

## **Antioxidant content of Tomatoes (*Lycopersicon esculentum* cv MT1) treated by different type of Pesticide, Fertilizer and growth medium in Compost**

**Aishah Elias, Sahilah Abd. Mutalib\*, Wan Aida Wan Mustapha, Safiyyah Shahimi, Norhidayu Mohamed, Rul Aisyah Mat Repin**

**School of Chemical Science and Food Technology, Faculty of Science and Technology  
Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia**

**Abstract :** Antioxidant of tomato (*Lycopersicon esculentum* Mill. cv MT1) that have been planted according to split split plot experimental design and subjected to sixteen (n=16) treatments namely as T1 to T16 were evaluated. The antioxidant of tomato extracts were determined by three methods namely total phenolic content (TPC), free radical scavenging activity (DPPH) and Ferric Reducing Antioxidant Power (FRAP). The highest mean efficiency for TPC and DPPH values in tomato were from T7, 1163.6 mg Gallic acid equivalent (GAE)/100 g and 55.7 % (chemical pesticide, mixture of organic and chemical fertilizer; and growth medium in cow manure compost). However T3, 54.2 % (chemical pesticide, organic fertilizer and growth medium in cow manure compost) showed significantly highest for DPPH only. FRAP values for T2, 9.00  $\mu$ mol trolox equivalent (TE)/100 g (chemical pesticide, without fertilizer and growth medium in EFB compost) treatment showed significantly higher ( $p < 0.05$ ) than other treatment. Pearson coefficient correlation test showed positive correlation ( $p < 0.05$ ) between TPC and DPPH assay ( $r = 0.933$ ) and FRAP assay ( $r = 0.874$ ), respectively showed that the phenolic compounds was a contributor of the antioxidant activity in tomato. Thus, the finding of this study demonstrated that pesticide, fertilizer and growth medium in compost factor and their interaction did not show any specific patterns content toward TPC, DPPH and FRAP; while the TPC was the main contributor of antioxidant activity in tomato.

**Keywords :** Antioxidant; tomato; pesticide; compost; fertilizer.

**International Journal of ChemTech Research, 2018,11(05): 387-393.**

**DOI= <http://dx.doi.org/10.20902/IJCTR.2018.110543>**

1.

\*\*\*\*\*