



Passion Fruit

a money spinning intercrop for coconut garden

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Coconut is a crop which prefer to grow along with other companion crops. Growing intercrops in coconut holdings produce more food and agricultural produce ensuring food security for many people of urban and rural areas. It also helps to increase the income from coconut holdings, generate employment, livelihood and alleviate poverty among farming communities. Coconut based integrated cropping systems enable better utilization of natural resources and improves the soil fertility due to the continuous biomass addition by the subsidiary crops. Hence it is recommended as one of the management practices to increase the productivity of coconut also by enriching the soil fertility and also for generating higher income from unit holdings. Coconut holdings as a mono crop does not fully utilize the basic resources like soil, water and sunlight available in the garden. In a scientifically planted coconut garden i.e., at a spacing of 25 feet x 25 feet, 25% of soil only is used by coconut and the remaining soil is left aside for growing suitable companion crops. These holdings neither provide gainful employment opportunities for the family labour throughout the year nor generate

sufficient income to meet the family requirement. Several crops like cocoa, nutmeg, clove, pineapple, pepper, banana, vegetables etc are identified through research as good companion crops for coconut.

Farmers are now looking for best companion crops in coconut garden as cultivating coconut alone is not profitable. To cope up with the increase in labour cost in adoption of management practices, harvesting, weeding etc., farmers are thinking of cultivating suitable money spinning companion crops with less cost of production in coconut garden. A new traditional semi-perennial fruit crop that attract the farmers as money spinning intercrops in coconut garden is Passion fruit (*Passiflora edulis*). It is a semi-perennial, herbaceous, tendril-bearing climber which can be cultivated as an inter crop along with other crops in coconut holdings. It is cultivated mainly for its multi-seeded delicious berry fruits. Passion fruit is a native of Brazil and it is mainly grown in India in parts of Western Himachal Pradesh and Eastern States of Manipur, Tripura and Meghalaya in India. This fruit is mainly consumed as juice rather than as a fresh fruit. Now this fruit is having very good demand in south

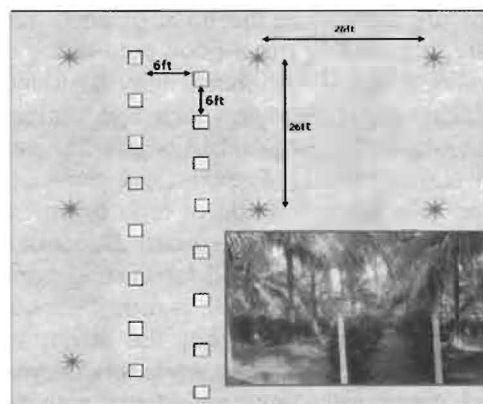


sea level. There are many varieties of Passion fruit available. However the yellow and purple colour passion fruit and hybrid variety (purple x yellow) are famous varieties recommended for commercial cultivation. These varieties can be cultivated in the partial shade of Coconut gardens above 25 years old. Yellow passion fruit is best for cultivation in tropical low elevated southern coconut growing States. Hybrid variety developed by Indian Institute of Horticulture Research is a high yielding variety with purple coloured fruit is also suitable for cultivation in coconut garden.

Planting Passion fruit in coconut garden

Passion fruit vines are usually grown from seeds. Seeds are sown in nursery beds or in poly bags. When the seedlings attain 20-30 cm height, they are transplanted to the coconut gardens of age above 25 years. However, they can also be grown through vegetative cuttings. Well matured vines with 3-4 nodes are cut into length of 22 -30 cm . Cutting should be well rooted in the nursery or poly bags and ready for planting in 90 days. Average economic life of fruit vine is seven years.

Seedlings/rooted cuttings can be used for planting in the coconut garden. Spacing recommended for planting Passion Fruit as an inter crop in coconut garden by Srilankan Coconut Cultivation Board is 6 ft x 6 ft in the middle of two rows of coconut planted at a spacing 26 ft x 26 ft as shown in the figure below.



Indian market due to its nutritional and medicinal benefits. This delicious fruit is an excellent source of dietary fibre, vitamin C and minerals like protein, iron, copper, magnesium etc.

People in the urban areas who visit super markets get chance to taste this wonderful fruit. On tasting the juicy flesh inside the purple fruit may make people think "why I was not aware of this fruit before". Impact of this fruit is slowly finding ground in the urban areas of the states of Kerala and Karnataka. Farmers in some parts of Kerala and Karnataka have already tried this crop successfully in coconut garden as companion crop to coconut. In Sri Lanka it is recommended as a semi perennial inter crop in coconut garden.

Climatic conditions required for growing coconut in tropical and subtropical regions are suitable for growing passion fruit also. It requires well drained soil, well distributed rain fall and ideal with temperature 20°C to 30°C for getting best yield. Soils having enough moisture and organic matter is best for cultivation of passion fruit. This fruit vine grows best in light sandy loams and sandy clay loam, with a pH of 6.5–7.5, rich in organic matter. It grows in altitudes ranging from 750 to 1500 m above mean

Around 400 fruit vines can be planted in one acre of coconut garden. Planting should be done preferably at the beginning of the rainy season. Pits of size 45 cm x 45 cm x 45cm are prepared at least 30 days in advance, enriched with organic matter and top soil and left to weather. The young seedlings are to be planted very carefully so as to avoid injury to the roots. Irrigation and shade should be provided

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after transplanting the seedlings in coconut gardens in summer season. In one acre coconut plantation, planted at a spacing of 25ft x 25ft, 400 passion fruit plants can be planted at spacing of 6ft x 6ft.

Temporary support at the base of each plant is necessary to train it to get a good hold of the wires of the trellis. About 4– 6 laterals may be trained in the direction of the overhead wire and the sooner they come to a horizontal position on the pandal, they will start flowering. Passion fruit vines should be trained to a panthal made of rope or iron wires like other vegetables like bitterguard. Coconut trees can also be used as standard for making pandhal. A standard pandal, 7 to 8 ft tall, is recommended for passion fruit cultivation as it has the advantage of giving the best spread of vines, early returns, greater yield and accessibility for pruning and harvesting. Bamboos and tree branches are hung on the wires of the pandal. This gives support and provides better spread of the vines on the trellis.

Pruning is necessary to keep the vines within bounds, to make harvest easier, to keep the plants productive by maintaining vigorous growth and facilitate new shoot formation. Pruning is usually done after harvesting the crop. It is done by cutting back laterals to the nearest active bud.

Systematic pruning should be followed in passion fruit cultivation as it encourages the new growth of vines which results in high yield of fruits. Pruning should be done after harvesting by cutting the laterals back to 4 to 5 buds. For best yield of passion fruit it should be supplemented with organic manures and vermi compost at the rate of 10kg per vine. Regular watering is required in dry season to keep the vine flowering and fruiting continuously. Passion fruit vines start fruiting after 10 months of planting and fruit bearing reaches optimum after 15 – 18 months. It takes about 80-90 days for the fruit to mature. The fruit yield depends on the variety and weather condition. The average yield is 10 tonnes per hectare in the case of yellow/purple. In the hybrid variety the yield would be high and is about 18-20 tonnes per hectare. In general the average yield is 8-9 tonnes (200-250 fruit) in a vine in an year. The present retail price in supermarkets for passion fruit in Kerala is Rs. 220 per kg . If the farmer gets a farm gate price of Rs. 40/kg the total income by sale of passion fruit from one acre coconut garden would be Rs. 1,60,000/- Considering the low cost production of high income passion fruit, it is ideal to cultivate in coconut holdings for increasing the income from the holdings and to provide a healthy delicious fruit to the society. ■