

## Research Article

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# Changes in soil chemical and biological properties as influenced by organic nutrient management practices under rainfed condition

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**Summary**

A field experiment was conducted to study the effect of organic manures and fermented liquid organic formulations on growth, on soil chemical and biological properties under rainfed condition at Organic Farming Research Centre, Zonal Agricultural and Horticultural Research Station (ZAHRS), Navile, Shivamogga, during *Kharif* 2018-19. The experiment was laid out in Randomized Block Design with ten treatments comprising of different bulky organic manures (FYM and Vermicompost) and fermented liquid organic formulations (Beejamrutha, Jeevamrutha, *Panchagavya* and Cow urine) were replicated thrice, French bean variety Arka sharath taken as a test crop. Experimental results revealed that, among various treatments, at harvest significantly higher soil pH (6.10), electrical conductivity (0.092 dS m<sup>-1</sup>) and organic carbon (4.60 g kg<sup>-1</sup>) status were observed with application of Beejamrutha (seed treatment) + Jeevamrutha (soil application @ 500 L ha<sup>-1</sup>) + 100 % RDN through vermicompost + Foliar spray of *Panchagavya* @ 3 % (T<sub>6</sub>) over treatment which received Beejamrutha (seed treatment) + Jeevamrutha (soil application @ 500 L ha<sup>-1</sup>). The available nitrogen (296.80 kg ha<sup>-1</sup>), phosphorus (98.61 kg ha<sup>-1</sup>), potassium (173.18 kg ha<sup>-1</sup>), exchangeable Ca, Mg, available sulphur and DTPA-extracted micro nutrients (Zn, Cu, Fe and Mn) status were significantly higher at harvest stage in treatment which received Beejamrutha (seed treatment) + Jeevamrutha (soil application @ 500 L ha<sup>-1</sup>) + 100 % RDN through vermicompost (T<sub>3</sub>). Dehydrogenase, acid phosphatase and urease activities in soil at different growth stages of french bean were significantly increased in all treatments due to application of organic sources over control which received Beejamrutha (seed treatment) + Jeevamrutha (soil application @ 500 L ha<sup>-1</sup>).

**Key words :** Vermicompost, Beejamrutha, *Panchagavya*, Jeevamrutha, FYM

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