LAMPIRAN

Lampiran 1. Perhitungan Larutan

a. Larutan induk vitamin C 1000 ppm dibuat dengan cara menimbang asam askorbat murni sebanyak 25 mg; masukkan dalam beker glass; tambahkan aquabidest sebanyak 25 ml dan homogenkan.

b. Larutan standar dibuat dengan cara memipet 5 ml larutan induk; masukkan dalam labu ukur 50 ml; tambahkan aquabidest sampai tanda batas dan homogenkan; diperoleh konsentrasi 100 ppm. Kemudian dilakukan pembuatan kurva kalibrasi sebesar 2 ppm, 4 ppm, 6 ppm, 10 ppm.

c. Perhitungan konsentrasi ppm

1. $V_1 \; x \; K_1 = V_2 \; x \; K_1$

$$K_2 = \frac{V_1}{V_2} \; x \; K_1$$

$$K_2 = \frac{0{,}5}{25 \; ml} \; x \; 100 \; ppm$$

$$K_2 = 2 \; ppm$$

2. $V_1 \; x \; K_1 = V_2 \; x \; K_1$

$$K_2 = \frac{V_1}{V_2} \; x \; K_1$$

$$K_2 = \frac{1}{25 \; ml} \; x \; 100 \; ppm$$

$$K_2 = 4 \; ppm$$

3. $V_1 \; x \; K_1 = V_2 \; x \; K_1$

$$K_2 = \frac{V_1}{V_2}\ x\ K_1$$

$$K_2 = \frac{1{,}5}{25\ ml}\ x\ 100\ ppm$$

$$K_2 = 6\ ppm$$

4. $V_1\ x\ K_1 = V_2\ x\ K_1$

$$K_2 = \frac{V_1}{V_2}\ x\ K_1$$

$$K_2 = \frac{2}{25\ ml}\ x\ 100\ ppm$$

$$K_2 = 8\ ppm$$

5. $V_1\ x\ K_1 = V_2\ x\ K_1$

$$K_2 = \frac{V_1}{V_2}\ x\ K_1$$

$$K_2 = \frac{2{,}5}{25\ ml}\ x\ 100\ ppm$$

$$K_2 = 10\ ppm$$

Lampiran 2. Kurva Kalibrasi Vitamin C

Konsentrasi (ppm)	Absorbansi			Rata-rata Absorbansi
	(1)	(2)	(3)	
2	0,769	0,769	0,769	0,769
4	1,602	1,601	1,597	1,600
6	2,830	2,859	2,934	2,874
8	3,521	3,538	3,283	3,447
10	3,658	3,405	3,294	3,452

Lampiran 3. Penentuan Kadar Vitamin C Pada Brokoli

Sampel	Absorbansi			Rata-rata Absorbansi
	(1)	(2)	(3)	
Brokoli mentah	4,000	3,661	3,508	3,706
Brokoli direbus 5 menit	3,735	3,508	3,597	3,613
Brokoli direbus 15 menit	2,057	2,055	2,047	2,053

Lampiran 4. Perhitungan Persamaan Regresi Linier

$Y = bx + a$

$Y = 0{,}3607x + 0{,}2645$

$R^2 = 0{,}909$

$$Konsentrasi = \frac{massa\ zat\ pelarut\ (mg)}{Volume\ larutan\ (L)}$$

$$= \frac{25\ mg}{0{,}025\ L}$$

$$= 1000\ ppm$$

1. Brokoli mentah

- $Y = 0{,}3607x + 0{,}2645$

$3{,}706 = 0{,}3607x + 0{,}2645$

$$x = \frac{3{,}706 - 0{,}2645}{0{,}3607}$$

$$x = \frac{3{,}441}{0{,}3607}$$

$x = 11{,}221\ ppm$

$x = 11{,}221\ mg/L$

- $Vitamin\ C = Konsentrasi\ \times Volume\ melarutkan\ asam\ askorbat$

  $= 11{,}221\ mg/L\ \times 0{,}025\ L$

  $= 0{,}280\ mg$

- $Pengenceran\ 50\ mL = 0{,}280\ mg\ \times 50$

  $= 14\ mg$

- $\%\ Kadar = \frac{mg\ asam\ askorbat}{mg\ brokoli\ mentah} \times 100\%$

  $= \frac{14\ mg}{25000mg} \times 100\%$

  $= 0{,}056\%$

2. Brokoli direbus 5 menit

- $Y = 0{,}3607x + 0{,}2645$

  $3{,}613 = 0{,}3607x + 0{,}2645$

  $x = \frac{3{,}613 - 0{,}2645}{0{,}3607}$

  $x = \frac{3{,}348}{0{,}3607}$

  $x = 9{,}281\ ppm$

  $x = 9{,}281\ mg/L$

- $Vitamin\ C = Konsentrasi\ \times Volume\ melarutkan\ asam\ askorbat$

  $= 9{,}281\ mg/L\ \times 0{,}025\ L$

  $= 0{,}232\ mg$

- $Pengenceran\ 50\ mL = 0{,}232\ mg\ \times 50$

  $= 11{,}6\ mg$

- $\%\ Kadar = \frac{mg\ asam\ askorbat}{mg\ brokoli\ direbus\ 5\ menit} \times 100\%$

$$= \frac{11{,}6\ mg}{25000mg} \times 100\%$$

$$= 0{,}046\%$$

3. Brokoli direbus 15 menit

- $Y = 0{,}3607x + 0{,}2645$

$2{,}053 = 0{,}3607x + 0{,}2645$

$$x = \frac{2{,}053 - 0{,}2645}{0{,}3607}$$

$$x = \frac{1{,}788}{0{,}3607}$$

$$x = 4{,}957\ ppm$$

$$x = 4{,}957\ mg/L$$

- $Vitamin\ C = Konsentrasi \times Volume\ melarutkan\ asam\ askorbat$

$$= 4{,}957\ mg/L \times 0{,}025\ L$$

$$= 0{,}123\ mg$$

- $Pengenceran\ 50\ mL = 0{,}123\ mg \times 50$

$$= 6{,}15\ mg$$

- $\%\ Kadar = \frac{mg\ asam\ askorbat}{mg\ brokoli\ direbus\ 15\ menit} \times 100\%$

$$= \frac{6{,}15\ mg}{25000mg} \times 100\%$$

$$= 0{,}00024\%$$

Lampiran 5. Gambar Penelitian

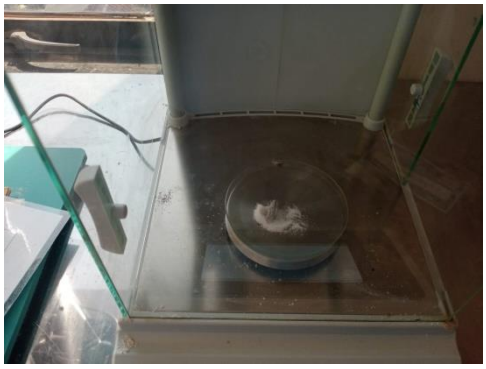
Proses perebusan brokoli

Brokoi mentah, direbus 5 menit,dan direbus 15 menit

Menghaluskan brokoli

Penyaringan filtrat

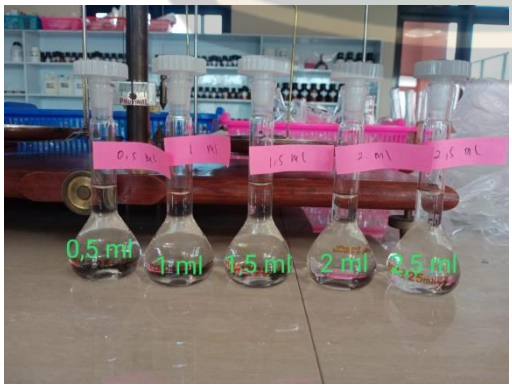
Filtrat yang didapat



Penimbangan asam askorbat

Asam askorbat konsentrasi 1000ppm

Asam askorbat konsentrasi 100ppm



Kurva kalibrasi

Sampel brokoli

Sampel diletakkan pada kuvet