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RESEARCH PAPER

Weed management practices on nutrient removal by weeds and its relation to yield of finger millet in eastern dry zone of Karnataka

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Abstract : An investigation was under taken to study effect of weed management practices on nutrient removal by weeds and its relation to yield of finger millet in Eastern dry zone of Karnataka at Main Research station, Hebbal, Bangalore. Different weed management practices involving herbicides, mechanical weeding, hand weeding were imposed in finger millet (GPU-28) crop with RCBD design during *Kharif* 2007. In finger millet weed density were recorded at 30 and 60 DAS at harvest the density of species *C. rotundus, D. marginata, C. dectylon, C. benghalensis, A. conyzoides and S. acmella* continued in higher proportion, yet lower than 60 DAS. The trends were observed at 60 DAS with regard to weed management continued at harvest. In finger millet, weed nutrient uptake recorded lowest in hand weeding plots compared to others, with 9.95, 1.08, 4.94, 3.65, 2.99 and 1.74 kg/ha of N, P, K, Ca, Mg and S, respectively. In finger millet highest grain and straw yield was obtained in butachlor applied plots (4436.15 kg/ha and 8295 kg/ha, respectively). Efficient control of weeds is necessary to increase the yield. By controlling weeds one can reduce the uptake of nutrients by them, there by making it available to crops and reduce the cost on excess nutrients application. Integrated weed management with combination of chemical, mechanical and hand weeding, efficient weed control and higher yields can be achieved.

Key Words : Weed management, Butachlor, Finger millet

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INTRODUCTION

Finger millet is a nourishing food as well, with valuable source of carbohydrates (76.32%) proteins (9.2%) and minerals (2.24%) in addition to vitamin A, B and phosphorus content to lesser extent. In India, the crop occupies an area of 1.6 m ha with production of 2.1 m t. In Karnataka stands first both in area (0.94 m ha) and production (1.6 m t) which works out to an average yield of 1800.5 kg/ha (Anonymous, 2007).

Also integrated approach for weed management is getting importance wherein there will be combination of mechanical, chemical and cultural means of weed management, which can control weeds effectively, thereby making maximum availability of nutrients and moisture to crops. Thereby reduce the cost on excess fertilization and increase the yield returns. Keeping all these points in view, field trials were under taken during *Kharif* 2006 in these two major crops of eastern dry zones of Karnataka *viz*., Ragi with an objective to know the effect of weed management practices on nutrient removal by weeds in finger millet and the effect of weed management practices on crop yields.

MATERIALS AND METHODS

The experimental site is located in the Main Research Station, Hebbal, Bangalore. The topography of the experimental site was uniform; the site was red sandy loam in texture with a bulk density of 1.70 g/cc and the chemical properties of the soil are presented in Table A. The soil is of medium fertility. The study included the field experiments, the

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