ABSTRACT

Background. Djulis (Chenopodium formosanum Koidz.) is known as Chenopodium plants. It is traditional crops of aboriginal that existed more than a century, and usually recognize the sprouts as an edible vegetable. For previous study, the content of total polyphenols and total flavonoids are richest in sprouts among different Djulis parts, and display the potent antioxidant activity. However, leafy vegetables often contain anti-nutrients such as phytic acid and oxalic acid, and it may inhibit nutrients absorption and leading kidney stone formation.

Objectives. The anti-oxidation, whitening and hypoglycemic effects as well as phytochemicals and anti-nutrients components of water and ethanol extracts of djulis sprout (sowing 30 days) were evaluated. By means of understanding of Djulis sprouts have the potential to develop health products in the future.

Methods. Sample preparation: The extracts were prepared by 100 g of Djulis sprouts in 2 L water (50℃ and 95℃ for 1 h) and ethanol (50% and 95% for 48 h), then the filtrates were freeze-dried into powder to obtained 50 and 95% ethanol extracts (ECFS-50; ECFS-95) and 50 and 95 ℃ water extracts (WCFS-50, WCFS-95) of Djulis. Then the polyphenol, flavonoid, γ-aminobutyric acid (GABA), phytic acid and oxalic acid content in various extracts were determined. The functional assessment were evaluated by antioxidant activities (ABTS+ radical scavenging effects), whitening effects (inhibition of tyrosinase activity), and hypoglycemic effects (inhibition of α-glucosidase activity).

Results. The results show that total polyphenols and flavonoids contents in ECFS-50 were richest among the extracts (about 30 and 12 mg/g, respectively), GABA content was the most abundant in WCFS-50, WCFS-95 (about 183-199 μg/g) which were equivalent to germination rice. Each extracts have approximately equivalent contents of Phytic acid (10-13 mg/g), and WCFL-95 has the highest amount of oxalic acid, approximately 400 mg/100 g. ECFC...

Keywords: Chenopodium formosanum Koidz, Djulis, α-glucosidase activity, oxalic acid content

REFERENCES

23.	Quy Diem Do,et al,. Effect of extraction solvent on total phenol content total flavonoid content, an...