ABSTRAK

Febriani Tamba, NIM 4223210024 (2026). Pengaruh Variasi Formulasi Bumbu Arsik Kering Masakan Khas Batak terhadap Aktivitas Antidiabetes dan Skrining Fitokimia.

Campuran rempah arsik merupakan gabungan rempah tradisional khas Batak yang terdiri atas berbagai komponen alami dan berpotensi mengandung senyawa bioaktif yang bermanfaat bagi kesehatan. Penelitian ini bertujuan untuk mengeksplorasi pengaruh berbagai formulasi campuran rempah arsik kering terhadap aktivitas antidiabetes melalui penghambatan enzim α-amilase secara *in vitro*, serta mengidentifikasi kandungan metabolit sekunder menggunakan skrining fitokimia. Sampel disiapkan dalam tiga jenis formulasi, kemudian dikeringkan menggunakan metode pengeringan microwave pada daya 150–250 W selama 25–30 menit, selanjutnya diekstraksi dengan metode maserasi menggunakan etanol 96%. Aktivitas antidiabetes diuji menggunakan metode penghambatan enzim α-amilase dengan acarbose sebagai kontrol positif. Hasil penelitian menunjukkan bahwa setiap formulasi mengalami peningkatan daya hambat terhadap enzim α-amilase seiring meningkatnya konsentrasi ekstrak. Nilai IC_{50} formulasi 1, formulasi 2, dan formulasi 3 berturut-turut sebesar 106,01 ppm, 45,45 ppm, dan 74,30 ppm, sedangkan acarbose sebagai kontrol positif memiliki nilai IC_{50} sebesar 22,95 ppm. Hasil skrining fitokimia menunjukkan adanya senyawa flavonoid, alkaloid, tanin, saponin, dan steroid. Formulasi 2 menunjukkan aktivitas antidiabetes paling baik, sehingga campuran rempah arsik kering berpotensi dikembangkan sebagai pangan.

Kata kunci: Bumbu arsik, antidiabetes, α-amilase, IC_{50}, skrining fitokimia

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ABSTRACT

Febriani Tamba, NIM 4223210024 (2026). The Effect of Variations in the Formulations of Dry Arsik Spices Used in Traditional Batak Cuisine on Antidiabetic Activity and Phytochemical Screening.

Arsik spice mixture is a traditional Batak spice blend composed of various natural ingredients that potentially contain bioactive compounds beneficial to human health. This study aimed to investigate the effect of different formulations of dried Arsik spice mixtures on antidiabetic activity through *in vitro* α-amylase inhibitory activity and to identify the presence of secondary metabolites using phytochemical screening. The samples were prepared in three different formulations and dried using a microwave drying method at a power of 150–250 W for 25–30 minutes, followed by extraction through maceration using 96% ethanol. The antidiabetic activity was evaluated using the α-amylase inhibition assay, with acarbose as the positive control. The results showed that all formulations exhibited increased α-amylase inhibitory activity with increasing extract concentration. The IC_{50} values of Formulation 1, Formulation 2, and Formulation 3 were 106.01 ppm, 45.45 ppm, and 74.30 ppm, respectively, while acarbose, used as the positive control, exhibited an IC_{50} value of 22.95 ppm. Phytochemical screening revealed the presence of flavonoids, alkaloids, tannins, saponins, and steroids. Among the tested formulations, Formulation 2 demonstrated the highest antidiabetic activity, indicating that dried Arsik spice mixture has the potential to be developed as a natural functional food to support blood glucose control.

Keywords: Arsik spice, antidiabetic, α-amylase, IC_{50}, phytochemical screening.

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