

Phytochemical Content in Organically Vis-À-Vis Conventionally Grown Exotic Kale (*Brassica oleraceae* L.var *acephala*) and Broccoli (*Brassica oleracea*)

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Abstract—The present study was conducted to determine the photochemical potential of organically vis-à-vis conventionally grown exotic vegetables viz. broccoli (*Brassica oleracea*) and kale (*Brassica oleracea* L.var *acephala* DC) which belong to the family Brassicaceae. Organically and inorganically grown Palam Samridhi variety of broccoli and DSK-1 variety of kale were used. The beneficial effects of Brassica vegetables on health improvement have been partly attributed to their complex mixture of phytochemicals possessing antioxidant. Consumption of Brassica vegetables is associated with a lowered risk of cancer, heart disease, hypertension and stroke. This has been attributed to the presence of various forms of phytochemicals and antioxidants present in the foods, e.g. carotenoids and polyphenol compounds including flavonoids and chlorophyll. Organically vis-à-vis conventionally grown exotic kale (*brassica oleraceae* l.var *acephala*) and broccoli (*Brassica oleracea*), were analysed for their phytochemical content includes, total phenol (mg gae /100g), simple phenol (mg gae /100g), tannins (mg gae /100g), flavonoids (mg/100g), oxalates (mg/100g), beta-carotene (ppm), chlorophyll (mg/l). The ascorbic acid content of organically grown broccoli and kale was 90.00 and 49.00 mg/100g which was comparatively higher when compared with inorganic counterparts with 85.00 and 44.00 mg/100g values respectively. Both broccoli and kale were good sources of pytochemicals. The beta carotene content was found to be higher in case of organic broccoli i.e. 11.18 ppm as compared to 8.72 ppm in inorganic broccoli. The chlorophyll content was higher in case of inorganic broccoli (5.90 mg/L) and kale (8.32 mg/L). Simple phenol and flavanoids were found to be higher in case of organic kale as compared to inorganic kale. Total phenols, tannins and oxalates were found to be higher in inorganic broccoli and kale. From the findings of the study concluded that they are rich in health-promoting phytochemicals so should be included in our food basket to provide protection against various diseases especially cancer.

Keywords: Broccoli, Kale, Photochemical, Antioxidant, Exotic, Organic, Inorganic.