

## Fruit nutrition garden: A new approach towards Food Security and Diversification

**Establishment of Fruit Nutrition Garden in an area of 625 square meters (25 m length and 25 m wide) can meet daily requirement of balanced diet apart from getting good quality, fresh and naturally ripened fruits without pesticide residue throughout the year. Important points to be considered while establishing fruit nutrition garden is discussed in this article. In Fruit Nutrition Garden, 21 types of fruit plants can be planted which can prove as new approach for diversification of fruit plants.**

**F**RUITS are integral part of our life and known as protective foods as they are rich source of vitamins, minerals and antioxidants. Major health benefits of fruits are lower risk of cancer, heart disease, blood clots, high blood pressure, high cholesterol, and eye health and diabetes. It is a fact that fruits are generally expensive in market and moreover treated by various chemicals which are harmful for our health. With increasing awareness among population especially, urban masses are interested consuming safe fruits which are ripened naturally and without pesticide residue. Even deficiency of important nutrients like iron, calcium, vitamins, etc. among masses necessitate to develop some sort of planned fruit nutrition garden to strengthen nutritional security in addition to availability of fresh, naturally ripened fruits without pesticide residue.

Keeping in view the above facts, Punjab Agricultural University has developed model of fruit nutrition garden in an area 625 square meters i.e. 25 m length and 25 m wide which can accommodate 21 types of fruit plants. Since fruits are perennial in nature and come into bearing after at least 2-3 years of planting, so utmost care must be taken while selecting right fruit variety, right time, source and planting distance.

### Some important points to be kept in mind while establishing Fruit Nutrition Garden

*Establishment plan:* Fruits plants like mango, jamun, sapota, loquat, fig, etc. which are taller and vigorous in nature should be preferably planted in northern side of garden to prevent shading effect on smaller fruit plants. The middle portion can be occupied with short statured fruit plants like guava, citrus, etc. The deciduous fruit plants like pear, peach, plum and pomegranate can be planted on south- western side. On the extreme southern side, fruit plants like papaya and banana can be grown with protection measures as both are sensitive to frost conditions. Eastern side of garden can be used to grow

different grape varieties on Y- trellies system. Karonda and phalsa on western side whereas sweet lime can be used for boundary on northern side.

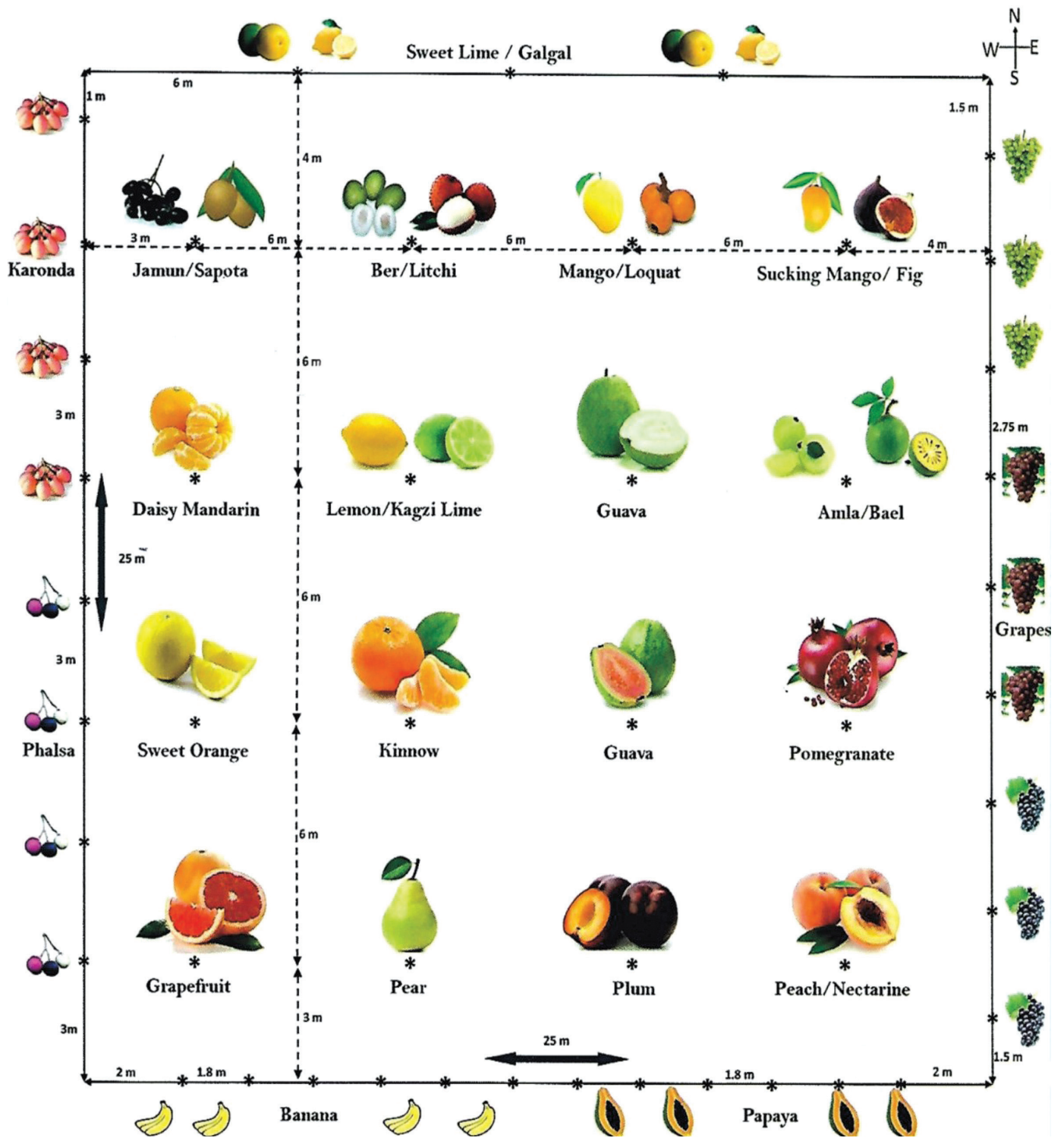
*Planting time:* Evergreen fruit plants like mango, jamun, citrus sapota, loquat, etc. should be grown in Feb-March or August-Sept. Whereas deciduous fruit plants like peach, pear plum, grapes, pomegranate, karonda etc should be planted in Jan- Feb, before onset of sprouting.

*Pit preparation for planting:* One meter wide and one meter deep round pits are dug for most of the fruit plants. In case of shallow rooted plants like banana, papaya and phalsa smaller pits of 50 cm × 50 cm can be dug. Refill the pits with top fertile soil and well rotten farm yard manure in equal parts. Add 15 ml chloropyriphos 20 EC to each pit mixed with 2 kg soil for control of termites. The pits should be watered before actual planting so that soil may settle down properly and more soil can be added. The fruit plant should be planted in the centre of pit in such a way that bud union remains about 9 inches above the ground level. Soil around it should be pressed firmly followed by light irrigation.

*Initial care of fruit plants:* The young plants after planting should be staked up to few months to encourage straight growth of plant. Any growth/sprout arising below bud union should be removed regularly to attain adequate growth of scion and prevent over growth of root stock.

*Pruning:* Plants should be pruned to get good quality fruits and yield. Generally evergreen fruit plants require only corrective pruning i.e. dead, diseased and criss cross branches should be removed. But. deciduous fruit plants like peach, plum, pomegranate, karonda, phalsa, etc. require regular pruning every year and should be pruned in the month Dec to Jan when plants are not active. In case of pear, minimal pruning is required as it bears on spur which remain productive for many years. Ber is pruned in the months of April-May.

*Irrigation:* Generally irrigation at weekly intervals is sufficient during summers and during winters irrigation at



15 days interval is adequate for normal growth of plants. Deciduous fruit plants should not be irrigated during winters.

**Manuring and fertilization:** Generally, well rotten farm yard manure is added in December in all fruit plants except ber and guava in which it is added in may-june. In most of the fruit plants fertilizers are added in two split doses i.e. half before flowering and other half after fruit set. Care should be taken that fertilizers are to be added about 1 feet away from tree trunk and distributed uniformly along all sides of plant and mixed properly.

**Protection from adverse climatic conditions:** Fruit plants should be protected from frost during winters by covering with paddy straw thatches or polythene sheets. Regular irrigation can also protect plants from frost. During summer months, main trunk of plants can be white washed to protect from sunburn. White wash solution can be prepared by adding 2.5 kg slaked lime, 50 g copper sulphate, 50 gm suresh gum in 10 litres of water. Gum can be dissolved in some hot water before dissolving in mixture. Pure water sprays can also prevent sunburn injury in fruit plants.

**Table 1.** Some of Recommended varieties for Fruit Nutrition Garden

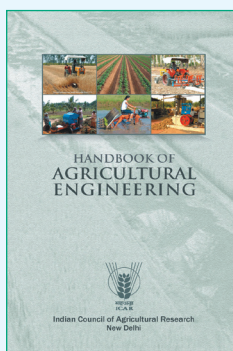
Sr No.	Fruit Plant	Recommended Varieties
1	Amla	Neelam
2	Bael	Kagzi
3	Banana	Grand Naine
4	Ber	Sanaur-2
5	Fig	Brown Turkey
6	Grapes	Perlette, Flame seedless and Punjab MACS purple
7	Grapefruit	Star Ruby
8	Guava	Shweta, Punjab Kiran, Punjab Apple Guava
9	Jamun, Phalsa and Karonda	Local
10	Lemon/Lime	Baramasi lemon/Kagzi lime
11	Loquat	Golden Yellow
12	Mango	Amarpali
13	Papaya	Red Lady 786
14	Peach	Shan-i-Punjab
15	Pear	Punjab Beauty
16	Plum	Satluj Purple /Kala Amritsari grafted
18	Pomegranate	Bhagwa
19	Sapota	Kallipatti
20	Sweet orange	Blood Red, Musambi

### Insect, pest and disease management

- Use of insecticides /pesticides should be avoided in nutrition garden. Spray of Bordeaux mixture comprising of 2 parts each of copper sulphate and unslaked lime dissolved in 250 parts of water can protect fruit plants from disease infestation during rainy season.
- Neem sprays can be used to control insect pests.
- PAU Fruit fly traps can be used in fruits like mango guava, peach, pear, plum, kinnow to protect fruits from fruit fly infestation.
- Good quality guava can be produced by covering the mature green hard fruits of rainy season with white nonwoven bags at the end of June to middle of July. It protects the fruits from fruit fly and also improves fruit size and quality.
- For mango malformation disease, malformed bunches should be removed and buried.
- To avoid damage of leaf curl virus in papaya, cover the plant with net to prevent attack of aphid. In case of infestation uproot the infected plant. Avoid excessive irrigation to papaya to prevent colour rot disease.
- Do not plant baramasi lemon near wall or building to avoid cracking.

For further interaction, please write to:

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### TECHNICAL SPECIFICATIONS

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