LAMPIRAN

1. Tabel penentuan panjang gelombang maksimal

Panjang Gelombang (nm)	Absorbansi
490	0,895
500	0,776
510	0,724
520	0,646
530	0,612

2. Tabel penentuan konsentrasi dan kadar pada beda variable pelarut

Sampel	Panjang Gelombang	Absorbansi	Konsentrasi (ppm)	Kadar (%)
1:1	490 nm	0,773	86,36	1,907
1:2	490 nm	0,650	72,67	1,926
1:3	490 nm	0,595	66,48	1,940
1:4	490 nm	0,475	53,07	1,978
1:5	490 nm	0,386	43,12	1,990

3. Tabel penentuan konsentrasi dan kadar pada beda variable suhu

Sampel	Panjang Gelombang	Suhu	Absorbansi	Konsentrasi (ppm)	Kadar (%)
100 ppm	490 nm	50 ^{0}C	0,380	42,45	1,997
100 ppm	490 nm	60 ^{0}C	0,450	50,27	1,960
100 ppm	490 nm	70 ^{0}C	0,555	62,01	1,940
100 ppm	490 nm	80 ^{0}C	0,639	70,94	1,930
100 ppm	490 nm	90 ^{0}C	0,799	89,27	1,900

LAMPIRAN PERHITUNGAN

1. Perhitungan Larutan Standar

Ppm = $\frac{\text{massa (mg)}}{\text{Volume (1000 ml)}}$

100 ppm = $\frac{\text{massa (mg)}}{\text{1000 ml}}$

Massa = 100.000 mg = 100 gram

Pelarutan dilakukan pada labu takar 100 ml maka ,

$$\frac{100\ gram}{1\ 000\ ml} = \frac{x}{100\ ml}$$

x = 10 gram

2. Perhitungan Absortivitas (a)

$$a = \frac{\text{Absorbansi maksimal}}{\text{konsentrasi larutan glukosa}} = \frac{0.895}{100} = 0.00895$$

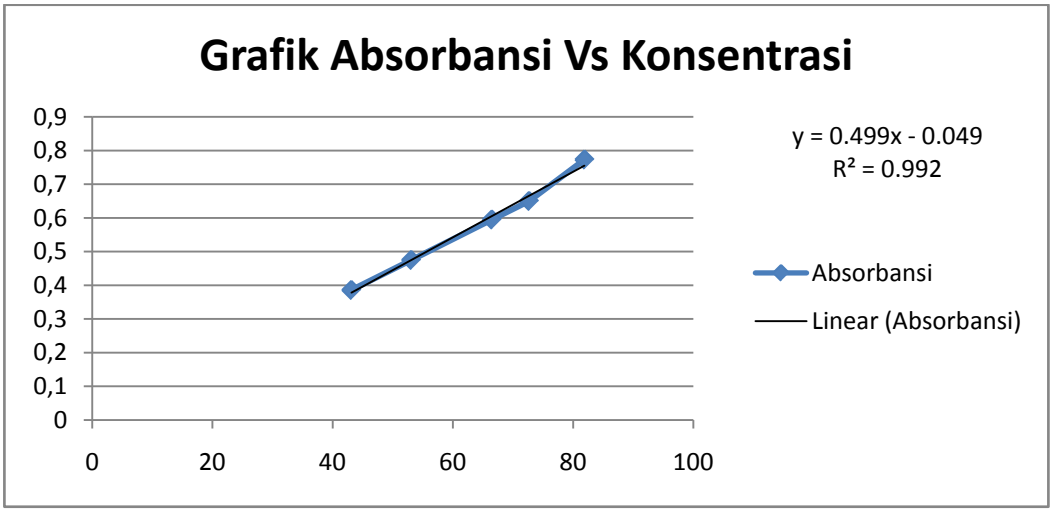
3. Perhitungan Konsentrasi Tabel 2 (C)

Menggunakan Hukum Lamber-Beer didapat :

Sampel 1	$\mathrm{A} = \mathrm{a\ x\ b\ x\ C}$ $\mathrm{C} = \frac{\mathrm{A}}{\mathrm{a\ x\ b}}$ $\mathrm{C} = \frac{0{,}773}{0{,}00895 \frac{\text{liter}}{\text{mg cm}}\ \text{x}\ 1\ \text{cm}} = 86{,}36 \frac{\text{mg}}{\text{liter}} = 86{,}36\ \text{ppm}$
Sampel 2	$\mathrm{A} = \mathrm{a\ x\ b\ x\ C}$ $\mathrm{C} = \frac{\mathrm{A}}{\mathrm{a\ x\ b}}$ $\mathrm{C} = \frac{0{,}650}{0{,}00895 \frac{\text{liter}}{\text{mg cm}}\ \text{x}\ 1\ \text{cm}} = 72{,}62 \frac{\text{mg}}{\text{liter}} = 72{,}62\ \text{ppm}$
Sampel 3	$\mathrm{A} = \mathrm{a\ x\ b\ x\ C}$ $\mathrm{C} = \frac{\mathrm{A}}{\mathrm{a\ x\ b}}$ $\mathrm{C} = \frac{0{,}595}{0{,}00895 \frac{\text{liter}}{\text{mg cm}}\ \text{x}\ 1\ \text{cm}} = 66{,}48 \frac{\text{mg}}{\text{liter}} = 66{,}48\ \text{ppm}$
Sampel 4	$\mathrm{A} = \mathrm{a\ x\ b\ x\ C}$ $\mathrm{C} = \frac{\mathrm{A}}{\mathrm{a\ x\ b}}$ $\mathrm{C} = \frac{0{,}475}{0{,}00895 \frac{\text{liter}}{\text{mg cm}}\ \text{x}\ 1\ \text{cm}} = 53{,}07 \frac{\text{mg}}{\text{liter}} = 53{,}07\ \text{ppm}$

Sampel 5	$A = a \text{ x } b \text{ x } C$ $C = \frac{A}{a \text{ x } b}$ $C = \frac{0{,}386}{0{,}00895 \frac{\text{liter}}{\text{mg cm}} \text{ x } 1 \text{ cm}} = 43{,}12 \frac{\text{mg}}{\text{liter}} = 43{,}12 \text{ ppm}$

4. Grafik hubungan absorbansi dengan konsentrasi (Tabel 2)



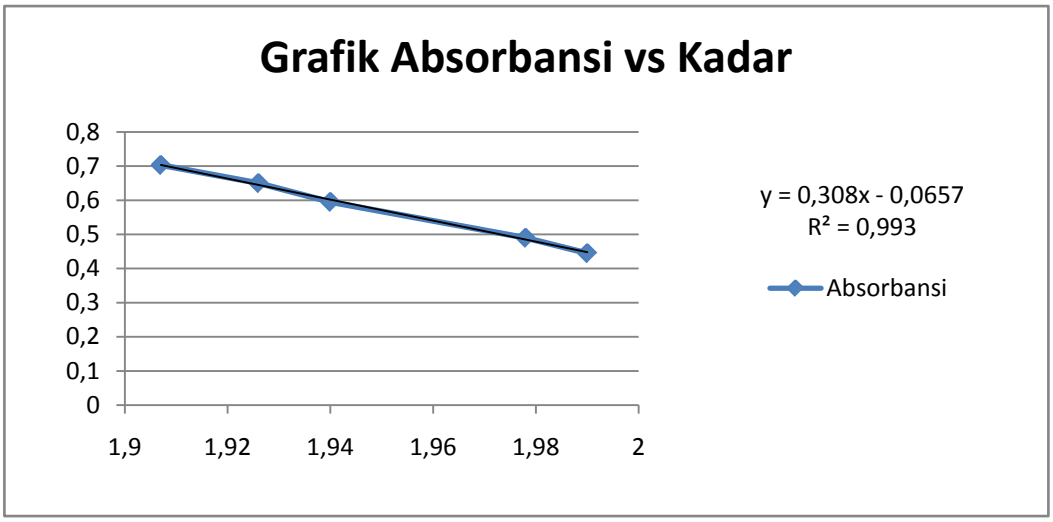
5. Perhitungan kadar dan persen kesalahan pada Tabel 2

Sampel 1	y = 0,499 x – 0.049 0.773 = 0,499 x – 0.049 x = 1,647 ppm Konsentrasi glukosa dalam sampel = 1,647 ppm Konsentrasi sampel = 86,36 ppm Kadar glukosa dalam sampel = 1,647/86,36 x 100 % = 1,907 %
	Perhitungan Persen Kesalahan Teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \text{ x } 100 \%$ $= \frac{2 - 1{,}907}{2} \text{x } 100 \% = 4{,}65 \%$

Sampel 2	y = 0,499 x – 0.049 0.650 = 0,499 x – 0.049 x = 1,4 ppm Konsentrasi glukosa dalam sampel = 1,4 ppm Konsentrasi sampel 72,62 ppm Kadar glukosa dalam sampel = 1,4 / 72,62 x 100 % = 1,926
	Perhitungan Persen Kesalahan Teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \text{ x } 100\ \%$ $= \frac{2 - 1{,}926}{2} \text{x } 100\ \% = 3{,}7\ \%$
Sampel 3	y = 0,499 x – 0.049 0.595 = 0,499 x – 0.049 x = 1,29 ppm Konsentrasi glukosa dalamsampel = 1,29 ppm Konsentrasi sampel 66,48 ppm Kadar glukosa dalam sampel = 1,29 / 66,48 x 100 % = 1,940
	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \text{ x } 100\ \%$ $= \frac{2 - 1{,}940}{2} \text{x } 100\ \% = 3\ \%$
Sampel 4	y = 0,499 x – 0.049 0.475 = 0,499 x – 0.049 x = 1,05 Konsentrasi glukosa dalam sampel = 1,05 ppm Konsentrasi sampel 53,07 ppm Kadar glukosa dalam sampel = 1,05/53,07 x 100 % = 1,978
	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \text{ x } 100\ \%$ $= \frac{2 - 1{,}978}{2} \text{x } 100\ \% = 1{,}1\ \%$
Sampel 5	y = 0,499 x – 0.049 0.386 = 0,499 x – 0.049 x = 0,861 ppm Konsentrasi glukosa dalam sampel = 0,861 ppm Konsentrasi sampel 43,12 ppm Kadar glukosa dalam sampel = 0,861 / 43,12 x 100 % = 1,990

	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \times 100\ \%$ $= \frac{2 - 1{,}990}{2} \times 100\ \% = 0{,}5\ \%$

6. Grafik hubungan absorbansi dengan konsentrasi (Tabel 2)

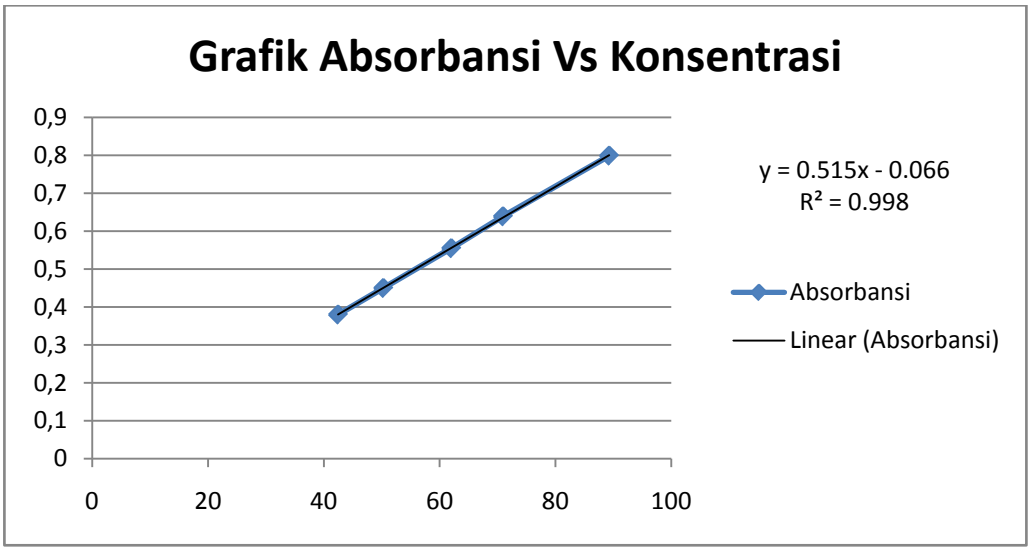


7. Perhitungan Konsentrasi Tabel 3 (C)
   Menggunakan Hukum Lamber-Beer didapat :

Sampel 1	$A = a \times b \times C$ $C = \frac{A}{a \times b}$ $C = \frac{0.380}{0{,}00895 \frac{\text{liter}}{\text{mg cm}} \times 1\ \text{cm}} = 42{,}45 \frac{\text{mg}}{\text{liter}} = 42{,}45\ \text{ppm}$
Sampel 2	$A = a \times b \times C$ $C = \frac{A}{a \times b}$ $C = \frac{0.450}{0{,}00895 \frac{\text{liter}}{\text{mg cm}} \times 1\ \text{cm}} = 50{,}27 \frac{\text{mg}}{\text{liter}} = 50{,}27\ \text{ppm}$

Sampel 3	$A = a \times b \times C$ $C = \frac{A}{a \times b}$ $C = \frac{0{,}555}{0{,}00895 \frac{\text{liter}}{\text{mg cm}} \times 1 \text{ cm}} = 62{,}01 \frac{\text{mg}}{\text{liter}} = 62{,}01 \text{ ppm}$
Sampel 4	$A = a \times b \times C$ $C = \frac{A}{a \times b}$ $C = \frac{0.639}{0{,}00895 \frac{\text{liter}}{\text{mg cm}} \times 1 \text{ cm}} = 70{,}94 \frac{\text{mg}}{\text{liter}} = 70{,}94 \text{ ppm}$
Sampel 5	$A = a \times b \times C$ $C = \frac{A}{a \times b}$ $C = \frac{0.799}{0{,}00895 \frac{\text{liter}}{\text{mg cm}} \times 1 \text{ cm}} = 89{,}27 \frac{\text{mg}}{\text{liter}} = 89{,}27 \text{ ppm}$

8. Grafik hubungan absorbansi dan konsentrasi (Tabel 3)

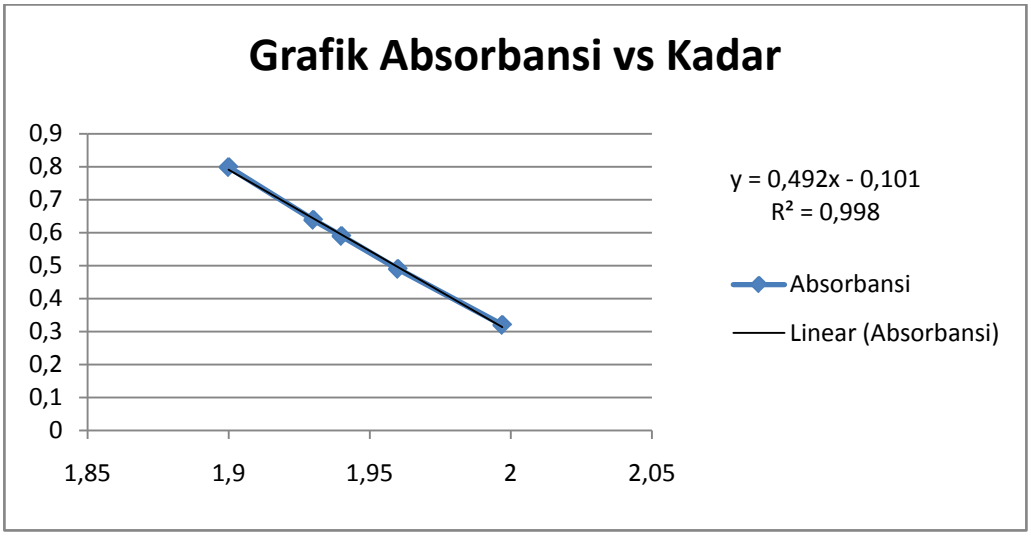


9. Perhitungan kadar dan pesen kesalahan

Sampel 1	y = 0,515 x – 0,066 0.380 = 0, 0,515 x – 0,066 x = 0,848 Konsentrasi glukosa dalam sampel = 0,848 ppm Konsentrasi sampel 42,45 ppm Kadar glukosa dalam sampel = 0,848 / 42,45 x 100 % = 1,997 %
	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \text{ x } 100\ \%$ $= \frac{2 - 1{,}997}{2} \text{x } 100\ \% = 0{,}15\ \%$
Sampel 2	y = 0,515 x – 0,066 0.450 = 0,515 x – 0,066 x = 0,98 Konsentrasi glukosa dalam sampel = 0,98 ppm Konsentrasi sampel 50,27 ppm Kadar glukosa dalam sampel = 0,98 / 50,27 = 1,960 %
	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \text{ x } 100\ \%$ $= \frac{2 - 1{,}960}{2} \text{x } 100\ \% = 2\ \%$
Sampel 3	y = 0,515 x – 0,066 0.555 = 0,515 x – 0,066 x = 1,2 Konsentrasi glukosa dalam sampel = 1,2 ppm Konsentrasi sampel 62,01 ppm Kadar glukosa dalam sampel = 1,2/ 62,01 x 100 % = 1,940 %
	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \text{ x } 100\ \%$ $= \frac{2 - 1{,}940}{2} \text{x } 100\ \% = 3\ \%$

Sampel 4	y = 0,515 x – 0,066 0,639 = 0,515 x – 0,066 x = 1,368 Konsentrasi glukosa dalam sampel = 1,368 ppm Konsentrasi sampel 70,94 ppm Kadar glukosa dalam sampel = 1,368 / 70,94 = 1,930
	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \times 100\ \%$ $= \frac{2 - 1{,}930}{2} \times 100\ \% = 3{,}5\ \%$
Sampel 5	y = 0, 0,515 x – 0,066 0,799 = 0,515 x – 0,066 x = 1,679 Konsentrasi glukosa dalam sampel = 1,679 ppm Konsentrasi sampel 89,27 ppm Kadar glukosa dalam sampel = 1,679 / 89,27 = 1,900
	Perhitungan Persen Kesalahan teoritis $\%\text{Kesalahan} = \frac{\text{Kadar sebenarnya} - \text{kadar sampel}}{\text{Kadar sebenarnya}} \times 100\ \%$ $= \frac{2 - 1{,}900}{2} \times 100\ \% = 5\ \%$

10. Grafik hubungan absorbansi dan konsentrasi (Tabel 3)



11. Foto Praktikum

Larutan Sampel (Variabel Konsentrasi)	
Larutan Sampel (Variabel Suhu)