

PROCEEDINGS OF THE 10<sup>th</sup>

ISSN 1800 - 4539  
ISBN 978 - 955 - 1443 -  
72-6

# ANNUAL RESEARCH SESSION

**"RESEARCH REDEEMS REALISM"**



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**ARS - 2011**

**INFLUENCE OF DIFFERENT RATES OF CATTLE MANURE APPLICATION ON THE WEED OCCURRENCE IN GROUNDNUT (ARACHIS HYPOGAEA) FIELD.**N. Suthamathy<sup>1</sup> and T. H. Seran<sup>1\*</sup>**ABSTRACT**

A field experiment was conducted to determine the effect of different rates of cattle manure application on weed occurrence in organically managed groundnut field under irrigated condition. The experiment was laid out in Randomized Complete block Design with six treatments and four replications. The experimental plots were fertilized with different rates (0-20 tons/ha) of cattle manure two weeks before planting and inorganic fertilizer as a control was applied as recommended by the Department of Agriculture. Groundnut (cv *Indi*) was sown with an interrow spacing of 45 cm and intrarow spacing of 15 cm. All other agronomic practices were followed as recommended by the Department of Agriculture. First and second hand weeding were done in each plot at the fourth and eighth weeks respectively. After every weeding, weeds were separated into broad leaves, sedges and grasses and each species was identified. The number of species, weed density and total biomass of weeds were recorded in each treatment. All measured data were subjected to statistical analysis. The results indicated that increase in cattle manure rate slightly increased the number of weed species, weeds density and weed biomass. The most abundant weeds were broad leaved weeds (98.4%) in the experimental field and more dominant weed flora observed were *Boerhavia erecta*, *Hedyotis corymbosa*, *Mollugo cerviana* and *Hedyotis biflora*. The number of weed species (7.7), weed density (3.5 per m<sup>2</sup>) and weed biomass (13.3 g/m<sup>2</sup>) significantly ( $P < 0.05$ ) high in chemical fertilizer than other treatments at the second weeding. Further, it was noted that there was no remarkable variation ( $P > 0.05$ ) in dry weight of groundnut pods between inorganic fertilizer and cattle manure applied at 15 and 20 tons/ha. Groundnut could be cultivated with the optimum level of cattle manure to achieve the optimum pod yield without any severe yield reduction due to weed incidence in the field under irrigated condition.

**Key words:** cattle manure, groundnut, weed density and biomass, pod yield

**INTRODUCTION**

Crop production practices such as tillage, weed control and fertilization influence weed communities in agricultural systems [1,2,3]. The timing of nitrogen (N) fertilizer application may influence germination, emergence, and competitiveness of weeds those are serious menaces in Agriculture. They compete with crops for the nutrients, moisture and light and causes reduction in productivity and quality of produce besides they act as hosts for pests and disease. It is widely known that losses caused by weeds exceed the losses from any category of agriculture pest such as insect, nematodes, disease, rodents

etc [4]. Weed seedlings compete with crops for light, nutrients and water and can contribute to yield reduction. Reduction in yield has a direct correlation with weed competition. Generally, an increase in one kilogram of weed growth corresponds to a reduction in one kilogram of crop growth [4] and in most of crop, weed infestation during 3-8 weeks is very critical. In conventional agriculture, increase in productivity increase the use of chemical fertilizers, chemical pesticides and herbicides causing serious damage to environment and soil health. Nutrient and weed management are often cited by organic growers

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