Nonenzymatic and enzymatic antioxidant activities in aqueous extract of different Ficus deltoidea accessions.

ABSTRACT

Ficus deltoidea was used in this study due to its reputation in reducing risk of cancer, diabetes and heart diseases. In this study 13 accessions of F. deltoidea were selected and they were divided into two groups, generally named as, female and male plants based on leaf sizes and the spots present. The signature of F. deltoidea is that this plant has black spots representing the female leaf while red spots for the male leaf. For non enzymatic antioxidants, several methods were used, they were 2,2-diphenyl-1-picrylhydrazil (DPPH) free radical scavenging assay and ferric reducing antioxidant power (FRAP) assay for total antioxidant content. In addition, total polyphenol, flavonoid, phenolic acid and vitamin C content were also analyzed. Enzymatic antioxidants of F. deltoidea leaf extracts were assayed; ascorbate oxidase, peroxidase, catalase and ascorbate peroxidase. For DPPH assay, F1 has 99.87% of inhibition while the lowest is in M10 (32.86 %). F13 has the highest total percentage of antioxidant for FRAP method and the lowest is in M4. Total polyphenol content showed F13 has the highest (1.30 mg/g FW) and M10 the lowest (0.49 mg/g FW). Similar trend was observed for total phenolic acid and flavonoid content. For both assays, F1 has the highest content while M10 is the lowest. For total vitamin C content, F8 and F7 have the highest and lowest content with 6.78 and 0.61 mg/g FW, respectively. Ascorbate oxidase, peroxidase, catalase and ascorbate peroxidase were calculated using respective coefficient extinction and expressed as mg/g FW protein content. This study suggested that the extracts of the female leaves are better than male leaves in most of the assays. This is the first documented report on the antioxidants of F. deltoidea.

Keyword: Ficus deltoidea; Antioxidant; Enzymatic; Non-enzymatic; Aqueous extracts.