

## Individual and Combined Antioxidant Activities of *Desmodium triflorum* Linn. and *Pogostemon heyneanus* Benth.

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*Desmodium triflorum* Linn. and *Pogostemon heyneanus* Benth. are medicinal plants in Sri Lanka. This investigation was conducted to determine the individual and combined antioxidant activities of *D. triflorum* whole plant and *P. heyneanus* leaves. Physicochemical properties of the two plants were determined. Individual and combined antioxidant activities of different concentrations (100–700 µg/mL) of aqueous extracts of the plants were evaluated using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging and oxygen radical absorbance capacity (ORAC) assay according to the standard protocols and the total antioxidant capacity by ferric reducing antioxidant power (FRAP) method. Total flavonoid content (TFC) and total polyphenolic content (TPC) were quantified. Moisture content, total ash content, water soluble ash content and extractable matter content was higher in *P. heyneanus* leaves than *D. triflorum* whole plant. DPPH radical scavenging activity and ORAC exhibited by *D. triflorum* (IC<sub>50</sub>, 439.4±20.4 ppm, 0.82±0.54 mg Trolox equivalent/g extract, respectively) were higher than *P. heyneanus* (IC<sub>50</sub>, 493.6±9.1 ppm, 0.26±0.53 mg Trolox equivalent/g of extract, respectively). Among the combined extracts, combinations of *D. triflorum*: *P. heyneanus* 1:1 have exhibited the highest DPPH radical scavenging activity (IC<sub>50</sub>- 402.5 ± 3.5 ppm) and TFC (52.89±0.88 mg Quercetin per g of sample). Combination of *D. triflorum*: *P. heyneanus* 3:1 demonstrated higher ORAC (1.40±0.17 Trolox equivalent/g extract) value than that of individual plants. Highest TPC observed at the combination 3:1(51.99±1.68 mg Trolox per g of sample) may have promoted the synergistic activity. In conclusion, the plants, *D. triflorum* and *P. heyneanus* have exhibited concentration dependent individual and combined antioxidant activity. The higher activity shown by *D.triflorum*: *P. heyneanus* (3:1) mixture may be due to synergistic effect.

**Keywords:** *Desmodium triflorum*, *Pogostemon heyneanus*, antioxidant activity