

LAMPIRAN

1. Dokumentasi Kegiatan



Bahan Baku Yang Digunakan: Biji Kemiri



Alat Pres Hidrolik



Limbah Ampas Kemiri



Minyak Kemiri



Analisa Laboratorium

2. Perhitungan

2.1 Persentase Kadar Air Biji Kemiri

Rumus kadar air = $\frac{(\text{berat sebelum pemanasan} - \text{berat sesudah pemanasan})}{\text{Berat sebelum pemanasan}} \times 100\%$

$$\text{Variabel 1} = \frac{500 \text{ gr} - 489,31 \text{ gr}}{500 \text{ gr}} \times 100\% = 2,138 \%$$

$$\text{Variabel 2} = \frac{500 \text{ gr} - 489,85 \text{ gr}}{500 \text{ gr}} \times 100\% = 2,03 \%$$

$$\text{Variabel 3} = \frac{500 \text{ gr} - 478,86 \text{ gr}}{500 \text{ gr}} \times 100\% = 4,228 \%$$

$$\text{Variabel 4} = \frac{500 \text{ gr} - 479,99 \text{ gr}}{500 \text{ gr}} \times 100\% = 4,002 \%$$

2.2 Densitas Minyak Kemiri

$$\rho = \frac{(\text{massa pikno isi minyak} - \text{mass pikno kosong}) \text{ gr}}{\text{volume pikno yang digunakan (ml)}}$$

$$\text{Variabel 1} = \frac{(40,38-16,93)\text{gr}}{25 \text{ ml}} = 0,938 \text{ gr/ml}$$

$$\text{Variabel 2} = \frac{(40,45-16,93)\text{gr}}{25 \text{ ml}} = 0,9408 \text{ gr/ml}$$

$$\text{Variabel 3} = \frac{(40,39-16,93)\text{gr}}{25 \text{ ml}} = 0,9384 \text{ gr/ml}$$

$$\text{Variabel 4} = \frac{(40,37-16,93)\text{gr}}{25 \text{ ml}} = 0,9376 \text{ gr/ml}$$

2.3 Presentase Rendemen Minyak Kemiri

Rumus massa minyak = densitas minyak x volume minyak

$$\text{Variabel 1} = 0,938 \text{ gr/ml} \times 239 \text{ ml} = 224,182 \text{ gram}$$

$$\text{Variabel 2} = 0,9408 \text{ gr/ml} \times 242 \text{ ml} = 227,6736 \text{ gram}$$

$$\text{Variabel 3} = 0,9384 \text{ gr/ml} \times 238 \text{ ml} = 223,3392 \text{ gram}$$

$$\text{Variabel 4} = 0,9376 \text{ gr/ml} \times 238 \text{ ml} = 223,1488 \text{ gram}$$

$$\% \text{ Rendemen} = \frac{\text{massa minyak yang terekstrak (gr)}}{\text{massa sampel (gr)}} \times 100\%$$

$$\text{Variabel 1} = \frac{224,182 \text{ gr}}{489,31 \text{ gr}} \times 100\% = 45,816 \%$$

$$\text{Variabel 2} = \frac{227,6736 \text{ gr}}{489,85 \text{ gr}} \times 100\% = 46,478 \%$$

$$\text{Variabel 3} = \frac{223,3392 \text{ gr}}{378,86 \text{ gr}} \times 100\% = 46,64 \%$$

$$\text{Variabel 4} = \frac{223,1488 \text{ gr}}{479,99 \text{ gr}} \times 100\% = 46,49 \%$$

2.4 Angka Asam Minyak Kemiri

$$\text{Rumus} = \frac{56,1 \times \text{ml KOH yang dibutuhkan} \times \text{normalitas KOH}}{\text{massa sampel (gr)}}$$

Massa sampel = densitas x volume minyak yang digunakan

$$\text{Variabel 1} = \frac{56,1 \times 1,1 \text{ ml} \times 0,1 \text{ N}}{5 \text{ gr}} = 1,2342$$

$$\text{Variabel 2} = \frac{56,1 \times 1,3 \text{ ml} \times 0,1 \text{ N}}{5 \text{ gr}} = 1,4586$$

$$\text{Variabel 3} = \frac{56,1 \times 1,2 \text{ ml} \times 0,1 \text{ N}}{5 \text{ gr}} = 1,3464$$

$$\text{Variabel 4} = \frac{56,1 \times 1,1 \text{ ml} \times 0,1 \text{ N}}{5 \text{ gr}} = 1,2342$$

2.5 Angka Penyabunan Minyak Kemiri

$$\text{Rumus} = \frac{(\text{titrasi blanko} - \text{titrasi sampel}) \text{ ml} \times N \text{ HCl} \times 56,1}{\text{massa sampel (gr)}}$$

$$\text{Variabel 1} = \frac{(35,6 - 4) \text{ ml} \times 1 \text{ N} \times 56,1}{9,14 \text{ gr}} = 193,9562$$

$$\text{Variabel 2} = \frac{(35,6 - 5) \text{ ml} \times 1 \text{ N} \times 56,1}{9,14 \text{ gr}} = 187,8184$$

$$\text{Variabel 3} = \frac{(35,6 - 4) \text{ ml} \times 1 \text{ N} \times 56,1}{9,14 \text{ gr}} = 193,9562$$

$$\text{Variabel 4} = \frac{(35,6 - 3) \text{ ml} \times 1 \text{ N} \times 56,1}{9,14 \text{ gr}} = 200,0914$$