

Lampiran 6. Perhitungan Kadar β -karoten

➤ Pembuatan Kurva Standar β -karoten

1. Larutan Standar 150 ppm

$$\frac{150 \text{ mg/L}}{1000 \text{ mL}} = \frac{x}{50 \text{ mL}}$$
$$x = \frac{150 \text{ mg/L} \times 50 \text{ mL}}{1000 \text{ mL}}$$
$$x = 75 \text{ mg}$$

Ditimbang 0,75 mg β -karoten dilarutkan dalam labu ukur 50 mL

2. Larutan Standar 120 ppm

$$M_1 \times V_1 = M_2 \times V_2$$
$$150 \text{ ppm} \times V_1 = 120 \text{ ppm} \times 10 \text{ mL}$$
$$V_1 = 8 \text{ mL}$$

3. Larutan Standar 90 ppm

$$M_1 \times V_1 = M_2 \times V_2$$
$$150 \text{ ppm} \times V_1 = 90 \text{ ppm} \times 10 \text{ mL}$$
$$V_1 = 6 \text{ mL}$$

4. Larutan Standar 60 ppm

$$M_1 \times V_1 = M_2 \times V_2$$
$$150 \text{ ppm} \times V_1 = 60 \text{ ppm} \times 10 \text{ mL}$$
$$V_1 = 4 \text{ mL}$$

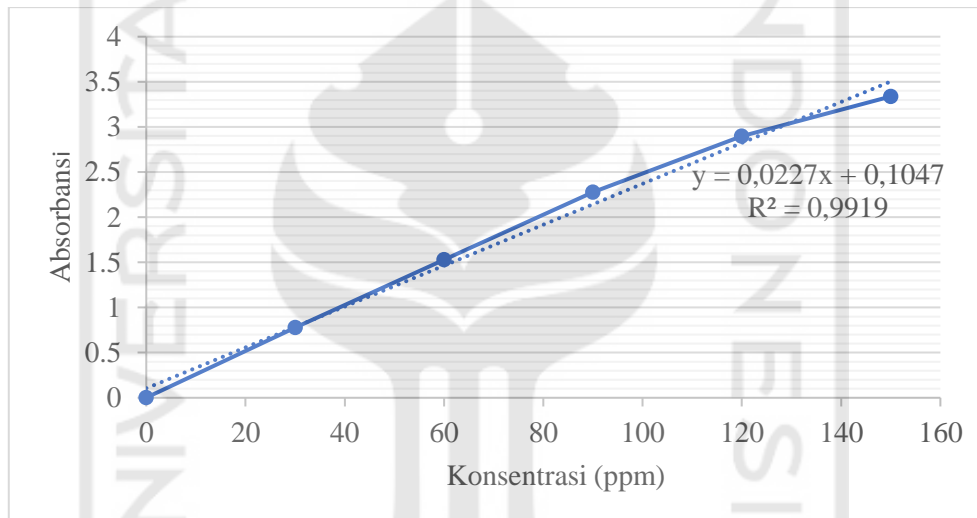
5. Larutan Standar 30 ppm

$$M_1 \times V_1 = M_2 \times V_2$$
$$150 \text{ ppm} \times V_1 = 30 \text{ ppm} \times 10 \text{ mL}$$
$$V_1 = 2 \text{ mL}$$

➤ Hasil Pengukuran Absorbansi Standar β -karoten

Konsentrasi (ppm)	Absorbansi
0	0,001
30	0,778
60	1,531
90	2,279
120	2,898
150	3,338

➤ Kurva Standar β -karoten



➤ Hasil Data Pengukuran Absorbansi Sampel

Fermentasi	Absorbansi	Intercept	slope
0 Jam	2,805	0.1047	0.0227
24 Jam	2,678	0.1047	0.0227
36 Jam	2,699	0.1047	0.0227
48 Jam	3,286	0.1047	0.0227

➤ **Perhitungan Kadar β-karoten**

a. Tanpa Perlakuan

$$Y = 0,0227x + 0,1047 \qquad = 1142,8 \text{ ppm}$$

$$2,805 = 0,0227x + 0,1047$$

$$x = \frac{2,805 - 0,1047}{0,0227}$$

$$x = 118,95$$

$$\begin{aligned} \text{Konsentrasi} &= X \times Fp \\ &= 118,95 \times 100 \\ &= 1189,5 \text{ ppm} \end{aligned}$$

b. Fermentasi 24 Jam

$$Y = 0,0227x + 0,1047$$

$$2,678 = 0,0227x + 0,1047$$

$$x = \frac{2,678 - 0,1047}{0,0227}$$

$$x = 113,36$$

$$\begin{aligned} \text{Konsentrasi} &= X \times Fp \\ &= 113,36 \times 10 \\ &= 1133,6 \text{ ppm} \end{aligned}$$

c. Fermentasi 36 Jam

$$Y = 0,0227x + 0,1047$$

$$2,699 = 0,0227x + 0,1047$$

$$x = \frac{2,699 - 0,1047}{0,0227}$$

$$x = 114,28$$

$$\begin{aligned} \text{Konsentrasi} &= X \times Fp \\ &= 114,28 \times 100 \end{aligned}$$

d. Fermentasi 36 Jam

$$Y = 0,0227x + 0,1047$$

$$3,286 = 0,0227x + 0,1047$$

$$x = \frac{3,286 - 0,1047}{0,0227}$$

$$x = 140,14$$

$$\begin{aligned} \text{Konsentrasi} &= X \times Fp \\ &= 140,14 \times 100 \\ &= 1401,4 \text{ ppm} \end{aligned}$$

➤ Hasil Perhitungan Kadar β -karoten

Sampel	Konsentrasi B-karoten (ppm)
Tanpa Perlakuan	1189,5
Fermentasi 24 Jam	1133,6
Fermentasi 36 Jam	1142,8
Fermentasi 48 Jam	1401,4

