

## **Productivity of an Agri-horti-silvi System under Sprinkler Irrigation**

**R.K. Beniwal, N.D. Yadava and M.L. Soni**

*Central Arid Zone Research Institute, Regional Research Station, Bikaner*

The productivity per unit area is abysmally low in most arid farming systems in the tropics. Some of the reasons for lower productivity are mono cropping, low yielding crop varieties and cultivation of low value crops. The agri-horti-silvi system integrating agricultural crops with fruit trees on same piece of land may prove more remunerative (Awasthi and Meena, 2005). The introduction of irrigation in arid zone has opened a new avenue for assured production from crops even under adverse weather situations. However, the sandy soils with high infiltration rate require high water application. Use of micro sprinkler system can effectively minimize the water loss and increases the water-use efficiency of crops. Cultivation of annual crops in the interspaces of fruit and other trees may improve the productivity per unit area under micro sprinkler irrigation system. Perennial component in the field will work as shelterbelts and windbreaks, reducing soil erosion through winds during the extreme summers when no annual crops are there in the field (Yadava, 2005). With the above assumption, an experiment on intercropping of mustard with different trees was carried out under sprinkler irrigation system to find out the growth and yield performance of each component and the system as a whole.

### **Materials and Methods**

The experiment was conducted at research farm of the Regional Research Station of Central Arid Zone Research Institute at Bikaner during 2003-04 on sandy loam soil. Mustard was intercropped in