

**LEC. 25 LITCHI - SOIL, CLIMATE, PLANTING, VARIETIES, NUTRIENT
AND WATER MANAGEMENT, SPECIAL CULTURAL OPERATIONS,
PHYSIOLOGICAL DISORDERS, PESTS AND DISEASES,
MANAGEMENT PRACTICES**

LITCHI (OR) LYCHEE

It is a native fruit of warm subtropic zone of China having juice of excellent quality. The fruits are a rich source of sugar (6-20%), protein 0.7% and fat (0.3%), minerals like calcium (10mg) phosphorus (35mg) and vitamins like vitamin C (64mg), vitamin B1 (0.2mg), B2 (0.03 mg and B3 (0.1 mg) per 100g. The fruits can be canned, made into squash, pickles, and wine or dried to form litchi nut. The tree is a medium large evergreen one with more branches. The fruits are borne in bunches. Each fruit is a one seeded nut, the pericarp is the skin, which has papillate projection like strawberry. The fleshy aril surrounding the seed is the edible portion, which separates easily from seed and skin. China, Taiwan, Thailand, India, South Africa, Australia and Madagascar are the main litchi growing countries.

Climatic and soil requirements:

A warm subtropical climate is ideal for the growth and flowering in litchi. The winter should be cool as well as dry and devoid of frost (minimum temperature 15⁰C). This should be followed by fairly long hot (16-22⁰C) climate with light rainfall during flowering and then by high temperature during fruitset (18-24⁰) with medium humidity. During harvest the temperature should be around 24-28⁰C with bright sunlight and high relative humidity. During new flush, the temperature should be 28-30⁰C with high RH and heavy rainfall. An alluvial soil with good drainage and easy access to the water table is the best for the growth of litchi. The plants have a low ability to transport water from roots to leaves. The soil pH should be around 5.5.

CULTIVARS:

Haak Yip:

The fruit is heart shaped each weighing 20-22g, skin is thin, soft and purplish red. Flesh has an excellent aroma and is sweet in taste. It separates easily from flesh. It is the commercial cultivar of Thailand, Taiwan and China.

Taiso:

The fruits are eggshaped each weighing 22-26g, bright red skin changing to dull red at maturity, flesh is sweet. It is the commercial cultivar of Australia, Queensland and South Africa (Where it is known as Mauritius).

Waichee:

Fruit are small (16-18g) round with deep red skin. It possesses soft flesh with abundant sweet juice. It is cultivated in China and Australia.

Rose scented:

Fruits are oblong conical with deep rose pink skin, pulp grayish white. The aril has a delicate rosy flavour. It is an important cultivar of India.

Muzaffarpur:

The fruits are deep orange to pink with medium juicy sweet pulp. It is grown in India.

Bombai:

Fruit is heart shaped, 15-20g in weight usually with another under-developed fruit attached to stalk. Tubercles are carmine red with uranium green interspace. It is an important commercial cultivar of West Bengal.

China:

Fruits are globose with a blend of nasturtium red and marigold orange. Fruits are large, 25-27g having a sweet flesh with good juice and pleasant aroma. It is also one of the important cultivars of India.

Propagation and planting

To avoid the high variability and long juvenile period, seed propagation is not recommended. Semihard and hard wood cuttings of 15-20cm length which were previously ringed while attached to mother plant and then treated with 10000 ppm of IBA and Ferulic acid will root easily. Air layering done during spring and early summer season is commercially used.

Stooling, apical grafting, approach grafting, approach grafting and shield budding are other methods of propagation.

The land should be prepared thoroughly by ploughing and leveling. A windbreak should be established around the litchi orchard using eucalyptus, casuarinas, jamun preferably before one year of establishment of litchi orchard.

Pits of 1 M x M 1M x1 M are dug, allowed for a week, filled with 25kg FYM +2 kg of bone meal and 300g of muriate of potash +1 basket of soil from litchi orchard containing mycorrhizal fungi., The spacing recommended is 10 M x 10 M . If the soil is not fertile and the climate is comparatively dry, the spacing can be reduced to 8 M x 8 M. The young plants should be staked.

Irrigation and manuring:

Frequent irrigation is necessary so as to maintain the adequate soil moisture for proper establishment of young plans. If there is moisture stress the plants will not establish. Manurial requirement of lithchi is as follows.

Tree's age (Years)	N (g)	P (g)	K (g/tree)
1	75	25	75
2	100	25	100
3	150	50	150
4	250	75	250
5	250	75	250
6 years & above	600	200	250

For bearing trees also there should not be any moisture stress in soil.

Training and interculture:

Branches with narrow crotches should be removed. Terminal buds in long branching cultivars should be removed to encourage branching. However intensive removal of vegetative

growth should be avoided as otherwise it will delay the next season flowering. Sorghum stubble, wheat straw, groundnut shells can be used as mulch to conserve soil moisture.

Plant protection:

The bark feeder (*Indarbela tertronis*) can be controlled by plugging the holes after application of carbondisulphide or formalin. Leaf rollers can be controlled by an insecticide like Nuvan which has fumigant action also. Red rust can be controlled by spraying lime – sulphur 3 times during autumn and 3 times during spring.

Leaf galls, caused by eriophid mite *Aceria litchi* is a common problem. This can be reduced by pruning and spraying of conventional (or) new avermectin compounds viz., spinosyn, emanectin, spiromesifen etc.

Flowering, harvest and yield:

Litchi trees vegetatively propagated come to flower at the age of 3 –5 years. The new flush arising in spring ends in inflorescence. Fruits are harvested after full maturity and ripening on the tree itself. Fruits are harvested as bunches, precooled and then stored at 0°C to 1°C.