8/5
West	4/5	5/15	7/15	7/25

With the use of floating rowcovers and/or coldframes, salad greens can be planted in late August and early September and protected from hard freezes in the fall.

One problem many gardeners have is too much lettuce at one time. Production time can be extended by making a series of small plantings 10 to 15 days apart.

Crisphead and Romaine lettuces take much longer to reach maturity than leaf lettuce. Start them from transplants to avoid the hot weather. If transplants are used, they should be started indoors or in coldframes about March 10 in eastern, March 15 in central, and March 20 in western Nebraska. They should be ready for transplanting approximately April 15, April 20, and April 25 respectively. Iceberg lettuce can also be direct seeded like any other lettuce. As it grows, harvest the crunchy, immature plants to add to salads and to allow space for the remaining plants to fill in and mature.

Lettuce seed should be sown thinly in rows or wide- row bands about 1 1/2 to 2 feet apart and covered with not more than one-half inch of fine soil. Keep the soil moist for 10-14 days for good germination. Wide-row planting will use your garden space more efficiently than traditional narrow rows. It is important to thin the plants to allow good air circulation between the plants. Thinning also will help prevent foliar diseases. Leaf lettuce should be thinned to about 3" between plants in all directions. Allow 6 to 8" between butterhead plants and 10-12" between crisphead and Romaine lettuce plants. An average packet of seed will sow 50 feet.

Insects and Diseases

Most leafy greens share the same insect pests, including aphids, leafhoppers, and leafminers. Slugs and sowbugs may also pose problems. Diseases such as downy mildew and rots brought on by hot, wet weather are also problems. Floating rowcovers made of spunbonded polypropylene can be used to exclude insect pests. The fabric comes in varying weights. Heavier types can be used to retain heat for frost protection while the lightest can be used into the summer to exclude insects.

To reduce diseases, select cultivars bred to resist or tolerate disease causing pathogens. Practice good sanitation in the garden and space plants so air can circulate between them.

Harvesting

In the home garden, lettuce will usually require thinning. You can use the thinned seedlings in salads from the time they are about 2" tall. When thinning, pull up entire plants to leave space for others to fill in. If you have more space and can use more lettuce, transplant the thinnings to another location in the garden.

Commercially, crisphead lettuce is harvested when the heads are solid and the tops become yellowish green. However, it also can be harvested when quite young; before solid heads are formed. Small lettuce plants and mini-heads often have more crunch than leaf lettuce and more vitamins than the full-size dense heads of mature lettuce.

Butterhead cultivars are harvested when a loose head is formed. Heads should be cut at or slightly below the soil surface. Avoid damaging the outer wrapper leaves. Generally, these are the most nutritious.

Large leaf lettuce plants can be harvested by cutting the leaves off about 1" above ground. The plants will continue to grow and produce leaves for repeat harvests. Keep in mind, though, that hot weather will soon make the lettuce bitter.

Wash all greens in cool water and shake them dry or use a salad spinner. Wrap lettuce in a damp paper towel and store in a lettuce crisper or plastic bag. Try to harvest frequently and consume rapidly, as stored lettuce loses much of the vitamin C content after just a few days in the refrigerator.

References

Sources for less common salad greens

1. Shepherds Garden Seeds, 30 Irene St., Torrington, CT 06790, phone: (203) 482-3638
2. Stokes Seeds Inc., Box 548, Buffalo, NY 14240-0548, phone: (716) 695-6980
3. The Cook's Garden, P.O. Box 535, Londonderry, VT 05148, phone: (802) 824-3400
4. Seeds of Change, 1364 Rufina Circle #5, Santa Fe, NM 87501, phone: (505-438-8080
5. Johnny's Selected Seeds, Foss Hill Road, Albion, Maine 04910-9731, phone: (207) 437-4395

[1]Rupp, Rebecca, 1987, *Blue Corn and Square Tomatoes*, Storey Communications, Inc., Pownal, VT 05261

[2]Ibid.

File G1268 under: Horticulture
C-35, Vegetables
Issued November 1995; 3,000 printed.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.

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