



## Information of Lettuce Cultivation and Production is Higher Return of Farmers

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In India, lettuce is one of the best salads used commercially in many pizzerias, burger joints, subways and other fast food outlets. As the demand for lettuce in India is constantly increasing, huge income can be earned with the right lettuce farming business plan. Lettuce (*Lactuca sativa*) belongs to the star family. It is not related to the Cruciferae, such as cabbage. It is a good source of dietary fibre, calcium, iron and vitamins A, B, C and E. Just a few seedlings planted per week will keep the household constantly supplied with this leafy green. Lettuce belongs to the Compositae (sunflower or daisy) family. It is an annual plant native to the Mediterranean region. Cultivation may have begun as early as 4500 BC, perhaps initially for the edible oil extracted from its seeds. Lettuce salad was popular with the ancient Greeks and Romans. Cultivated lettuce was probably derived from the so-called wild or prickly lettuce *Lactuca scariola*. Primitive forms of lettuce were loose and leafy. By the 16th century, header forms were well developed in Europe. Varieties of oak and curly leaves of various colors were described in Europe in the 16th and 17th centuries. There are 5 types of lettuce (1) Crisphead (2) Butterhead (3) Cos or Romaine (4) loose leaf or bunch lettuce and (5) stem lettuce (celtuce). Lettuce color for commercial cultivars varies from yellow-green to deep red and all colors in between.

**Kingdom:** Plantae  
**Clade:** Tracheophytes, Angiosperms, Eudicots, Asterids  
**Order:** Asterales  
**Family:** Asteraceae  
**Genus:** *Lactuca*  
**Species:** *L. sativa*  
**Binomial name:** *Lactuca sativa*

Lettuce grows best at 15 to 18 C. Germination occurs at a minimum of 5 C, the optimum range is 16 to 20 C and the optimum germination temperature is 20 C (depending on the cultivar and type of lettuce). At soil temperatures above 27 C, germination is poor. Hardened seedlings are frost tolerant (-5 C to -7 C), but mature plants are more sensitive to frost (-1 C) depending on the cultivar. In mild frosts, only the wrapping leaves are injured, so other markets can be developed. Warm and dry conditions promote creep and seed formation (screwing). Bolt occurs where temperatures remain above 20 C day and night. In this situation, there are also serious problems with burning tips, as well as a bitter taste. Cool nights are essential for a quality salad. In the Atlantic region, the early soils of the St. River Valley appear to be John and in the Annapolis Valley best for early lettuce production (marketing in June and July) and that coastal areas would be best for July, August, September and October Production. Warm sandy soils are preferred for early harvest, loamy to clay loam

or peat for late production. Lettuce can be grown on peat soil in hot weather. Good drainage and a high organic matter content are essential. A regular supply of water is essential, although high humidity and excess water just before harvest can be destructive to crop yield and quality. Fields with a low incidence of disease must be selected. Sclerotinia decline was the most serious production problem in the development of lettuce as a staple crop. Lettuce is grown in tunnel houses and early field beds from the last week of May to the end of June. This crop can be grown from late May to October, but markets are usually early in the season (before lettuce is available), or for special markets in the H.R.I. Trade. Yields depend on row spacing as well as the size of product desired -- 2,000 to 3,000 dozen per hectare. Early market lettuce is usually transplanted in late April or early May for harvest in mid to late June. Lettuce can be transplanted up to the beginning of August depending on the variety and the market. Yields of 2000 dozen per hectare are average and individual fields can yield 3000 dozen per hectare (500g to 1000g each). Romaine planning and yields are similar to lettuce, except that black lettuce can be grown in tunnel houses for early harvest in the same time period as leaf lettuce (from late May). Lettuce is now an important crop that was once grown in greater quantities in the Atlantic region. The acreage of romaine and lettuce has increased, but it still has a long way to go to replace imports. Lettuce is the vegetable that is imported in the largest volume and has the largest dollar value of any vegetable imported into the Atlantic region during the growing season. Currently, most marketing is done through street markets or deliveries directly to retail stores and deliveries to wholesalers. If we can control the sclerotinia decline and get adequate cooling equipment, we should be able to grow lettuce successfully, but the market is extremely price competitive.



**Nutrient content:** Useful amounts of several nutrients including vitamins A and C; and the minerals calcium and iron. The nutrient content is highest in the darker green, outer leaves. Low in calories. Each head contains 65 to 70 kilocalories. Lettuce (*Lactuca sativa*) belongs to the star family. It is not related to the Cruciferae, such as cabbage. It is a good source of

dietary fibre, calcium, iron and vitamins A, B, C and E. Just a few seedlings planted per week will keep the household constantly supplied with this leafy green.

### Establishing A Crop

**Varieties:** There are two main types of lettuce; namely Loose-leaf and Crisp head (Iceberg) types. Examples of loose leaf varieties are: Green Mignonette and Bronze Mignonette. Some common varieties of crisphead or iceberg are: Trinity, Trinity Star, Lyra, Emperor, Sahara.

**Seed treatment:** Lettuce germinates best at relatively low temperatures. This crop should be pre-germinated in cool rooms (planted in pods or peat blocks) during the summer, as conditions are generally too hot for good germination, even if greenhouses are well ventilated.

**Sowing/Planting:** Begin seeding the field as soon as the soil can be tilled. Seedling succession is essential for continuous cultivation in those coastal areas where lettuce can be grown during the summer and early fall. Coated or pelleted seed is available so precision seeders can be used. Sow sparsely to reduce thinning. Thin when two or three leaves are formed. Weed control is usually more of a problem in direct seeded fields. Approximately 275 g of seed will ensure a transplant per hectare. Direct seeding requires 1 to 2 kg per hectare if no precision seeding. Lettuce should be sown to a depth of 0.6 cm or less. Space the rows 30 cm or more apart as determined by the machinery. Plants should be spaced 25 to 36 cm apart for lettuce and 20 to 30 cm for leaf and breast lettuce. Sow sparsely to reduce thinning. Thin when 2 or 3 true leaves form.

**Watering:** Water the plants immediately after transplanting. Then water daily if there is not enough rainfall. When watering, add water to the soil near the base of the plant to prevent the soil from splashing onto the leaves. Remember to use clean water to water your plants.

**Harvesting and Handling:** Harvest lettuce as soon as the plants are large enough. Harvest lettuce as soon as the heads harden. Harvest early in the morning if possible and keep refrigerated until market.

**Storage and air conditioning:** Quick-chilled lettuce in good condition can be stored for 2 to 3 weeks at 0 C and relative humidity of 98% or more. Other types of lettuce have a shorter storage time. Vacuum cooling is the best way to quickly remove field heat to temperatures close to 0 C, and this is effective in extending the shelf life of these vegetables. Wilting can be reduced by using individual polyethylene head wraps or open bags in the case of leaf lettuce. Packaging should have ventilation holes to prevent the creation of a harmful atmosphere inside the packaging. Avoid storing lettuce with apples, pears, tomatoes, or other produce that produces ethylene. Ethylene can cause reddish-brown spots on the midribs of lettuce leaves. Plants per acre should be 12,000 to 34,000 plants, head lettuce; 20,000 to 46,000 plants, leaf lettuce. Amount of seed per acre is 16 to 20 oz. planting depth of seed is 1/4- to 3/8-inch. Lettuce grows fairly quickly. Leaf varieties reach maturity in 30 days but can be harvested as soon as they reach the desired size. Other types of lettuce require 6 to 8 weeks to reach full harvest size.

Lettuce is the only member of the genus *Lactuca* that is grown commercially. Although China is the world's largest producer of lettuce, most of the crop is consumed domestically. Spain is the world's largest exporter of lettuce, with the US in second place. In addition to its usual purpose as an edible leafy green, lettuce has a number of uses in ancient (and even some more modern) folk medicine and religious symbolism. For example, the ancient Egyptians considered lettuce a symbol of sexual prowess and a promoter of love and childbearing in women. The Romans also claimed that it increases sexual potency. In contrast, the ancient Greeks associated the plant with male impotence and served it at funerals (probably because of its role in the myth of the death of Adonis), and 19th-century British women believed it to cause infertility and sterility.



## References

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