

Effect of organic, inorganic and biological sources of nutrients on soil properties and performance of *rabi* sorghum(*Sorghum bicolor* L.)

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ABSTRACT

A field experiment was conducted during 2024-2025 at Agricultural college Farm, Bapatla, to evaluate the effect of organic, inorganic and biological sources of nutrients on soil properties and performance of *rabi* sorghum. The experimental soil was neutral in reaction with a pH of 7.46 and non-saline with an EC value of 0.30 dS m⁻¹. The highest organic carbon (0.38%), max. water holding capacity (49.6%), grain yield (4,890 kg ha⁻¹) and stover yield (7,962 kg ha⁻¹), dry matter (15,250 kg ha⁻¹) were recorded in the treatment 125 % RDF + VC @ 5 tha⁻¹ + BFC @ 1.5 Lha⁻¹, respectively and the lowest were recorded in the control. The plant N, P and K contents were recorded highest (2.57%, 0.51 & 1.83%) in the treatment 125 % RDF + VC @ 5 tha⁻¹ + BFC @ 1.5 L ha⁻¹ at blooming. Similarly, soil enzyme activities and microbial populations were markedly enhanced with the combined application of inorganic fertilizers, organic manures, and biofertilizers, indicating improved soil biological health.

Keywords: *BFC (Biofertilizer consortium), VC (vermicompost) and Organic carbon, etc*