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Comparative Analysis of Maturity Indices, Nutritional Values, Phytochemicals and Antioxidant Activities of Fruits of *Ampelocissus indica* (L.) Planch Grown in Sri Lanka

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Abstract

Ampelocissus indica (L.) Planch, commonly known as 'red-stemmed wild grapes' is an under-utilized plant species, widely distributed in the evergreen and semi-evergreen regions of the globe. The phytochemical composition of *A. indica* (L.) Planch grown in Sri Lanka is yet to be studied in order to find out its potential applications. Therefore, this study was focused on the comparative analysis of maturity indices, nutritional values, phytochemical constituents and antioxidant properties of fruits of *A. indica* (L.) Planch grown in different geographical coordinates in the same climate zone. Fruits of *A. indica* (L.) Planch at their highest physiological maturity level were collected from Kanneliya natural conservation center (L_1) and Sinharaja rain forest (L_2) in the Southern province of Sri Lanka and two vines were selected per each location. Samples were authenticated. The maturity indices; moisture content, pH, titratable acidity, total soluble solids and texture profile of fresh fruits of *A. indica* (L.) Planch were determined using standard methods. Analysis of the nutritional parameters; carbohydrate, protein, fat, ash, and fiber contents of the oven-dried fruits were carried out using the standard gravimetric methods while the freeze-dried fruits were analyzed for bioactive compounds; phenolics, flavonoids, and antioxidant properties using the standard spectrophotometric methods. Each analysis was carried out in triplicates and mean values were taken. The evaluated maturity indices show equality of maturity for the two locations at the 95% confidence level. In summary, this study indicated that the evaluated nutritional parameters, phenolic content and antioxidant activities of *A. indica* (L.) Planch fruits determined using 2, 2-diphenylpicrylhydrazyl, 2, 2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic and ferric reducing power assays demonstrated no statistically significant differences due to location. However, flavonoid content showed a significant difference ($p<0.05$) based on location.

Keywords: *Ampelocissus indica* (L.) Planch, Maturity Indices, Nutritional values, Phenolic compounds, Flavonoids, Antioxidant activity