



# Effect of Integrated Nutrient Management on Leaf and Fruit Characteristics of High Yielding Walnut Varieties of Kashmir Valley, India

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**Abstract:** This study reports the effect of conjoint application of inorganic fertilizers with organic manure on some leaf and fruit characteristics of four high yielding walnut varieties of Kashmir. The experiment consisted of four different nutrient supplementation: inorganic fertilizer, vermicompost, poultry manure and farmyard manure used in different combinations. All treatments were mixed well with soil and applied in the first week of December during 2016 and 2017. Leaf nutrient status of different varieties varied non-significantly however treatments had a significant effect on leaf nutrient status. SPAD index of SKAU/040 variety was significantly higher than rest of the varieties. SKAU/008 showed significantly higher protein and phenolic content with higher antioxidant activity than rest of the varieties. Pooled data recorded varieties treated with T4 showed highest value of SPAD index and leaf macro and micronutrients. Conjoint application of inorganic manure with vermicompost showed maximum fruit yield and fruit weight in selection SKAU/008. Overall integrated management improved the protein, fat, ash content, higher total phenolic content and enhanced antioxidant activity. Thus, conjoint application of inorganic fertilizers with vermicompost should be preferred over other organic manures for maximizing fruit yield, nutritional and nutraceutical content of walnut fruits with substantial improvement in leaf nutrient status irrespective of the walnut variety used.

**Keywords:** Integrated nutrient management, Walnut, Leaf nutrient status, Fruit yield, Fruit nutrition, Fruit antioxidant activity

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