

Comparing the use of *Tithonia diversifolia* and Compost as soil amendments for growth and yield of *Celosia argentea*

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ABSTRACT: Field experiment was conducted between June and September in the 2007 and 2008 cropping seasons at the teaching and experimental research field of the National Horticultural Research Institute (7^o25''N and 3^o52''E), Ibadan, Oyo State, Nigeria, to compare the growth and yield of *Celosia argentea* L. using different rates and sources of organic amendments and also evaluate the effect of the amendments on soil chemical properties. The experiment was laid out in a Randomized Complete Block Design (RCBD) with three replicates the plot size was 4 m². *Tithonia diversifolia* (chopped, fresh leaves and young stem) was applied at 0, 2.5, 5, 7.5, 10 and 20 tons ha⁻¹ and compost (made from cassava peels + poultry manure at ratio 3:1 on dry weight basis) at the same rates. These treatments were incorporated into the soil two weeks before planting. Agronomic data and soil chemical parameters were subsequently collected. Results indicated that soil P, Ca, CEC, K and soil organic matter content were significantly ($P < 0.05$) improved by the addition of both compost and *Tithonia*. There were no significant effect of compost on soil pH, N, Mg and Zn, but these parameters were significantly ($P < 0.05$) improved with the use of *Tithonia*. The plant height, stem girth and number of leaves increased significantly ($P < 0.05$) with the application of both compost and *Tithonia*; though compost amended plots gave higher values. Mean yield for two years in the compost amended plots was significantly ($P < 0.05$) higher (45.52 tons ha⁻¹), compared with that observed for *Tithonia* (40.17 tons ha⁻¹) amended plots. Compost amendment at 20 tons ha⁻¹ produced the highest yield of *Celosia argentea*. [New York Science Journal 2010; 3(6):133-138]. (ISSN 1554 – 0200).

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