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# Effect of Organic and Inorganic Sources of Fertilizers on Plant and Soil in Pomegranate Orchard

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***Abstract:*** The three years pooled data revealed that highest plant height (16.457 cm), stem girth (20.313 cm) and plant spread towards east-west (20.626 cm) and north-south (21.84 cm) were with the application of 265.6 g N + 725.6 g P + 622.4 g K ($T_2$) through organic and inorganic fertilizer. Soil characters like pH, organic carbon, nitrogen and phosphorous, leaf nitrogen and leaf phosphorous were with 241.6 g N + 711.6 g P + 592.42 g K ($T_4$), whereas, the highest soil potassium and leaf potassium contents were with the application of 328 g N + 828 g P + 620 g K ($T_7$).The pooled analysis of three year data also indicates that 241.6 g N + 711.6 g P + 592.42 g K ($T_4$), through organic and inorganic fertilizers showed highest fruit yield before monsoon (12.76 kg plant$^{-1}$), total fruit yield (24.106 kg plant$^{-1}$), maximum fruit length (7.767 cm), fruit breadth (8.033 cm) and fruit weight (189.463 g), juice content (74.613), TSS/acid ratio and minimum acidity (0.293) while, 265.6 g N + 725.6 g P + 622.4 g K plant$^{-1}$ ($T_2$) through organic and inorganic fertilizer showed highest TSS (14.067 Brix) and total sugars (11.717 %). Application of 241.6 g N + 711.6 g P + 592.42 g K ($T_4$) through three split doses was found as a good approach for production of high yield and good quality pomegranate fruits in a larger quantity before monsoon started (before June).

***Keywords*:** Inorganic fertilizers, Laterite soil, Organic fertilizers, Pomegranate, Quality, Yield