

## RESEARCH ARTICLE

# Response of manures and industrial by-products for cane yield and post harvest NPK status

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### SUMMARY

Field experiment was conducted in clay loam soil at Periyanellicollai village at Chidambaram taluka, Cuddalore district, Tamil Nadu. The soil of Periyanellicollai was classified as *Typic Haplustert* comes under Kondal series having sandy loam texture. The available nutrient status was low in N, medium in P and K. The treatments considered of  $T_1$  – Seasoned pressmud @ 25 t ha<sup>-1</sup>,  $T_2$  –  $T_1$  + Enriched gypsum @ 1 t ha<sup>-1</sup>,  $T_3$  –  $T_2$  + ZnSO<sub>4</sub> @ 37.5 kg ha<sup>-1</sup>,  $T_4$  –  $T_1$  + Lignite fly ash @ 25 t ha<sup>-1</sup>,  $T_5$  –  $T_1$  + Vermicompost @ 5 t ha<sup>-1</sup>,  $T_6$  – Vermicompost @ 5 t ha<sup>-1</sup> + enriched gypsum @ 1 t ha<sup>-1</sup>,  $T_7$  –  $T_6$  + ZnSO<sub>4</sub> @ 37.5 kg ha<sup>-1</sup>,  $T_8$  – Vermicompost @ 5 t ha<sup>-1</sup> + lignite fly ash @ 25 t ha<sup>-1</sup>,  $T_9$  – Biocompost @ 5 t ha<sup>-1</sup>,  $T_{10}$  –  $T_9$  + Enriched gypsum @ 1 t ha<sup>-1</sup>,  $T_{11}$  –  $T_{10}$  + ZnSO<sub>4</sub> @ 37.5 kg ha<sup>-1</sup>,  $T_{12}$  –  $T_9$  + Lignite fly ash @ 25 t ha<sup>-1</sup>,  $T_{13}$  – FYM @ 10 t ha<sup>-1</sup>,  $T_{14}$  – recommended dose of fertilizer. All the plots were applied with recommended dose of fertilizers 275:62.5:150 of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O kg ha<sup>-1</sup>. The highest cane yield of 169.74 t ha<sup>-1</sup> was obtained with  $T_3$  received seasoned pressmud @ 25 t ha<sup>-1</sup> + enriched gypsum @ 1 t ha<sup>-1</sup> + ZnSO<sub>4</sub> @ 37.5 kg ha<sup>-1</sup>. The highest content of post harvest nitrogen (278 kg ha<sup>-1</sup>) and post harvest phosphorus (19.3 kg ha<sup>-1</sup>) was maximum  $T_3$  receiving seasoned pressmud @ 25 t ha<sup>-1</sup> + enriched gypsum @ 1 t ha<sup>-1</sup> + ZnSO<sub>4</sub> @ 37.5 kg ha<sup>-1</sup>. The post harvest available potassium (156.4 kg ha<sup>-1</sup>) was recorded in treatment  $T_4$  (Seasoned pressmud @ 25 t ha<sup>-1</sup> + lignite fly ash @ 25 t ha<sup>-1</sup>).

**Key Words :** Seasoned pressmud, Enriched gypsum, ZnSO<sub>4</sub>, Lignite fly ash, Yield

**How to cite this article :** Venkatakrisnan, D. (2016). Response of manures and industrial by-products for cane yield and post harvest NPK status . *Internat. J. Plant Sci.*, **11** (2): 359-363, DOI: 10.15740/HAS/IJPS/11.2/359-363.

**Article chronicle :** Received : 05.02.2016; Revised : 01.06.2016; Accepted : 28.06.2016

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