



Organic farming studies in maize

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Abstract : Field experiments were conducted for two consecutive *Kharif* seasons of 2003 and 2004 at S.V. Agricultural college farm (ANGRAU), Tirupati , Southern plateau and Hills zone of India on red sandy soils with fourteen treatments comprising of six different sources of nitrogen viz., farm yard manure, vermicompost, neem leaf, poultry manure, pig manure and fertilizer to supply recommended dose of nitrogen on equal nitrogen basis and one absolute control. All the seven treatments were tried with and without the foliar application of *Panchagavya*, thus, making the total treatments to fourteen. Various parameters of maize were influenced differently by varied manurial practices tried. However, during both the years of investigation, the trend was largely similar between the two years, with respect to all the parameters. All the growth and yield attributes, yield (grain as well as stover) harvest index, nitrogen uptake and the grain quality parameters (protein content, starch content and amino acid content) and gross returns as well as net returns of maize were at their best with recommended dose of fertilizer either with or without *Panchagavya* spray. However, among different organic manures all the above mentioned parameters were significantly higher with the application of farm yard manure or pig manure or vermicompost in combination with foliar application of *Panchagavya* than with any other organic manurial practices tried. Foliar application of *Panchagavya* could not exert any pronounced effect in combination with recommended dose of fertilizer, while combination of foliar application of *Panchagavya* would be fruitful only with certain organic manures only.

Key Words : Maize, Organic farming, *Panchagavya*, Yield, Nutrient uptake

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INTRODUCTION

Organic farming is not a new concept to Indian farmers, because they have practiced it since times immemorial. Organic farming system relies on crop rotation, crop residues, animal manures, legumes, green manures, off- farm wastes and biological pest control. Yields in organic farming are lower than chemical farming during initial years of practice and it takes a few years to stabilize the yields .However, in the long run, if properly followed ,yield with organic farming would be a greater than those obtained with chemical farming . The gravity of environmental degradation has drawn the attention of the scientists and planners towards finding out ecologically sound, viable and sustainable farm technologies, keeping in view of the needs of the future generations. Most of the Indian soils contain less than 0.5 per cent organic carbon. Unless it is raised to 0.9 – 1 per cent level, productivity of the soil can

not be optimized. In view of the resurgence of interest in alternative agriculture in recent years, organic farming has been considered to be sound and viable option in most of the countries. In light of the above, investigations were taken up for two consecutive years, with the objectives of studying the response of maize to different organic manures, to investigate the influence of *Panchagavya* on the productivity and quality of maize, to trace out the effect of organic manures applied to maize and also to work out the dynamics of soil fertility to suggest the best organic manurial practice for maize, based on productivity, economic viability and sustenance of soil fertility.

MATERIALS AND METHODS

Field experiments were conducted for two consecutive *Kharif* seasons of 2003 and 2004 at S.V. Agricultural College

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