

Economics and Farmer's Benefit of Turmeric and Ginger Plantation as Intercrop in Mango Orchard

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Growing more than one crop at the same time and on the same land can be huge advantage and benefit for the farmers. The method of growing more than one crop on the same land is called intercropping. Mango is one of the most important and widely cultivated tropical fruits of the world. In India, it is grown in an area of 23.78 lakh hectares with an annual production of 161.98 lakh tones (Indian Horticulture Database-2012). It is proved in RDS Seed Farm, CCS Haryana Agricultural University, Hisar that the cultivation of turmeric and ginger under mango trees earn some profit without harming the mango tree.

In Regional Research Station, Buria at Yamunanagar during 2012 to 2017, an experiment revealed that intercrops of turmeric and ginger did not affect the growth (stem girth and plant height) and yield of mango. Ginger resulted in highest net returns of Rs. 179,996 per hectare with Benefit- Cost ratio of 2.04 followed by turmeric Rs. 129,232 per hectare with Benefit- Cost ratio 1.86 as compared to sole crop of mango i. e. Rs. 100, 118 per hectare with Benefit- Cost ratio 1.81. It is observed that both the intercrops can successfully be grown under the mango trees without affecting their growth and yield adversely and the space can be utilized for producing additional income per unit area.

Another experiment on intercropping in a junior adult bearing mango orchard under rainfed upland situation with intercropping on main crop mango and filler crop guava was conducted during 2009-10 and 2010-11 in the mango orchard of Gopalput, an adopted village of Regional Research and Technology Transfer Station (RRTTS), Orissa University of Agriculture and Technology, Semiliguda, Koraput, Odisha. The location specific various profitable intercrops were grown in the mango orchard as treatments. The experiment revealed that the intercropping was found effective in increasing the plant growth and fruit yield of main crop mango. Among different mango based intercropping systems, the mango + guava + turmeric and mango + guava + ginger incurred maximum average cost of cultivation



of Rs. 1,19,100 and Rs. 1,09,100 per ha respectively. The higher cost of cultivation was mainly due to higher expenditure of turmeric and ginger intercrops towards utilization of labourers (44.30% and 48.39%) as well as planting materials (25.18% and 18.33%), respectively, as compared to other intercrops like cowpea, tomato, ragi, upland paddy etc. The average gross return of mango + guava + turmeric was found to be highest (Rs. 2, 38,540 per ha) followed by mango + guava + ginger i.e. (Rs. 1, 99,700 per ha). This was possible due to higher yield performance of the intercrops like turmeric and ginger in the mango orchard. Although intercropping in mango orchard was profitable in all cases, the highest average net return of Rs. 1, 19,440 per ha was obtained with mango + guava + turmeric.

Turmeric plantation as intercrop in mango has been found not only to assist in suppressing the population of trunk borers, termites and gummosis causing pathogens in the soil, but also provided additional income from the harvest of the rhizomes, 9 months after planting. Turmeric root exudates in rhizomes present in soil probably assisted in disease suppression by reducing the activity and population of trunk borer larvae and soil-borne fungus. The orchard was also found to be free from termite attack after planting turmeric as intercrop in mango. Turmeric plantation as intercrop can find application in organic farming systems, to control various soil borne pests and diseases in several fruit orchards.

Now a days intercropping on mango with turmeric and ginger has practiced by farmers across the country and it is widely practiced farming method that has proved to be more productive. To provide maximum yields, farmers across the country have been challenged to adopt the best farming methods and technology. Planning is a very important step required while practicing the intercropping method. This includes choosing the right varieties of crops, soil, and climate. It is considered not to have crops competing with each other for space, sunlight, nutrients, and water. Therefore, farmer's benefit of intercropping on mango with turmeric and ginger are reduction in soil erosion and space utilization. It maintains soil fertility, utilizes the resource efficiently and controls pest and weeds. It is highly profitable for trial field as well as farmer's field.

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