

## Organic farming studies in sunflower

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### SUMMARY

Field experiments were conducted for two consecutive *Rabi* seasons of 2003-04 and 2004-05 at Tirupati, Southern plateau and Hills zone of India on red sandy soils with fourteen treatments comprised 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 equalant nitrogen basis and one absolute control were tried with and without the foliar application of *Panchagavya*. All the growth and yield attributes, yield (seed as well as stalk) harvest index, nitrogen uptake and gross returns as well as net returns of sunflower were at their best with recommended dose of fertilizer either with or without *Panchagavya* spray. The highest oil content of the seed was recorded with neem leaf manure in combination with *Panchagavya*, which was however, comparable with all the other four organic sources tried in combination with *Panchagavya*, but significantly higher than with the fertilizer either with or without the use of *Panchagavya*. The highest phosphorus uptake of sunflower was recorded with poultry manure either with or without the spray of *Panchagavya*, while the potassium uptake was the highest with vermicompost either with or without the spray of *Panchagavya*. Irrespective of the source of nutrient supply, foliar application of *Panchagavya* resulted in higher nutrient uptake of sunflower than with the use of respective organic manures alone without the use of *Panchagavya*. Among the organic sources tried, the highest net returns and benefit-cost ratio of sunflower were realized with poultry manure in combination with *Panchagavya*.

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

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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 sunflower to different organic manures, to investigate the influence of *Panchagavya* on the productivity and quality of sunflower, to trace out the effect of organic manures applied to sunflower, to work out the dynamics of soil fertility in the cropping system and to suggest the best organic manurial practice for sunflower, based on productivity, economic viability and sustenance of soil fertility.

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### MATERIALS AND METHODS

Field experiments were conducted for two consecutive *Rabi* seasons of 2003-04 and 2004-05 at S.V. Agricultural college