

# INFLUENCE OF SHADE, INORGANIC AND ORGANIC AMENDMENTS ON BIOCHEMICAL AND QUALITY ASPECTS OF TURMERIC (*CURCUMA LONGA* L.)

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**Abstract:** The present investigation was carried out at the College Orchard, Department of Spices and Plantation Crops, Horticultural College and Research Institute, Tamil Nadu Agricultural University, Coimbatore. The experiment was laid out in split plot design consisting of two main plots, namely open and shade and the sub plot treatments consisted of different doses of inorganic fertilizers, organic manures, biofertilizers and growth stimulants constituting to about 40 different treatment combinations. The biochemical parameters and quality attributes were studied and analyzed after harvest. Among the biochemical parameters at 180 DAP, the treatment M<sub>2</sub>S<sub>8</sub> (shade + 100 per cent NPK + 50 per cent FYM (15 t ha<sup>-1</sup>) + coir compost (10 t ha<sup>-1</sup>) + *Azospirillum* (10 kg ha<sup>-1</sup>) + phosphobacteria (10 kg ha<sup>-1</sup>) + 3 per cent panchakavya) expressed increased total chlorophyll content (1.953 mg g<sup>-1</sup>) and total phenol (129.85 µg g<sup>-1</sup>) content. Likewise, M<sub>1</sub>S<sub>8</sub> (open + 100 per cent NPK + 50 per cent FYM (15 t ha<sup>-1</sup>) + coir compost (10 t ha<sup>-1</sup>) + *Azospirillum* (10 kg ha<sup>-1</sup>) + phosphobacteria (10 kg ha<sup>-1</sup>) + 3 per cent panchakavya) exhibited highest soluble protein (88.88 mg g<sup>-1</sup>) and IAA oxidase (999.8 µg of IAA oxidized g<sup>-1</sup> hr<sup>-1</sup>) contents. The treatment M<sub>2</sub>S<sub>18</sub> (shade + 50 per cent FYM + coir compost + *Azospirillum* (10 kg ha<sup>-1</sup>) + phosphobacteria (10 kg ha<sup>-1</sup>) + 3 per cent panchakavya) exhibited the highest curcumin content (5.570 per cent), oleoresin (10.22 per cent) and essential oil content (5.68 per cent) content.

**Keywords:** Turmeric- shade- organic amendments, Biofertilizers, Biochemical and quality parameters

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