Chemical composition, oxidative stability, and antioxidant activity of Allium ampeloprasum L. (Wild Leek) seed oil

ABSTRACT

Allium ampeloprasum L., commonly known as wild leek, is an edible vegetable that has been cultivated for centuries. However, no detailed studies have been undertaken to valorize A. ampeloprasum seed oil. This study aims to evaluate the physicochemical properties, chemical composition, and antioxidant activity of A. ampeloprasum seed oil. The seed oil content was found to be 18.20%. Gas chromatographymass spectrometry (GC-MS) showed that linoleic acid (71.65%) was the dominant acid, followed by oleic acid (14.11%) and palmitic acid (7.11%). A. ampeloprasum seed oil exhibited an oxidative stability of 5.22 h. Moreover, γ- and δ-tocotrienols were the major tocols present (79.56 and 52.08 mg/100 g oil, respectively). The total flavonoid content (16.64 µg CE /g oil) and total phenolic content (62.96 µg GAE /g oil) of the seed oil were also determined. The antioxidant capacity of the oil, as evaluated using the ABTS assay (136.30 µM TEAC/g oil), was found to be significant. These findings indicate that A. ampeloprasum seeds can be regarded as a new source of edible oil having health benefits and nutritional properties.

Keyword: Allium ampeloprasum seed oil; Antioxidant properties; Fatty acid composition; Oxidative stability; Thermal profile; Tocopherols and tocotrienols