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### **Antioxidant properties of fenugreek (*Trigonella foenum-graecum*) seed extracts used in Sri Lankan ethnomedicine**

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Chronic diseases are rapidly increasing worldwide. Oxidative stress is known to play a crucial role in the progression of chronic diseases. Natural products with antioxidant properties have shown positive effects in the prevention and management of such diseases. Fenugreek is a well known traditional medicinal plant. In Sri Lankan ethnomedicine it is claimed to have variety of health benefits. However, there are no previous reports on antioxidant properties of fenugreek seed extracts used in the Sri Lankan ethnomedicine. The present study investigated a range of antioxidant properties of fenugreek seed extracts used in Sri Lankan ethnomedicine. The freeze-dried water extract of germinated fenugreek seeds (WEGFS), water extract of seed flour (WESF), and hot water seed extract (HWSE) were used in this study. These extracts were evaluated for total polyphenolic content (TPC), total flavonoid content (TFC), ferric reducing antioxidant power (FRAP) and 1,1-diphenyl-2-picrylhydrazine (DPPH), 2,2'-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) di-ammonium salt (ABTS) and superoxide scavenging (SS) antioxidant properties (n=3 each) *in vitro*. Significant differences (P<0.05) were observed among the fenugreek seed extracts for the investigated antioxidant properties. WEGFS exhibited the highest TPC (114.0 ± 2.9 mg gallic acid equivalents/g), TFC (38.54±0.57 mg quercetin equivalents/g), FRAP (75.7 ±6.4 mg Trolox equivalents (TE)/g), DPPH (59.85±0.66 mg TE/g), and ABTS (111.1 ± 12.0mg TE/g) antioxidant properties, while for SS activity WESF (317.43±0.58mg quercetin equivalents/g) had the highest activity. The order of potency of fenugreek seed extracts for TPC, TFC, FRAP, DPPH and ABTS was WEGFS>HWSE>WESF, while for SS it was observed as WESF>WEGFS>HWSE. It is concluded that WEGFS had the highest antioxidant properties (except for SS). This study scientifically validated some of the health claims of fenugreek seed extracts used in the Sri Lankan ethnomedicine.

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