

## Cultivation of crops in association of mango under two tier system of agro forestry

R.A. SINGH, MOHD. SHAMIM, PRANA VIR SINGH, M.K. SINGH AND R.K. PANDEY

Accepted : August, 2008

### ABSTRACT

The study was under taken during 1997-98 to 2003 -04 under World Bank Aided Project of Uttar Pradesh. The objective of this study was to find out the extent of diffusion of agro -forestry with mango in mango growing tract of central U.P. The farm families of Marhara, Soron, Kashganj, Patiyali, Ganj Dundwara blocks of Etah district adopted the cultivation of wheat, lentil, chikori, oat (green fodder), potato and brinjal in association of mango. Potato, potato+ pumpkin, pumpkin after potato, brinjal vegetable pea, pu mpkin after vegetable pea, garlic and onion after potato in association of mango are being followed by farm house holds of Sandila block of Hardoi district. Likewise, the farm families of Auras, Miyanganj, Hasanganj and Safipur blocks of Unnao district, Kamalganj and Kaimganj blocks of Farrukhabad district and Malihabad and Kakori block s of Lucknow district followed the wheat cultivation in association of Dashari mango. At initial stage, mango gave 20-25 q/ha fruits. Wheat, lentil, chikori, oat (green fodder), potato, brinjal, green fruits of pumpkin, green pods of vegetable pea, garlic, onion and pumpkin green fruits in potato + pumpkin system yielded 30, 10, 120, 380, 210, 215, 275, 90, 75,260 and 185q/ha, respectively. The mango based cropping systems have maintained cash flow system and improved the standards of living of farm families and created eco-friendly environment.

See end of the article for authors' affiliations

Correspondence to:

**R.A. SINGH**

Directorate of Research,  
Chandra Shekhar Azad  
University of Agriculture  
and Technology, KANPUR  
(U.P.) INDIA

**Key words :** Dashari mango, Farm house hold, Gangetic, Alluvial, Cash flow, Eco -friendly.

**F**ruit trees *viz.*; guava, aonla, ber and citrus are commonly grown in the central tract of U.P. Among these fruit trees mango is the king of this tract while guava covers the major part of sandy loam and loamy sand group of soils, located at river side. The alluvial soils of U.P. has deeper depth and is most suitable for the cultivation of fruit trees and field crops, therefore, mango based agro -forestry system a viable option. The mango has slow growing nature and it is planted 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. Alone Dashari mango cultivation is being adopted by farm house holds of U.P. since long time. The mango based agro-forestry system with valuable field crops was found more remunerative. On the basis of the suitability of this system, the agricultural scientists have recommended this system 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 agro -forestry system. The diffusion extent of mango based agro -forestry system and harvested yield levels of associated different crops are the subject matter of this manuscript.

### MATERIALS AND METHODS

The study was carried out during 1997-98 to 2003 -04 in 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 soil of representative area developed over alluvium. The major soil belong to loamy sand, sandy loam and loam are most suitable for filler cropping with mango. Generally farmers planted Dashari mango at the distance of 8x8 meter in rows. The associated crop of wheat sown at the distance of 22.5 cm in 27 rows between two rows of mango and adjusted 77% plant stand. Lentil was planted 30cm apart in 20 rows between two rows of mango and adjusted 74% planted stand. Potato planted at the distance of 50 cm apart on 12 ridges between two rows of mango and adjusted 75% plant stand. Onion planted in 40 rows at 15 cm apart in the inter spaces of two rows of mango and 75% plant stand was adjusted. Pumpkin raised at 50-75 cm apart on every third ridge of standing crop of potato. Under this system 75% plant stand of pumpkin was adjusted. After harvesting of potato 3 rows of pumpkin were planted between two rows of mango at 200x50-75 cm apart and adjusted 75% lant population. Vegetable pea planted in 20 rows at 30 cm apart between two rows of mango and plant stand was adjusted 75%.