# Comparison of antioxidant properties of some selected vegetables cultivated in Jaffna district

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Vegetables are rich in antioxidants, which protect against degenerative diseases. This study aimed to compare the antioxidant properties of tomato (*Lycopersicon esculentum*), carrot (*Daucus carota*) and bitter gourd (*Mormodica charantia*). Antioxidants were extracted using ethanol (70 %, v/v). Fresh vegetables were cut in to small pieces, solvent was added (sample: solvent; 1:5 w/v) and shaken for 2 h at 200 rpm at ambient temperature. Then solvent was evaporated to get dry extract, which is used to evaluate total flavonoid content (TFC) [as catechin equivalent (CE)], total phenolic content (TPC) [as gallic acid equivalent (GAE)], antioxidant capacity (AC) [as ascorbic acid equivalent (AAE)] and antioxidant activity [2, 2-Diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging activity expressed as $IC_{50}$value, which is inversely proportional to antioxidant activity] on dry matter (DM) basis. Statistical analysis was performed using one way analysis of variance using SAS (9.1). TPC and TFC were highest in bitter gourd (27.47±1.52 GAE/g and 19.36±2.01 mg CE/g, respectively) while carrot showed lowest TPC and TFC (15.25±0.90 GAE/g and 2.67±0.04 mg CE/g, respectively). There were no significance differences among AC of the three vegetables. Tomato and bitter gourd exhibited equal DPPH radical scavenging activity (0.20±0.003 and 0.21±0.008 mg/ml, respectively). Carrot exhibited lowest DPPH radical scavenging activity (0.43±0.017 mg/ml). In conclusion, among three vegetables studied, bitter gourd had highest TPC, TFC and DPPH radical scavenging activity, while, carrot had lowest TPC, TFC and DPPH radical scavenging activity. Furthermore, there was a strong significant positive correlation between TPC and TFC (r = 0.89), TPC and AC (r = 0.61), and TFC and AC (r = 0.90) of selected vegetables. Even though all three vegetables exhibited good antioxidant properties, bitter gourd found to be the better source of antioxidant than others.

**Keywords:** *bitter gourd, carrot, tomato, total flavonoid content, total phenolic content*