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Effect of different intercrops on yield and quality of mango production in new alluvial zone of West Bengal

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ABSTRACT : An experiment on the performance of intercropping in mango orchard (cv. HIMSAGAR) was conducted at Central Research Station, Gayeshpur, Bidhan Chandra Krishi Vishwavidyalaya, Nadia, West Bengal to study the suitability and profitably with different intercrops of cowpea, French bean, arhar, soyabean, lentil, blackgram and chickpea during the period 2010-2012. The age of the plant was 7 years old with a spacing of 10x10m which provide the utilization of land space between the plants as an intercrop. In respect of total number of fruits / tree, average fruit weight and fruit yield (kg/ha) were noticed a significant variation among the treatments. The pooled data reveals that the maximum number of fruits 192.41 / tree and yield 46.09 kg / tree were found in mango + cowpea whereas maximum fruit weight (254.16 g) in mango + lentil. Most of the physical parameters such as fruit length and breadth maximum were recorded (8.20 cm and 7.21 cm, respectively) in mango + cowpea. But, in case of peel weight (35.67 g) was highest in mango + soyabean whereas the higher stone weight (35.79 g) was in sole crop (mango) only. Again, pulp weight and pulp: stone ratio (193.53 g and 5.80) were observed in mango + French bean, respectively. The quality parameters showed non-significant variation among the different treatments in which highest TSS ((17.88 ^{0} Brix) was observed in mango + lentil, where maximum reducing sugar (4.37 %) was in mango + soybean closely followed by mango + lentil (4.30 %). In case of acidity, the lowest acidity (0.14 %) was occurred in mango + lentil and mango + French bean. It was clear from the investigation that the more yield was from the main crop along the intercrop as compared with the clean cultivation.

KEY WORDS : Mango, Intercrop, Yield, Quality

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Mango (*Mangifera indica* L.) is one of the most luscious fruit of the world, which occupies a prime position in the international fruit processing industry of the world. It is the most choicest and popular fruit among the people of orient and is designated as the 'King of fruits' (Purseglove, 1972) because of its excellent flavour, attractive fragrance, beautiful shades of colour and delicious taste with high nutritive value. Mango is part and parcel of the cultural heritage of India. No other fruit has such a remarkable records in literature, poetry, mythologal, legendry, history, art and sculpture as that of mango. West Bengal being a major mango producing state in India in terms of area and production and new mango plantations is also necessary every year. However, the initial investment is very high to establish a mango orchard and beyond the economic reach of small and marginal farmers. In view of this, during the young age of the plant, growing of intercrops has been advocated in order to get some additional income. Information regarding effects of different intercrops on the growth and yield of mango plants are lacking in alluvial zone of West Bengal. However, some studies were conducted in other parts of the country (Sarkar *et al*., 2004, Jain *et al*., 2006, Ratha and Swain, 2006 and Raut, 2006). Apart from giving good returns, intercropping prevents weed growth; reduce nutrient loss through leaching and surface run off as reported by Bose *et al*. (1999). Therefore, the present experiment was conducted with a view to study the suitability and profitability aspects of different intercrops for young mango orchard cv. HIMSAGAR.