



Studies on effect of parallel crops on productivity of groundnut (*Archis hypogaea* L.)

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Abstract : The present investigation was laid out at Zonal Agricultural Research Station, Mainpuri, C.S. Azad University of Agriculture and Technology, Kanpur with the objective to workout effect of parallel crop on productivity of groundnut in Semi-Arid Tropics of Uttar Pradesh. The sole crop of groundnut significantly registered higher pod yield. The maximum reduction in pod yield by 26.55 per cent was noted with companion cropping of pigeonpea while it was 17.25 per cent with sesame and 19.75 per cent with foxtail millet. The companion ship of groundnut+pigeonpea gave 4 per cent more yield advantage. Relative crowding coefficient was calculated higher in groundnut + pigeonpea, resulted in the pigeonpea produced more yield than the expected yield and showed the dominancy over groundnut while other two companion crops did not show dominancy. Higher aggressivity in groundnut + pigeonpea indicated the bigger difference between actual and expected yield of pigeonpea. Competition ratio was computed higher in groundnut + pigeonpea by 1.50 times. Beside to above, intercrop pigeonpea precluded from the incidence of nematode with eco-friendly management. Therefore, the companion cropping of groundnut + pigeonpea may only be suggested for the farming and other two systems of companion cropping should be deleted from the recommended agro-techniques.

Key Words : Relative crowding coefficient, Aggressivity, Competition ratio, LER

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INTRODUCTION

Companion cropping has long been recognized as a very common technology throughout the developing tropics. Its importance was highlighted almost 60 years ago in a very comprehensive review by Aiyar (1949). Historically, however, it has been regarded as a primitive technology which gives way to sole cropping as a natural and inevitable consequence of agricultural development. More recently it has been realized that companion cropping remains an extremely wide spread practice and it likely to continue, so far at least the foreseeable future (Okigbo and Greenland, 1975).

The recent trend in the changing agriculture, the cultivation of more than one crop simultaneously to avoid crop losses and combat problem of pest and disease susceptibility. In Uttar Pradesh pigeonpea, pearl millet, sorghum, small millet, sesame are intercropped in groundnut

by farmers. The constraints received from the farmer's fields, that they do not harvest the full yield from companion cropping systems due to inadequate technology followed by them, whatever, yield and profit meet from the association ship, they become satisfy.

With the view to find out the congenial crop for companion cropping of groundnut, the experiment was conducted with different crops.

MATERIALS AND METHODS

A field experiment was laid out for two years, during the monsoon season at Zonal Agricultural Research Station, Mainpuri, situated in South-Western-Semi-Arid Zone (5), Uttar Pradesh. The soil of the experimental site was sandy loam having pH 8.6, organic carbon 0.13 per cent, total nitrogen 0.01 per cent, available phosphorus 9.0 kg/ha and available

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