

Universitas Ngudi Waluyo  
Program Studi S1 Farmasi Fakultas Ilmu Kesehatan  
Skripsi, Agustus 2020  
ULFA INAYAH  
050115A086

## **PERBANDINGAN KADAR FLAVONOID TOTAL DAN AKTIVITAS ANTIOKSIDAN TIGA GOLONGAN BERRIES DENGAN METODE EKSTRAKSI BERBEDA**

### **ABSTRAK**

**Latar Belakang :** Antioksidan adalah zat yang dapat menangkal atau mencegah reaksi oksidasi dari radikal bebas. Zat antioksidan yang berperan membantu sistem pertahanan tubuh bisa diperoleh dari buah-buahan yang mengandung vitamin C, vitamin E,  $\beta$ -karoten dan senyawa flavonoid (Afrianti *et al.*, 2010). Salah satu buah yang mengandung senyawa flavonoid dan aktivitas antioksidan adalah golongan berries. Golongan berry yang digunakan dalam penelitian ini adalah *blackberry*, *blueberry*, dan *mulberry* yang telah diketahui mengandung senyawa flavonoid dan aktivitas antioksidan. Pada penelitian ini bertujuan untuk melihat perbedaan kadar flavonoid total dan aktivitas antioksidan tiga golongan *berries* dengan metode maserasi dan sonikasi.

**Metode :** Jenis penelitian dilakukan review artikel dengan mencari sumber data primer berupa artikel atau jurnal ilmiah untuk membandingkan kandungan senyawa flavonoid dan aktifitas antioksidan dari ekstrak buah *blueberry*, *blackberry* dan *mulberry* dengan metode ekstraksi berbeda.

**Hasil :** Kadar flavonoid total dari ekstrak buah *blueberry*, *blackberry* dan *mulberry* yang diekstraksi dengan metode maserasi diperoleh hasil 3.26 mg.g<sub>1</sub>DW, 3.05 mg.g<sub>1</sub>DW dan 1.50 mg.g<sub>1</sub>DW dan hasil aktivitas antioksidannya diperoleh 87.10%, 86.88%, dan 79.38%. kadar flavonoid total dari ekstrak buah *blueberry*, *blackberry* dan *mulberry* dengan metode sonikasi diperoleh hasil 26.39±0.81 mg/g, 82.2±1.3mg CTE/100g, dan 265±17mg CTE/100gDW dan hasil aktivitas antioksidan diperoleh hasil 1262.03µmol.100 g<sup>-1</sup>, 177.11 µmol TE/g fw, dan 32.82%.

**Kesimpulan :** Terdapat perbedaan baik kadar flavonoid total maupun aktivitas antioksidan pada ekstrak *blueberry*, *blackberry*, dan *mulberry* yang diekstraksi menggunakan metode maserasi dan sonikasi.

Ngudi Waluyo University  
Study Program of S1 Farmasi, Faculty of Ilmu Kesehatan  
Final Project, August 2020  
ULFA INAYAH  
050115A086

## COMPARISON OF TOTAL FLAVONOID LEVELS AND ANTIOXIDANT ACTIVITY OF THE THREE TYPES OF BERRIES WITH DIFFERENT EXTRACTION METHODS

### ABSTRACT

**Background:** Antioxidants are substances that can ward off or prevent oxidation reactions from free radicals. Antioxidants that play a role in helping the body's defense system can be obtained from fruits that contain vitamin C, vitamin E,  $\beta$ -caroten and flavonoid compounds (Afrianti *et al.*, 2010). One of the fruits that contains flavonoid compounds and antioxidant activity is the berries group. The berries used in this study are blueberries, blackberries and mulberries which are known to contain flavonoids and antioxidant activity. This study aimed to see the differences in total flavonoid levels and antioxidant activity of the three types of berries using maceration and sonication methods.

**Methods:** This type of research was carried out by reviewing articles by looking for primary data sources in the form of articles or scientific journals to compare the content of flavonoids and antioxidant activity of blueberry, blackberry and mulberry fruit extracts with different extraction method.

**Results:** The total flavonoid levels of blueberry, blackberry, and mulberry fruit extracts extracted by the obtained results of 3.26 mg.g<sub>1</sub>DW, 3.05 mg.g<sub>1</sub>DW and 1.50 mg.g<sub>1</sub>DW, and the result of antioxidant activity was 87.10%, 86.88%, and 79.38%. total flavonoid levels from blueberry, blackberry and mulberry fruit extracts using the sonication method were 26.39±0.81 mg/g, 82.2±1.3mg CTE/100g, and 265±17mg CTE/100gDW, and the result of antioxidant activity were obtained the results were 1262.03µmol.100 g<sup>-1</sup>, 177.11 µmol TE/g fw, dan 32.82%.

**Conclusion:** There were differences in both total flavonoid levels and antioxidant activity in extracts of blueberries, blackberries, and mulberries which were extracted using maceration and sonication methods.