

## Phytochemical Screening, Antioxidant and Antidiabetic Activities of Different Solvent Extracts of *Elaeocarpus serratus* (Veralu) and *Elaeocarpus angustifolius* (Nilveralu) Grown in Sri Lanka

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The novel bioactive compounds derived from plants have shown more efficacy on management of type II diabetes. The dried fruit pericarp of *Elaeocarpus serratus* and *Elaeocarpus angustifolius* were extracted with methanol, hexane, ethyl acetate, and aqueous using sonication extraction. The antioxidant activities were determined through the DPPH and ABTS radical scavenging assays, ferric reducing power (FRAP), and oxygen radical absorbance capacity (ORAC) methods. The anti-diabetic activities were assessed using anti-amylase and anti-glucosidase assays. The crude extract of *E. serratus* had the highest total phenolic content ( $561.47 \pm 28.35$  mg GAE/g of dried extract), while the ethyl acetate fraction of *E. angustifolius* had the highest total flavonoid content ( $0.19 \pm 0.00$  mg QE/g of dried extract). The highest ORAC, FRAP, DPPH and ABTS values were in the aqueous fraction of *E. serratus* ( $83.35 \pm 5.20$  mg TE/g of dried extract), crude of *E. serratus* ( $668.75 \pm 7.7$  mg TE/g of dried extract), aqueous fraction of *E. serratus* ( $89.23 \pm 2.92$  mg TE/g of dried extract), and hexane fraction of *E. serratus* ( $570.305 \pm 7.067$  mg TE/g of dried extract), respectively. The results showed that all four extracts of *E. serratus* had significantly ( $P < 0.05$ ) high amounts of antioxidants. Aqueous and crude extracts of *E. angustifolius* showed the highest anti-glucosidase activities ( $IC_{50} = 44.58 \pm 0.17$   $\mu$ g/mL,  $248.50 \pm 0.18$   $\mu$ g/mL, respectively) compared to Acarbose ( $IC_{50} = 262.32 \pm 0.69$   $\mu$ g/mL). None of the extracts showed anti-amylase activities. These findings conclude the potential of these fruits to enhance and promote their commercial value.

**Keywords:** *antioxidant, anti-diabetic, Elaeocarpus sp.*