



## Intercropping in pre-bearing orchard to maximize land use efficiency

Rachna Singla and Jasvinder Singh

Krishi Vigyan Kendra, Patiala (Punjab) India

(Email: [singlarachna77@gmail.com](mailto:singlarachna77@gmail.com))

Planting of orchard involves a high initial expenditure until the fruit trees attain the bearing age. This bearing age differ from species to species and amongst some varieties also.

When the orchard is young and non-bearing, there is a considerable vacant space between the trees which is not utilized by permanent plants for a long time, since the trees and their root system occupy relatively a small portion of the total area on which they planted. Such land, if allowed to remain vacant and neglected, it results in not only deteriorate its fertility but also a harbouring place for obnoxious weeds. Hence, it is highly desirable that intercrop should be grown in the space between the rows of young plant for efficient utilization of land. Intercropping in orchard also maintain a mild micro-climate condition around the trees which favour the better tree growth. Also, intercropping helps in reducing nutrient losses through leaching. Further more, intense heat during the summer months is very destructive to organic matter when the soil surface is kept bare in young orchard. It is, therefore, desirable to grow some leguminous crops such as moong, mash, moth or cowpeas in pre-bearing stage or long as vacant space between the fruit plants provide cover to the soil. these crops also add organic matter to the orchard soil.

Inter-cropping of orchard needs to be practices with utmost care in void to any harmful effects to the permanent trees. The permanent trees in the orchard should always be given primary consideration. Careful selection of intercrops with primary attention paid to the permanent trees would prove beneficial in maintaining the good vigour and health of the tree.

In general, intercrops should

be planted well away from the permanent plants and their requirement for moisture and nutrient be met separately and should not compete with those of permanent fruit trees. With increasing the age of fruit plant, the area under intercrop should be progressively decreased to avoid the competition. One must be vigilant to adopt the timely and effectively control measures against pests and diseases affecting the intercrops.

**Selection of intercrops:** Selection of intercrop depends upon number of factors such as climate, nature of soil, location of orchard, kind and age of fruit trees in the orchard, mode of irrigation, availability of labour, transport etc. and above all, means and general capacity of the fruit grower. Whereas, wrong selection causes many problems for fruit trees which lead to low income to the growers.

Intercrops should preferably be short duration, shallow rooted, vegetable crops or even a quick growing fruit plants with juvenile period. Amongst vegetable crops, one may profitably go for onion, tomato, radish, carrot, beans, cauliflower, cabbage and spinach. Heavy feeder like colocasia, ginger, turmeric and grain crops should be avoided altogether. Amongst fruit crops (as inter crops) one may grow phalsa, papaya, guava in mango, litchi and pear fruit crops as a filler plants.

If young orchard is located near the big town with adequate market facility, then intercrop such as peas, radish, carrot, cauliflower, cabbage, tomato etc., which can fetch better income, whereas the orchard which are far away from the towns would be best suited for growing crops such as pulses, onion, garlic, potato etc.

The growing of green manure crops in the orchard has been recommended all over



the world. They add much needed organic matter to the soil and in-combination with inorganic fertilizers maintain the soil fertility, substantially increasing vegetative growth and fruiting of permanent fruit plants.

The exhaustive and tall growing crops such as cotton, *Jowar*, maize and bajra should not be grown in the orchard as these crops deplete the soil fertility and prove harmful by shading the fruit trees. The creeping type vegetables like bottle gourd, *Tinda*, *Petha*, *Karela* if grown should always be kept away and never be allowed to climb the fruit trees. As far as possible, select those intercrops whose irrigation needs synchronise with that of orchard trees. For example in peach and pear orchard (deciduous orchard) no intercropping with such crops as berseem, potato, tomato etc should be done with *Rabi* or *Kharif* seasons. Otherwise, these fruit trees may suffer from root

rot or any devastating disease because of the excessive watering to the intercrops which is not required to the deciduous fruit trees being under dormant conditions in the winter months. In area of shortage of water supply, the cultivation of intercrops should be discourage as they compete for limited available water.

It must always be kept in mind that our major interest lies in the fruit trees and in a bearing orchard the intercrop should be considered only as a weed. To get best results, therefore, growers are advised not to continue the practice of intercropping beyond the fourth or fifth year from the date of planting the orchard. Excellent growing condition for the trees should be maintained at all times and the pests and diseases of the intercrops must be kept under control.

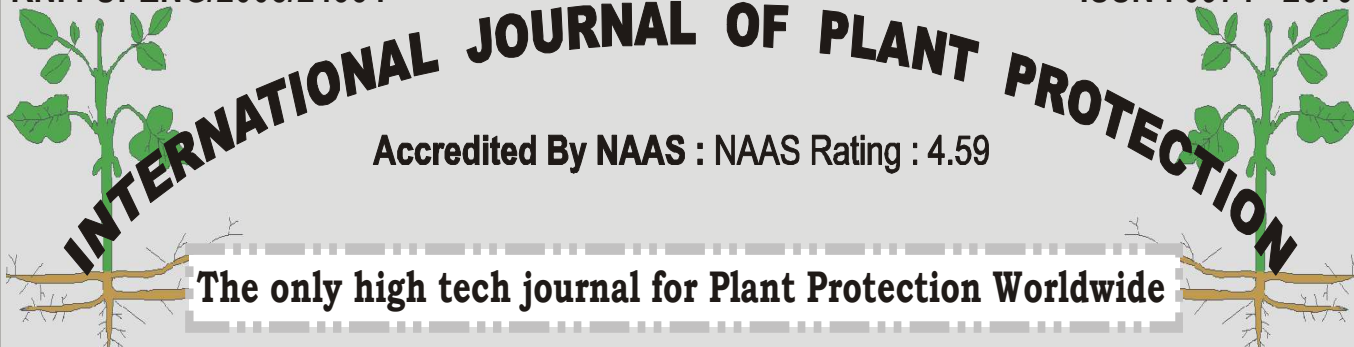
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