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Agri and vege - horti systems with mango in Gangetic alluvial tract of U.P.

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ABSTRACT

Alone Dashari mango cultivation is being adopted by farmhouse holds of U.P. since long time. The mango based agri-horti system with valuable field crops can widely be accepted. On the basis of the suitability of this system, the agricultural scientists have recommended this practice to the farm families of Gangetic alluvial part of U.P. The farm families reside in the central part of U.P. have tested and accepted mango based cropping system. The scientific team of C.S.Azad University of Agriculture and Technology, Kanpur has studies the extent of diffusion of this system under World Bank Aided Project. The farm families of Marhara, Soron, Kashganj, Patiyali, Ganj Dundwara blocks of Etah district adopted the cultivation of wheat, lentil, chikori and oat (green fodder), potato and brinjal in association of mango. Potato, potato+cucurbits, cucurbits after potato, brinjal, vegetable pea, cucurbits after vegetable pea, garlic and onion after potato in association of mango are being followed by farmhouse holds of Sandila block of Hardoi district. Likewise, the farm families of Auras, Miyanganj, Hasanganj, and Safipur block of Unnao district, Kamalganj and Kaimganj blocks of Farrukhabad district and Malihabad and Mal area of Lucknow district followed the wheat cultivation in association of Dashari mango. Inter-cultural operations, water management and manures and fertilizer management of field crops improved the flowering and fruiting of mango. At initial stage, mango gave 20-25 q/ha fruits. Wheat, lentil, chikori, oat (green fodder), potato, brinjal, green vegetables of cucurbits, green pods of vegetable pea, garlic and onion yielded 30, 10, 120, 380, 210, 215, 185, 90, 75 and 260 q/ha, respectively. The mango based cropping systems have maintained cash flow system and improved the standards of living of farm families and created healthy environment for soils, humans and animals.

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Fruit crops *viz*. guava, mango, aonla, ber and citrus are commonly grown in the central tract of U.P. Among these fruit crops, mango is the king of this tract while guava covers the major part of sandy loam and loamy sand group of soils, located at riverside. The alluvial soils of U.P. has deeper depth and is most suitable for the cultivation of garden and field crops, therefore, mango based agri-horti system a viable option. The mango has slow growing nature and it plant at wider space. This provides an opportunity to use the available natural resources.

In younger garden of mango, the field crops can be economically harvested up to 5-6 years and some time 8-9 years. The younger mango trees have little or no adverse effect on growth and yield of field crops. Therefore, well-established mango based cropping systems have been disseminated on the farmers' fields of alluvial soils. The extent of mango based cropping systems and harvested yield levels of different crops have been studied under World Bank Aided Projects.

MATERIALS AND METHODS

The study sites are located in the central Gangetic plain of U.P. The selected blocks of different districts typically represent soils; climate and socio-economic condition of Agro-Climatic Zone IV and V. The twenty years mean annual rainfall of area is 832 mm. The length of growing period of representative area varies between 120-150 days. The soils of representative area developed over alluvium. The major soils belong to loamy sand, sandy loam and loam and are most suitable for mango based cropping system. No major constraints recorded for the diffusion of mango based agri-horti system. The basic information's of mango based cropping system of selected area have been collected by RRA technique while primary data recorded by PRA technique.

RESULTS AND DISCUSSION

The production technology followed in agri-horti system and yields recorded under mango based cropping system have been reported in Table 1. The important results are discussed below:

Mango:

The farmers of the selected sites planted the Dashari mango at the distance of 8x8 meter in rows under agri-horti system. The farmhouse holds harvested mango fruits by 20.00 –25.00 q/ha, at initial stage from agri-horti