LAMPIRAN B
PERHITUNGAN

1. Penentuan Densitas Sirup Glukosa

a. Penentuan Volume Piknometer

1. Berat Aquadest

   = (Berat piknometer + Aquadest) – (berat piknometer kosong)

   = 56,9189 gram – 32,7795 gram

   = 24,1394 gram

2. Volume aquadest = volume piknometer

$$= \frac{\text{Berat aquadest}}{\text{Berat jenis air}}$$

$$= \frac{24{,}1394 \text{ gram}}{1 \text{ gram/ml}}$$

$$= 24{,}1394 \text{ ml}$$

b. Penentuan Berat Jenis atau Densitas dengan Piknometer

1. Berat Sampel

   = (Berat piknometer + Sampel) – (Berat piknometer kosong)

   = 67,0092 gram – 32,7795 gram

   = 34,2297 gram

2. Densitas Sampel, ρ

$$\rho = \frac{\text{Berat Sampel}}{\text{Volume Piknometer}}$$

$$\rho = \frac{34{,}2297 \text{ gram}}{24{,}1394 \text{ ml}}$$

$$\rho = 1{,}418 \text{ g/ml}$$

2. Penentuan Kadar Air

a. Berat sampel (W1) = 2,5 gram

b. Berat sampel setelah dikeringkan (W2)

= (Berat cawan + sampel setelah di oven) – Berat cawan kosong

= 52,525 gram – 50,4 gram

= 2,125 gram

c. Selisih Berat (W3)

= W1 – W2

= 2,5 gram – 2,125 gram

= 0,375 gram

d. % kadar air

$$= \frac{\text{W3}}{\text{W1}} \text{x}100\%$$

$$= \frac{0{,}375 \text{ gram}}{2{,}5 \text{ gram}} \text{x}100\%$$

$$= 15\%$$

3. Penentuan Kadar Abu

a. Berat Abu

= (Berat abu + krusibel) – Berat krusibel

= 30,3140 gram – 30,2937 gram

= 0,0203 gram

b. % Abu

$$= \frac{\text{berat abu}}{\text{berat sampel}} \text{x}100\%$$

$$= \frac{0{,}0203 \text{ gram}}{2{,}9 \text{ gram}} \text{x}100\%$$

$$= 13{,}6\%$$

4. Penentuan Kadar Glukosa

Dari Kurva Standar Glukosa didapat persamaan berikut :

y = 0,0013x + 1,3331

Keterangan :

x = Konsentrasi (%)

y = Indeks bias

Maka,

$$x = \frac{y - 1,3331}{0,0013}$$

$$x = \frac{1,4127 - 1,3331}{0,0013}$$

$$x = 61,2308\%$$

5. Pembuatan Larutan HCl 1 N dalam 100 ml

$$M_1 = \frac{\% \text{ x } \rho \text{ x } 1000}{BM}$$

$$M_1 = \frac{0,37 \text{ x } 1,19 \text{ x } 1000}{36,5}$$

$$M_1 = 12,0630 \text{ M}$$

Maka,

$$M_1 \text{ x } V_1 = M_2 \text{ x } V_2$$

$$V_1 = \frac{M_2 \text{ x } V_2}{M_1}$$

$$V_1 = \frac{1 \text{ M x } 100 \text{ ml}}{12,0630 \text{ M}}$$

$$V_1 = 8,3 \text{ ml}$$

6. Penentuan % Ekstrak dan % Ekstrak Hidrolisis

$$\% \text{ Ekstrak} = \frac{\text{Berat Nira}}{\text{Berat Bengkuang Awal}} \text{ x } 100\%$$

$$= \frac{1006{,}5 \text{ g}}{1500 \text{ g}} \text{ x } 100\%$$

$$= 67{,}10\%$$

$$\% \text{ Ekstrak Hidrolisis} = \frac{\text{Berat Nira Hidrolisis}}{\text{Berat Bengkuang Awal}} \text{ x } 100\%$$

$$= \frac{940{,}2 \text{ g}}{1500 \text{ g}} \text{ x } 100\%$$

$$= 62{,}68\%$$

7. Penentuan % Yield

$$\% \text{ Yield} = \frac{\text{Berat Produk}}{\text{Berat Bengkuang Awal}} \text{ x } 100\%$$

$$= \frac{124{,}8 \text{ g}}{1500 \text{ g}} \text{ x } 100\%$$

$$= 8{,}32\%$$