

Leek

Allium ampeloprasum, Porrum group, is a member of the Amaryllidaceae (amaryllis) family. Early maturing varieties include Tivi, King Richard, Gennevilliers, De Carentan, Titan, and Otina; late-maturing varieties include American Flag, Blue Leaf, Electra, Solaise, Alaska, Pinola, Laura, Nebraska, Carina, Conqueror, and London Flag.

Related to onions, chives, and garlic, the leek develops a broad, succulent stem rather than a large bulb like an onion. The mature stem is about 1 inch thick and 6 to 8 inches long from roots to the top of the neck; above the neck is a fanlike sheaf of flat, blue-green or yellow-green leaves that may grow another foot or two in length. Types vary in the length and thickness of the leaf shanks (pseudo-stem).

Market Information

Baby leek is a popular specialty item and can command a higher price per pound than larger leeks (i.e., greater than 1 inch diameter), but most leeks are sold at full size. Packing with top ice is highly desirable if you want to maintain the best quality.

Current production and yield. Most of the world's leeks are produced in Europe. California, New Jersey, Michigan, and Virginia are traditional leek-growing areas in the United States. Peak availability comes in late winter and in the spring, but leeks are available year-round.

Use. The thick, white leaf bases and slightly developed bulb are eaten as a cooked vegetable, in soups, or raw with or without leaves attached. The flavor is mild, sweet, delicate, and distinct from the other members of the onion family. The green leaves are edible, but have a pungent odor and an acrid taste. The leaves are used for flavoring in salads and cooked dishes.

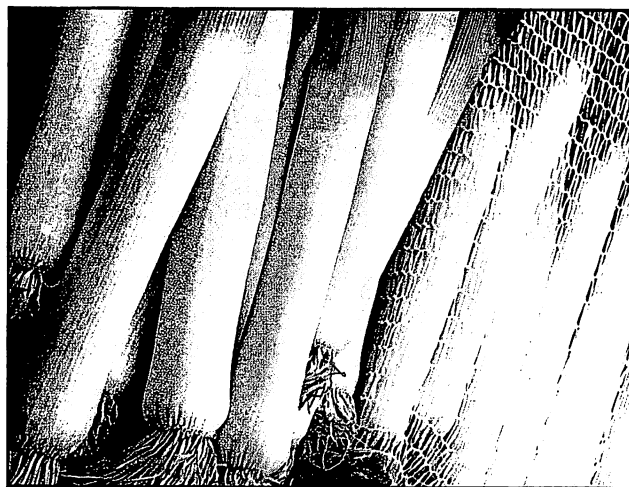
Nutrition. Like all *alliums*, the leek is a good source of vitamins and minerals, especially Vitamins C, B₁, B₂, and B₆. A 3½-ounce portion provides about 30% of the recommended daily allotment for Vitamin C. Leeks also provide a good source of potassium. Excessively high amounts of nitrogen fertilizer can cause high nitrate concentrations on edible portions of the leaves and shanks.

Culture

Climatic requirements. Leeks can withstand considerable exposure to temperatures below 32°F.



The leaves of the leek plant are flat, in contrast with the round leaves of the onion. (Photo: Hunter Johnson)



The Nebraska leek variety at market. (Photo: Marita Cantwell de Trejo)

They grow best in cool to moderate climates. Because bolting (flowering) comes in the first spring after planting, late summer and early fall plantings should be avoided.

Propagation and care. Leek may be raised either by direct seeding or by transplanting approximately 3 months after greenhouse or bed planting. From the time of seeding, the plants may occupy the land for 8 to 15 months. For this reason, many growers prefer transplanting.

The fertilization program should be adjusted for the area, planting time, soil type, previous crop, and water management. Since the crop has shallow roots, water and fertility management will vary with soil type; sandier soils require more frequent irrigation and nitrogen application. Lighter soils help in harvesting and cleaning the crop; heavier soils may yield more leeks, but may also produce a lower-quality crop.

Spacing will influence the size of individual plants. The current trend is to grow long, thin shanks (1 inch diameter) with no noticeable bulbing and with as much white as possible. Wide spacing produces thick, short shanks. Such leeks may be fine for the processing crop, but they are less favored for fresh market.

When planning any planting, remember that leeks will bolt in late spring and early summer if they have been exposed to low temperatures. This limits summer production, since early fall plantings will bolt and spring plantings will be too small to yield well by late spring or summer.

Nursery planting for transplantation. In a greenhouse, sow seed approximately $\frac{3}{8}$ to $\frac{1}{2}$ inch apart in rows 12 to 14 inches apart. In outside, open beds, seed two to six rows to a bed, with beds 36 to 40 inches apart. The rows can be 4 to 14 inches apart on the bed. Plant the seed about $\frac{1}{2}$ inch deep. No fertilizer is necessary in the nursery beds. Plant the seed at a rate of $\frac{1}{2}$ to $1\frac{1}{2}$ pounds per acre depending on seed size and desired population; one seed every $\frac{3}{8}$ to $\frac{1}{2}$ inch is optimal for nursery beds.

Nursery beds can be planted from October to April and transplanted 2 to 4 months later, when the plants are $\frac{3}{8}$ to $\frac{1}{2}$ inch in diameter and about 5 to 8 inches long. Trimming the roots and tops to make the transplants about 5 to 6 inches long is optional, and desirable only if the temperature is hot or if trimming makes the mechanical transplanting machine work better.

A spring (mid-May to June) harvest can be attained with October-to-December seeding; yields will be lowest at this time, but market price can be better. Summer harvest can be achieved with a December-to-February seeding; yields are usually highest at this time. Fall and winter harvests are usually achieved from direct seeding into fields during March, April, and May.

Transplanted crop. Set the transplants into beds similar to those used in the nursery at a spacing of 2 to 4 inches apart within the row and two rows per bed. Work a preplant broadcast application of 1,000 pounds of a 12-12-12 fertilizer or an equivalent complete fertilizer into the soil. Pull a shank down either side of the bed to make a narrow slot into which the plants can be hand planted every 4 to 6 inches. After planting, run a small double duckfoot shovel down the center of the bed or run shovels alongside the bed shoulders to move soil toward the plants. Strawberry equipment should work very well to firm-in the transplants. Irrigate as soon as planting is done. Several times during the growing season, apply side-dress nitrogen for optimum growth. You will want to supply an additional 100 pounds of nitrogen.

Direct seeding. Transplants might have the advantage of producing a longer white shank because they can set deeper into the soil. However, throwing the soil up against the plant every so often can help the plant to blanch and produce longer shanks. This produces better quality leeks, but also delays harvest. Direct seeding is less expensive, and determining whether to direct-seed or to transplant will depend on what kind of investment the grower wants to make, field availability, and the desired harvest time. Transplanting helps to minimize weed control problems.

The crop shouldn't be stressed for moisture; neither should it be overirrigated. Furrow, sprinkler, or drip irrigation can be used. The irrigation method is a matter of grower preference, uniformity in slope of the field, and water availability and cost.

Harvest and postharvest practices. A leek crop seeded in November and transplanted in February can be harvested in June; a crop seeded in March and transplanted in mid-June can be harvested as early as November, although the plants will not reach full size. A crop direct-seeded in April or May can be harvested the following spring. The market demand for leeks is usually greatest in the fall, winter, and early spring, and the bulk of the crop is harvested during this period. The largest plants are

most susceptible to bolting in late spring or early summer. Because of high temperatures, leeks are not commonly harvested in California between June and October. Such harvest dates are possible in cool (e.g., coastal) climates.

Before harvest, plants are undercut with a blade attached to a tractor. The blade cuts about 1 to 2 inches beneath the plant base. Uniform undercutting without crop injury is easiest if the plants have been set uniformly at the transplant stage. The large, massive root system of the leek plant at harvest time and the fresh market's demand that 1 inch of clean roots be left on the plant combine to make harvesting difficult. After undercutting, each plant is lifted by hand and detached from the surrounding surface layer of soil with a knife. The soil at the base of the plant holds together in the extensive shallow roots like a mat. Although some soil can be shaken off in the field, the rest must be washed off with a pressurized stream of water. In muddy conditions, harvesting is a mess.

After the soil has been removed from the roots and an outside layer of the plant stripped clean by hand and washed, the topped or untopped plants

are tied into bunches of 2 to 5 plants depending on size and packed into cartons. Some hand stripping is necessary to remove one or more sheaths of soiled or old leaves. Size grading would be a market advantage, but many growers do not go to this trouble. Presently, the market prefers some trimming of the tops. Harvesting is generally a weekly operation.

Storage recommendations are 32°F at 95 to 100% relative humidity, with an approximate storage life of 2 to 3 months. For shipping, join bunches at top, center, and bottom with ties.

Mature leeks ship in 20-pound (net weight), ⅓-bushel crates holding 12 bundles each.

Pest and weed problems. Once a good canopy is developed, weed control should not be a problem. Before then, however, the leek is not very competitive. Direct seeding makes the problem worse. Both nursery and main crop areas should be rotated with non-alliums to guard against diseases and pests. Alliums should not be planted in the same soil or field more often than once every 4 or 5 years. Pink root can be a very serious disease. Thrips can also be a very serious insect problem.

Sources

Seed

NOTE: Leek seed is widely available.

More information

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