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## Productivity and profitability of legume crop based Agri-horti system in arid region of Rajasthan

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Arid region is characterized by sparse and highly variable rainfall, extreme variation of diurnal and annual temperature and high evaporation. Shortage of rainfall results partially or completely failure of the crop production, thereby the region experience frequently drought, which directly affects the livelihood of the habitants of the region. Therefore, crop production alone is inadequate to sustain the livelihood in the region. Integration of arable crop production with perennial components like fruit crops can play pivotal role not only to provide assured production and income during adverse condition, but also it largely attributes in the improvement of soil fertility, microclimate modernization and moisture availability to the inter spaced grown crops. Keeping this in view a study was under taken to find out the effect of legume crop based Agri-horti system on the productivity and profitability in the condition of arid region.

The field study was carried out during 2011 to 2013 at CAZRI, Krishi Vigyan Kendra farm, Jodhpur. Three legume crops (green gram, mothbean and clusterbean) were tested as sole crop as well as inter crops with ten years old orchard of pomegranate and aonla. All the recommended package and practices were followed to grow all legume crops and fruit crops.

There was no significant effect on the yield attributing parameters of the crops grown either as sole or inter crop. However, the seed yield obtained in inter cropping system was lower than that of sole cropping. The highest clusterbean equivalent seed yield (4550 Kg/ha) was recorded with the inter cropping of green gram + pomegranate, which was 71.56% higher over sole green gram. Inter cropping of moth bean with pomegranate was observed next best combination for increasing clusterbean equivalent seed yield. Intercropping of green gram + pomegranate also fetched highest net returns (Rs 2,22,950) and benefit cost ratio (4.86). This was because of higher production of seed yield of green gram and higher market value of pomegranate fruit. Mothbean + pomegranate was the next best combination for realizing higher monetary benefit and benefit cost ratio. Among the intercropping combinations mothbean + aonla provided lowest net return (Rs. 89,305) and benefit cost ratio (1.73), while among the sole crops, mothbean resulted in lowest net returns (Rs. 20750 / ha) and benefit cost ratio (0.99).

### Biography

Hari Dayal has completed his PhD Horticulture from Dr. Bhim Rao Ambedkar University Agra (UP) and working as SMS (Horticulture) at Krishi Vigyan Kendra, Central Arid Zone Research Institute (ICAR) Jodhpur since 1997. He is involved in planning and conducting the training programme, Front Line Demonstration, Farmer Field School, On Farm Trial and transfer of horticultural technology like in-situ budding, raising of seedling of fruit and vegetable etc at farmer field at the KVK adopted villages. He has published more than 25 research paper and popular articles in reputed journals and magazines.

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