

ABSTRAK

Begonia x erythrophylla dikenal dengan memiliki kandungan senyawa bioaktif seperti flavonoid, fenolik, tanin, dan terpenoid. Proses standarisasi dilakukan guna menjamin mutu, keamanan, dan konsistensi ekstrak sebagai bahan baku produk herbal. Penelitian ini bertujuan untuk mengetahui kandungan metabolit sekunder daun *Begonia erythrophylla* Herincq melalui penetapan profil fitokimia dan analisis senyawa kimia menggunakan metode *Gas Chromatography-Massa Spectrometry* (GC-MS) dan memperoleh hasil standarisasi yang meliputi parameter spesifik dan non spesifik. Hasil Skrining fitokimia menunjukkan adanya senyawa metabolit sekunder seperti flavonoid, alkaloid, saponin dan terpenoid. Hasil standarisasi ekstrak n-heksana *Begonia x erythrophylla* Herincq pada uji kadar sari larut air rata-rata $1,3579\% \pm 1,6420$. Hasil standarisasi ekstrak n-heksana *Begonia x erythrophylla* Herincq pada uji kadar sari larut etanol 96% rata-rata sebesar $0,8728\% \pm 0,0176$. Hasil standarisasi ekstrak n-heksana *Begonia x erythrophylla* Herincq pada pengujian susut pengeringan sebesar $0,0106\% \pm 0,0017$. Hasil standarisasi ekstrak n-heksana Daun *Begonia x erythrophylla* Herincq pada pengujian bobot jenis pada piknometer sebesar $0,8802\% \pm 0,0029$. Hasil Standarisasi ekstrak n-heksana *Begonia x erythrophylla* Herincq pada uji kadar abu total rata-rata sebesar $0,1049\% \pm 0,1257$. Pada pengujian kadar abu dibagi menjadi dua yaitu kadar abu larut air dan kadar abu tidak larut dalam asam, pada pengujian kadar abu larut air hasilnya sebesar $22,9063\% \pm 0,7527$. Pada pengujian kadar abu tidak larut asam sebesar $20,6538\% \pm 2,1776$. Hasil analisis GC-MS mengidentifikasi berbagai senyawa volatil dan semi-volatil yang berpotensi memiliki aktivitas biologis, dengan senyawa utama ditentukan berdasarkan waktu retensi, rasio massa terhadap muatan (m/z) dan luas area puncak. Pada pengujian ini dapat disimpulkan bahwa analisis GC-MS menunjukkan bahwa ekstrak n-heksana mengandung beragam senyawa kimia volatile, diantaranya senyawa golongan acetic acid, hyrazide, dan beberapa senyawa mengandung senyawa semi volatil diantaranya 1-octanol-2,7- dimethyl, oxalic acid, allylhexyl ester, 5-tridecene, phytol. Beberapa senyawa dengan kelimpahan relatif tinggi, seperti n-hexadecanoic acid dan 9,12-octadecadienoic acid, mendominasi senyawa kromatogram.

Kata Kunci: *Begonia x erythrophylla* Herincq, Standarisasi, GC-MS

ABSTRACT

Begonia x erythrophylla is known as the content of bioactive compounds such as flavonoids, phenolic, tannins, and terpenoids. The standardization process is carried out to ensure the quality, safety, and consistency of the extract as a raw material for herbal products. This study aims to determine the secondary metabolite content of *Begonia erythrophylla* Herincq leaves through the determination of phytochemical profiles and analysis of chemical compounds using the Gas Chromatography-Mass Spectrometry (GC-MS) method and obtain standardization results that include specific and non-specific parameters. Phytochemical screening results showed the presence of secondary metabolite compounds such as flavonoids, alkaloids, saponins and terpenoids. The results of the standardization of the n-hexane extract of *Begonia x erythrophylla* Herincq in the water-soluble extract test averaged $1.3579\% \pm 1.6420$. The results of the standardization of the n-hexane extract of *Begonia x erythrophylla* Herincq in the 96% ethanol soluble extract test averaged $0.8728\% \pm 0.0176$. The results of the standardization of the n-hexane extract of *Begonia x erythrophylla* Herincq in the drying shrinkage test were $0.0106\% \pm 0.0017$. The results of the standardization of the n-hexane extract of *Begonia x erythrophylla* Herincq leaves in the specific gravity test on the pycnometer were $0.8802\% \pm 0.0029$. The results of the standardization of the n-hexane extract of *Begonia x erythrophylla* Herincq in the total ash content test averaged $0.1049\% \pm 0.1257$. In the ash content test, it is divided into two, namely water-soluble ash content and acid-insoluble ash content, in the water-soluble ash content test the results are $22.9063\% \pm 0.7527$. In the acid-insoluble ash content test, it is $20.6538\% \pm 2.1776$. The results of the GC-MS analysis identified various volatile and semi-volatile compounds that have the potential to have biological activity, with the main compounds determined based on retention time, mass to charge ratio (m/z) and peak area. In this test, it can be concluded that the GC-MS analysis shows that the n-hexane extract contains various volatile chemical compounds, including compounds of the acetic acid group, hyrazide, and several compounds containing semi-volatile compounds including 1-octanol-2,7-dimethyl, oxalic acid, allylhexyl ester, 5-tridecene, phytol. Several compounds with relatively high abundance, such as n-hexadecanoic acid and 9,12-octadecadienoic acid, dominated the chromatogram.

Keywords: *Begonia x erythrophylla* Herincq, Standardization, GC-MS