

## **SIFAT FISIK, KIMIA DAN SENYAWA BIOAKTIF DAUN SIMPOR (*Dillenia suffruticosa*) SEGAR DAN KUKUS**

### **ABSTRAK**

Satu cara untuk melindungi atau mengawetkan produk pangan adalah dengan pengemasan. Daun simpor (*Dillenia suffruticosa*) telah lama dimanfaatkan sebagai pengemas tradisional di Provinsi Bangka Belitung. Meskipun telah lama digunakan, daun simpor belum diteliti secara masif. Daun simpor diduga memiliki senyawa bioaktif yang berpotensi digunakan sebagai pengemas aktif alami. Oleh karena itu, penelitian ini bertujuan untuk mengevaluasi potensi daun simpor sebagai pengemas aktif alami.

Daun simpor segar dan kukus dianalisa fisik (*tensile strength*, warna, tebal, mikrostruktur), kimia (kadar air, kadar lipid), profil asam lemak, dan profil senyawa volatil. Uji aktivitas senyawa bioaktif (total fenolik, antioksidan, dan antibakteri) dilakukan terhadap daun simpor yang difraksinasi dengan tiga pelarut: heksana, etil asetat dan n-butanol. Hasil aktivitas senyawa bioaktif terbaik dilakukan identifikasi senyawa bioaktif.

Daun simpor segar dan kukus memiliki *tensile strength* dan tebal yang tidak berbeda nyata ( $P \geq 0,05$ ). Warna dan mikrostruktur daun simpor segar dan kukus berbeda. Daun simpor segar memiliki kadar air dan kadar lipid lebih tinggi ( $P \leq 0,05$ ) dibandingkan daun simpor kukus. Fraksi etil asetat menunjukkan aktivitas senyawa bioaktif (total senyawa fenolik dan antioksidan) paling tinggi dibandingkan fraksi heksana dan fraksi n-butanol. Pada konsentrasi 100 ppm dan 1000 ppm, semua fraksi daun simpor segar dan kukus tidak memiliki aktivitas antibakteri. Daun simpor kukus memiliki total senyawa fenolik, dan aktivitas antioksidan yang lebih tinggi dibandingkan daun simpor segar. Aktivitas senyawa bioaktif meningkat setelah proses pengukusan sehingga daun simpor kukus memiliki potensi yang lebih baik digunakan sebagai pengemas dibandingkan dengan daun simpor segar.

**Kata kunci:** daun simpor, pengemas, senyawa bioaktif

## PHYSICAL, CHEMICAL AND BIOACTIVE COMPOUND FROM FRESH AND STEAMED SIMPOR LEAVES (*Dillenia suffruticosa*)

### ABSTRACT

Packaging plays important role in protecting and conserving quality of food product which give advantage on long shelf life. Simpor leaves (*Dillenia suffruticosa*) has been renowned as traditional packaging in Provinsi Bangka Belitung for long time, however, there still few studies about simpor leaves. Simpor leaves was expected to comprise of bioactive substance which is potential to be used as natural active packaging. Therefore, the objective this study was to evaluate the potential benefit of simpor leaves as natural active packaging.

Fresh and steamed simpor leaf was subjected to analyze physical properties (tensile strength, color, thickness, microstructure), chemical properties (water and lipid content), lipid profile, and volatile compound profile. Activity of bioactive substances (total phenolic, antioxidant and antibacterial) was conducted to simpor leaf which was fractionated with 3 different solvents; hexane, ethyl acetate and n-butanol. The candidate of bioactive compound with high bioactivity was chosen to further identify the type of compound.

Tensile strength and thickness of fresh and steamed simpor leaves is not significantly different ( $P < 0,05$ ), however, color and microstructure was observed significantly different. Fresh simpor leaf shown to have higher water and lipid content ( $P < 0,05$ ) than steamed treated leaes. Activity of bioactive compound in simpor leaves (total phenolic compound and antioxidant) from ethyl acetate fraction was the highest compared to hexane and n-butanol fraction. All fraction compounds of fresh and steamed simpor leaf did not exhibit antibacterial activity. Steamed simpor leaf found to show higher phenolic compound and antioxidant activity than fresh simpor leaf. Activity of bioactive compound increased after steaming process and thus suggested that steaming treatment had good potency to be applied as packaging better than fresh simpor leaves.

**Key words:** simpor leaves, packaging, bioactive compound