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Diversification in farming system based on watershed management technology

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ABSTRACT

The farm families of watershed areas are very analytical and they have computed overall net return in term of farming system rather than the mono component or cropping system. The majority of farmers adopted pulse base cropping systems due to better yield, better market facilities and higher net gain. Most of cropping systems pendle around the pulse crop as their water and fertilizer requirement is less than the cereals and oilseed crops. The enterprise wise economics of major farming systems was computed during 2003-04. The gram base farming system i.e. soybean- gram+1 graded buffalo, moong- gram+ 1 graded buffalo and moong-gram+1 mustard+1 graded buffalo required cost of cultivation and maintenance of Rs. 40950/ ha, Rs. 37460/ha & Rs. 37300/ha and gave net return by Rs. 26750/ ha, Rs. 20120/ ha & Rs. 23530/ ha, respectively. Similarly, moong- dwarf pea+1 graded buffalo, soybean- dwarf pea+ 1 graded buffalo and moong- dwarf pea+ mustard+1 graded buffalo gave net return by Rs. 19705/ ha, Rs. 23935/ ha & Rs. 22440/ ha, respectively. Jowar+ arhar long duration +1 graded buffalo farming system needed lowest cost (Rs. 31460/ ha) and provided least net return by Rs. 18240/ ha. In soybean base farming system, there is a major problem of soybean marketing in Bundelkhand tract of Uttar Pradesh.

Key words : Diversification, Farming system, Watershed management

INTRODUCTION

Farming system is one of the main approach wherein the risk in dealing with single component can be minimized and at the same time increase in the productivity through effective recycling can be ensured. With the consideration of above point the diversification in farming system was made and carried out on the farmers field of Jalaun district of Bundelkhand, part of U.P., based on watershed technology. The farmers of the selected area of watershed are very analytical and they accepted the diversification in farming system after computation of overall net income.

METERIALS AND METHODS

The study was laidout during 1989-90 to 2003-04. The experimental area of 747.80 ha of watershed is situated in Rendhar village of Jalaun district of Bundelkhand (U.P.). The height above mean see level is 149 meter. The site of watershed typically represent soil, climate and socio-economic condition of Bundelkhand region. Mean annual rainfall of watershed was 880 mm. The moisture availability period for the crop growth in the pilot area of watershed is 122 days. Water surplus, water deficit and AWC of watershed area were 95.63 mm, 912.03 mm and 150 mm, respectively. Soils of watershed area developed over alluvium and occur on nearly leveled to undulating old flood plains. Watershed soils belong to class II, III & IV of land capability class and were suitable for cultivation. The predominant hazards recognized in the watershed area were erosion due to runoff of excess water, root zone and climatic limitations. Watershed area was composed of highly eroded raker, parwa, kawar and mar soils having pH 8.0, organic carbon 0.27% available phosphate 9.6 kg/ha and available potash 270 kg/ha, therefore, fertility status of experimental site was low. The whole watershed area was treated with different soil and water conservation measures. The rainwater was harvested in twenty five check dams and five big farm ponds. The treatment consisted moong – gram +1 graded buffalo, moong -pea+1 graded buffalo, moong -lentil+1 graded buffalo, soybean- pea+1 graded buffalo, soybean-gram +1 graded buffalo, soybean-pea +1 graded buffalo, soybean- wheat+1 graded buffalo, moong- gram +mustard+1 graded buffalo, moong- pea+ mustard+1 graded buffalo, moong-lentil+mustard+1 graded buffalo, moong-wheat+ mustard+1 graded buffalo, and jower+ arhar long duration+ 1 graded buffalo. The recommended conservation agronomic practices were followed in the crops raised under various cropping systems. The protective irrigations were given to the crops as and when required. One graded buffalo was integrated

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