



Secondary metabolite variation of *Ducrosia anethifolia* at different growth stage

A. Ghani¹, Z. Karimi^{2*}, S. Mohtashami¹

¹Department of Horticultural Science, College of Agriculture, Jahrom University, Jahrom, Iran.

²Department of Horticultural Science, College of Agriculture, Shahed University, Tehran, Iran.

Background and objectives: Variation of active substances in medicinal plants during growth has been studied and the optimum harvest time has been determined for many medicinal plants. *Ducrosia anethifolia* is one of the species belonging to Apiaceae family that has been used to improve the odor of food and drink. It is used also to treat catarrh, headache and backache in folk medicine. The herb is also reported to relax the mind and body and induce a peaceful sleep. The growing stage has an important role in quantity and quality of active substances of medicinal plants. In order to determine the effects of growth stage on these compounds, five stages consisting of rosette, bolting, beginning of flowering, full flowering and seed formation stages were selected. **Methods:** The major factors measured included antioxidant activity (DPPH radical scavenging), total flavonoids, flavones and flavonols content, total phenolics compounds (Folin-Ciocalteu method), tannin content and carbohydrate content. **Results:** The results showed the significant effect of growth stage on most measured factors. The highest and lowest total flavonoids content were determined in beginning of flowering and bolting stages, respectively (120.02 and 27.39 mg quercetin/g). As a relation to most measured traits, the maximum amounts were identified at the beginning of flowering and seed formation stage and the lowest content were observed at bolting stage. **Conclusion:** It seems that at bolting stage increasing woody parts and decreasing leaf ratio leads to active substance reduction.

Keywords: antioxidant activity, *Ducrosia anethifolia*, phenological stage, total phenol