

**KADAR TOTAL FENOL, FLAVONOID DAN AKTIVITAS
ANTIOKSIDAN SARI BUAH DAN WINE ANGGUR BALI (*Vitis vinifera* L.
var. *Alphonse Lavallee*)**

Oleh

Laily Maghfirah, NIM 2113081004

Jurusan Kimia Program Studi Kimia

ABSTRAK

Penyakit infeksi dan degeneratif terus meningkat di Indonesia, sementara konsumsi buah masih tergolong rendah. Anggur Bali (*Vitis vinifera* L. var. *Alphonse Lavallee*) merupakan salah satu buah yang mengandung senyawa bioaktif seperti fenol dan flavonoid, yang diketahui memiliki aktivitas antioksidan. Penelitian ini bertujuan untuk menentukan dan membandingkan kadar total fenol, flavonoid, serta aktivitas antioksidan (IC_{50}) antara sari buah dan wine anggur Bali. Metode penelitian ini bersifat kuantitatif, dimulai dengan pembuatan ekstrak sari anggur tanpa biji dan wine melalui fermentasi selama 5, 10, dan 15 hari. Selanjutnya dilakukan pengujian menggunakan metode Folin-Ciocalteu untuk total fenol, kolorimetri $AlCl_3$ untuk flavonoid, dan DPPH untuk aktivitas antioksidan. Hasil menunjukkan kadar total fenol sari buah sebesar 270,644 mg GAE/L, sedangkan pada wine masing-masing fermentasi sebesar 414,204 mg GAE/L (hari ke-5), 535,417 mg GAE/L (hari ke-10), dan 432,477 mg GAE/L (hari ke-15). Kadar flavonoid sari buah tercatat 30,513 mg QE/L, sementara wine sebesar 50,269 mg QE/L, 60,851 mg QE/L, dan 45,588 mg QE/L secara berurutan. Nilai IC_{50} aktivitas antioksidan sari buah adalah 10,547 μ g/mL, sedangkan wine sebesar 5,527 μ g/mL, 7,873 μ g/mL, dan 6,095 μ g/mL. Berdasarkan hasil tersebut, dapat disimpulkan bahwa kadar total fenol, flavonoid, dan aktivitas antioksidan pada sari buah lebih rendah dibandingkan hasil fermentasi wine.

Kata kunci: Anggur Bali, Antioksidan, Fenol, Flavonoid, Wine.

**TOTAL PHENOL, FLAVONOID LEVELS AND ANTIOXIDANT
ACTIVITY OF BALI GRAPE JUICE AND WINE (*Vitis vinefera* L. var.**

***Alphonse Lavallee*)**

By

Laily Maghfirah, NIM 2113081004

Chemistry Department, Study Program Chemistry

ABSTRAC

*Infectious and degenerative diseases continue to increase in Indonesia, while fruit consumption is still relatively low. Bali grape (*Vitis vinifera* L. var. Alphonse Lavallee) is one of the fruits that contain bioactive compounds such as phenols and flavonoids, which are known to have antioxidant activity. This study aims to determine and compare the levels of total phenols, flavonoids, and antioxidant activity (IC_{50}) between Bali grape juice and wine. This research method is quantitative, starting with the preparation of seedless grape juice extract and wine through fermentation for 5, 10, and 15 days. Furthermore, testing was carried out using the Folin-Ciocalteu method for total phenols, $AlCl_3$ colorimetry for flavonoids, and DPPH for antioxidant activity. The results showed that the total phenol content of fruit juice was 270.644 mg GAE/L, while in wine each fermentation was 414.204 mg GAE/L (day 5), 535.417 mg GAE/L (day 10), and 432.477 mg GAE/L (day 15). The flavonoid content of the juice was recorded at 30.513 mg QE/L, while the wine was 50.269 mg QE/L, 60.851 mg QE/L, and 45.588 mg QE/L respectively. The IC_{50} value of antioxidant activity of fruit juice was 10.547 $\mu\text{g/mL}$, while wine was 5.527 $\mu\text{g/mL}$, 7.873 $\mu\text{g/mL}$, and 6.095 $\mu\text{g/mL}$. Based on these results, it can be concluded that the levels of total phenols, flavonoids, and antioxidant activity in fruit juice are lower than the results of wine fermentation.*

Keywords: Bali grape, Antioxidant, Phenol, Flavonoid, Wine.