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Congenial companion cropping system of summer pulses with guava on riverine soil of U.P.

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Abstract : The adaptive trial was carried out for two consecutive years during 2004-05 and 2005-06 in the area jurisdiction of Zonal Agricultural Research Station, Mainpuri. The site is located in the catchments area of river Kali at right bank, having riverine soils. The three and four years well thrived newly orchards of guava were selected for congenial cropping system of agro-forestry. Three varieties of black gram *i.e.*, Narendra, Urd-1, Azad Urd-1 and Shekhar-2 and three cultivar of green gram *i.e.*, Narendra Moong-1, Samrat and Malviya Jagrati (HUM-2) were grown in the interspaces of cultivar Allahabad Safeda of guava. Cultivars Narendra Moong-1 and Malviya Jagrati gave almost equal yield by 10.50 q/h and 10.70 q/ha, respectively, from the interspaces of guava. The order of varieties performance was Malviya Jagrati (10.70 q/ha) > Narendra Moong-1 (10.55 q/ha) and Samrat (9.10 q/ha) in agro-forestry system of guava + green gram. Cultivar Shekhar-2 of blank gram gave highest grain yield of 9.85 q/ha closely followed by Narendra Urd-1 (9.50 q/ha) from the interspaces of guava. Azad Urd-1 yielded grain by 8.95 q/ha from the interspaces of guava. At initial stage, the average yield of guava fruits was recorded by 78.00 q/ha in companion cropping systems, which was higher over the sole cropping of guava (70.00 q/ha) under riverine eco-system.

Key words : Congenial cropping system, Generic variability, Shadiness environment, Umbriferous environment, Thermal heat

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Guava is one of the most important fruit and it is considered as apple of resource poor farm families because its orchards survive well on the denuded riverine soil of U.P. In India its position is forth after mango, banana and citrus, so far as area and production of major fruits are considered. Because of the hardy nature of the plant, it has high adaptability to wide range of soil and climatic conditions. Records suggest that it has been in cultivation since early time and gradually become a crop of commercial significance. Guava is prolific bearer and highly remunerative even without much care. Although, it is successfully grown all over India but U.P. is most important growing tract. The vicinity area of gangetic river and its tributaries has reputation of growing of the best guava. Previously the cultivation of guava confined as pure orchard but the sank size of holding stressed to farmers for parallel cropping.

In younger garden of guava, the field crops can be economically harvested up to 5-6 years and some time 8-9 yeras. The younger guava plants have almost nil adverse effect on growth and yield of field crops. In the context of increasing country demographic cereals and pulses may not be themselves fulfill the food requirement in future. The cereals and pulses in conjunction of fruit, root and tuber crops as secondary staples can meet the shortages of food. The pure cultivation of guava in orchards is an old practice. The parallel cropping in guava may widely be adopted by resource poor farm families, residing in the vicinity of gangetic river and its tributaries. Therefore, in younger orchards of guava agri-horti system with summer pulses under two tier system has been planned and executed on farmers fields in catchments area of river Kali at right bank in Bhogaon, Mainpuri (U.P.), is the subject matter of this paper.