

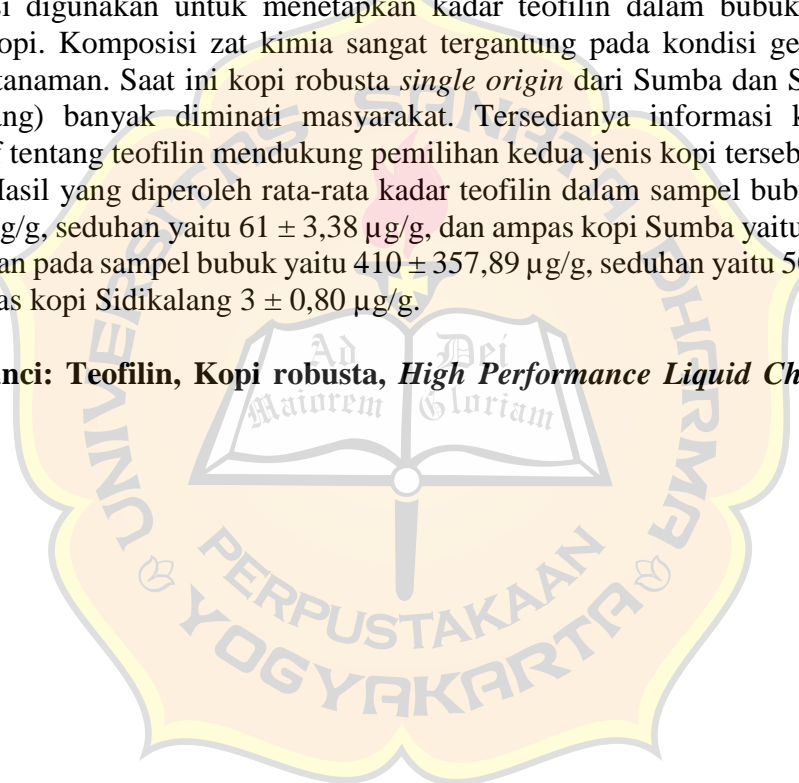
## ABSTRAK

Minuman kopi adalah minuman populer di Indonesia. Kopi robusta (*Coffea canephora*) merupakan kopi yang lebih banyak diminati masyarakat. Manfaat teofilin dalam biji kopi dapat diperoleh melalui seduhan kopi dan residu teofilin dalam ampas kopi. Untuk itu, perlu adanya informasi kualitatif dan kuantitatif senyawa bioaktif dalam seduhan dan ampas kopi.

Mengingat bahwa komposisi zat kimia dalam serbuk kopi sangat kompleks, untuk memisahkan teofilin dari komponen zat kimia lainnya digunakan metode kromatografi cair kinerja tinggi fase terbalik. Metode yang telah dioptimasi dan divalidasi digunakan untuk menetapkan kadar teofilin dalam bubuk, seduhan dan ampas kopi. Komposisi zat kimia sangat tergantung pada kondisi geografis tempat tumbuh tanaman. Saat ini kopi robusta *single origin* dari Sumba dan Sumatera Utara (Sidikalang) banyak diminati masyarakat. Tersedianya informasi kuantitatif dan kualitatif tentang teofilin mendukung pemilihan kedua jenis kopi tersebut.

Hasil yang diperoleh rata-rata kadar teofilin dalam sampel bubuk yaitu  $475 \pm 111,99 \mu\text{g/g}$ , seduhan yaitu  $61 \pm 3,38 \mu\text{g/g}$ , dan ampas kopi Sumba yaitu  $3 \pm 1,91 \mu\text{g/g}$ . Sedangkan pada sampel bubuk yaitu  $410 \pm 357,89 \mu\text{g/g}$ , seduhan yaitu  $50 \pm 16,47 \mu\text{g/g}$ , dan ampas kopi Sidikalang  $3 \pm 0,80 \mu\text{g/g}$ .

**Kata kunci:** Teofilin, Kopi robusta, *High Performance Liquid Chromatography* (HPLC).



## ABSTRACT

Coffee drink is a popular drink in Indonesia. Robusta coffee (*Coffea canephora*) is a coffee that is more in demand by the public. The benefits of theophylline in coffee beans can be obtained through steeping coffee and theophylline residue in coffee grounds. For this reason, it is necessary to have qualitative and quantitative information on bioactive compounds in brewing and coffee grounds.

Given that the chemical composition of coffee grounds is very complex, in order to separate theophylline from other chemical components, the reverse phase high performance liquid chromatography method is used. Optimized and validated methods were used to determine theophylline levels in coffee grounds, brews and grounds. The composition of chemical substances is highly dependent on the geographical conditions where the plant grows. Currently, single origin robusta coffee from Sumba and North Sumatra (Sidikalang) is in great demand by the public. The availability of quantitative and qualitative information about theophylline supports the choice of the two types of coffee.

The results obtained that the average levels of theobromine in the powder samples  $475 \pm 111.99 \mu\text{g/g}$ , steeping  $61 \pm 3.38 \mu\text{g/g}$ , and Sumba coffee grounds  $3 \pm 1.91 \mu\text{g/g}$ . While the powder sample  $410 \pm 357.89 \mu\text{g/g}$ , steeping  $50 \pm 16.47 \mu\text{g/g}$ , and Sidikalang coffee grounds  $3 \pm 0.80 \mu\text{g/g}$ .

**Keywords:** Theophylline, Robusta coffee, High Performance Liquid Chromatography (HPLC).