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In spite of the fact that India is climatically favourable for production of a variety of tropical, sub-tropical and temperate fruits, our per capita per day consumption of fruits is very low (80 gm) so in comparison to developed countries (250-450 gm) and developing countries like Hungary, Philippines, Pakistan (100-200 gm). 1. For that reason, there is a vast scope of growing fruit crops in our country because the total area under fruit crops is very less. 2. About majority of ' Indian population is vegetarian and production of fruits is far less. 3.

With installation of Agro-industries and storage facilities, improvement in transport facilities, preservation and canning will have great demand. Govt's promotion of Agricultural exports through Agri-export zones creation will ensure remunerative price to farmers. 4. The multiple cropping system in the orchards also generate more avenues for employment apart from giving additional income. The intensive horticultural practices may accommodate skilled and trained personnels where unemployment is a serious problem. 5. India processes only 2% of its produce as against 45% in Philippines. So there is a more distance to cover for catching up the world market with Govt, support in the value-added products.

6. The fruit production has a great possibility in trade and industrial development. A large number of ancillary industries and trade sectors are also developed. 7. With our rapid increasing population, the pressure on land is likely to continue and size of holding will remain small in the foreseeable future. Moreover fruit crops give much more production per unit of area and are certainly paying more than ordinary crops.

9. After achieving the food security when the Govt, is planning for agricultural diversification, at this moment fruits may well fit in crop diversification programmes.

Problems of fruit cultivation:

While fruit cultivation is having lots of promise but still some of the problems dog up the idea of a successful fruit cultivation. Some of the national problems like malformation, alternate bearing and spongy tissue in mango still defining solution let no headway has been achieved in production of superior quality planting materials. There is lack of varieties resistant to biotic and abiotic stresses.

Due emphasis needs attention of Integrated Pest Management. However, the most important problems being faced in the fruit growing, are: (i) High initial orchard investment: Costs of plastics, expenditure on layout, the ordinary farmer having small land holding can't afford to establish an orchard without any capital support. (ii) Long juvenile period of fruit plants: Stretching upto 10 years; fruit orchards do not ensure any return. Small and middlefarmers cannot wait for such a long gestation period without substantial income. It can be compensated by planting filler plants like Kinnow, Plum, Papaya, Guava and vegetables. (iii) Lack of high quality fruit plants: A healthy nursery plant is the foundation of an orchard, use of poor planting material is the major constraint limiting higher production in most of the orchards. (iv) Faulty marketing system: The marketing of fruits in India is the most sorry aspect of fruit industry. The lack of marketing facilities is a big hurdle in the expansion of horticulture.

The fruit crop is auctioned by the growers to the middle man who can get better profit from this produce. a. Very lengthy procedure and cost more to the consumer. Solution: (Cooperatives) (v) Lack of storage and transportation facilities: The post-harvest losses account for 25% of the fruits. After harvest, the fruits need to be transferred to cooling units within half-an-hour.

Due to poor cold storage and controlled atmospheric storage facilities the losses further increase. Inefficient transportation system aggravates the position. (vi) Lack of processing units: When all over the world processing of fruits and vegetables. Processing units absorb the profit in the markets thus favouring the farmers income. But the processing industry may be located preferably established in the private sector with proper safeguards for the interests of the producer. (vii) Perishable nature of fruits: Most of the horticultural produce is highly perishable because of high water content. In spite of very heavy losses, very little work has been done on post harvest handling and storage systems.

(viii) Low purchasing power of people: The fruits are sold at very high cost in the markets low income and middle income group has low purchasing power and do not purchase, the fruits regularly. a. There is a strong need for developing the co-operative system of marketing, so that the fruit growers get decent return of their investment.

Also the production of fruits has to be increased by putting more area under fruits with a view that the fruit should be available at reasonable price in the market. (A) Fruit Drop: i. Fruit trees usually bear a large number of flowers

and only a small percentage of which are enough to give a normal yield. ii.

When the fruit set is much more than the trees can carry to maturity these will be drop of fruits at various stages of fruit development.

iii. Such a drop will be beneficial and natural to the trees and it will prevent exhaustion of the resources and breaking of branches by over bearing. First drop: Flowers with aborted pistils drop off at this stage. Lack of pollination, lack of stigmatic receptivity defective flowers and some fertilized poor pollen transfer are causes. 2nd drop: Fortnight after first drop. Includes unfertilized and fertilized flowers. 3rd drop: Drop occurs when fruits are of 'minable size' due to the formation of abscission layers on the young fruit stalks. The above drops which occur in 3 stages are beneficial to the fruit tree.

Pre-harvest drop: Loss to the grower. At this stage, half developed and 3/4th developed fruits are, shed due to many causes. This is a loss to the growers and is a serious problem. Causes of fruit drop: 1.

Mechanical: Wind and hailstorms cause fruit drop. 2. Climatic factors: High temperature, low humidity, very low temperature best on the formation of abscission layers, consequently fruits drop. 3. Physiological factors: Abnormal fluctuations of soil moisture favour heavy fruit drop. 4.

Nutritional: Lack of available N and several other nutritional factors may cause fruit drop. 5. Cultural practices: Deep digging and deep ploughing during the fruit development phase will damage the roots cause the fruits to shed. 6.

Pathological practices: Incidence of parts and diseases will cause more shedding of fruits. 7. Varietal factor: Within a kind of fruit, the varieties differ among themselves in the extent of fruit drop. Prevention: i.

The pre-harvest drop may be reduced by controlling the causes to a certain extent. ii. Proper and timely culture such as irrigation plant protection, provision of polliniser and wind breaks will help to prevent or reduce the amount of fruit drop. iii.

In the final stage of fruit growth, a rapid decrease in auxin content is correlated to segmentation of endosperm causing preharvest fruit drop. In high concern of auxin supplied exogenously may inhibit fruit drop. iv. NAA (10-20 PPM) reduces drop of fruits in pome, fruits such as apples and pears. v. 2, 4-D (less than 20 PPM) checks drop in citrus fruits. vi. GA at 60 PPM reduces the drop in Jamun.

vii. Great care, must be exercised on the use of hormones as it is possible to cause much damage to the foliage, and new growth. (B) Alternate bearing: Alternate or biennial bearing is an age old horticultural problem and is also designated as irregular bearing. An year of optimum or heavy fruiting is followed by an year of little or no fruiting. Essentially these tree, carries optimum load of crop in one year but it fails to flower and produce a satisfactory crop in the following year.

This phenomenon is observed in most of the perennial crop in the following year with varying degrees. Any perennial plant, which carries a heavy crop load in the current year is likely to bear less in the following year. However this phenomenon is distinctly expressed in horticultural crops like mango,

olive, coffee, tamarind, apple, coconuts. The heavy crop year is 'on year' and the less bearing is 'off year'. If an 'on year' is regularly followed by an 'off year', then it is called "biennial or alternate bearing". Irregular bearing on the other hand refers to the rhythm of a heavy crop followed by more than one year of poor crops. Disadvantages: 1. Compared to regular bearer, the average yield is less.

2. The quality of fruits may be inferior during 'on year'. Cropping compared to regular bearer. 3.

More breakage of heavy loaded branches is likely on 'on year'. Causes: 1. Genetic causes: Certain trees which belong to the particular species or genus or family express this tendency always e.

g., apple, pear, plum and apricot belong to Rosacea have a tendency. Within a species also cultivars differ on this tendency e. g.

in mango, (Bangalora, Neelum, Mallika) are regular bearer but Mulgova, Dashari are alternate bearing. 2. Bearing habit: Terminal flower bud formation is often regarded as an explanation for alternate bearing in apple.

The formation of spurs (which is a terminal bearer) is strongly stimulated in the 'off year', hence in the one year, the crop bears heavily. 3. Age of the tree and size of the shoots: In biennial apple, this tendency is found to be more, in young trees than in older trees.

In mango, it has been found that bearing shoots of 8-10 months old branches produce flower buds. 4. C/N ratio: It plays important role in creating favourable conditions for the synthesis and action of the substances

responsible for flowering. 5. Hormonal balance: Higher levels of auxin like substances and inhibitors (similar to ABA) and lower levels of GA3 like substances are vital for a fruitfulness shoot in mango.

Remedial measures: 1. Scientific management of orchards: A proper schedule of numerous and fertilizer application, intercultural operations, irrigation at fruit set and fruit developmental stage etc. will help.

2. Deblossoming: Can be helpful only at full develop stage of panicles. 3.

Smudging and chemical regulation: Practice of inducing flowering in mango by smudging is being followed in Java and Philippines. 4. Pruning: Only old trees may respond to pruning. It can be, helpful in reducing irregular bearing and not alternate bearing.

5. Growing regular bearing variety: Regular bearing varieties are to be preferred.