LAMPIRAN

1. Hasil Pengamatan

1.1 Tabel 7. Hasil Pengamatan Densitas dan Viskositas

Variabel				Pengamatan	
Berat Kopi (gr)	Volume air (L)	Waktu Filtrasi (menit)	Filtrat ke	Densitas (gr/ml)	Viskositas (cp)
250	30	50	1	1,0544	1,349
			2	1,0540	1,233
			3	1,0508	1,176
			4	1,0468	1,047
			5	1,0412	1,093
500	30	50	1	1,0640	1,734
			2	1,0638	1,702
			3	1,0624	1,583
			4	1,0604	1,389
			5	1,0596	1,335
1000	30	50	1	1,0760	1,839
			2	1,0724	1,802
			3	1,0708	1,607
			4	1,0704	1,573
			5	1,0676	1,484

1.2 Tabel 8. Hasil Volume Filtrat

Variabel			Pengamatan	Valve pengambilan filtrate				
Waktu (menit)	Air	Massa (gr)	Waktu (menit)	I	II	III	IV	V
50	30 L	250 gr	3	2010	1830	1750	1600	1530
			6	2200	2250	2100	2020	2005
			9	3545	3450	3100	2800	2570
			12	3950	3300	3050	2850	2650
			15	4035	3870	3300	3000	2800
50	30 L	500 gr	3	1500	1200	1180	1130	1125
			6	2250	1750	1650	1600	1475
			9	3200	2275	2275	2150	2100
			12	3500	2720	2500	2300	2165
			15	4000	3200	3000	2870	2900
50	30 L	750 gr	3	1120	1000	990	950	800
			6	1210	1475	1375	1300	900
			9	2410	2320	2060	1935	975
			12	2442	2220	2210	2100	1500
			15	2900	2500	2400	2250	1600

1.3 Tabel 9. Hasil Pengamatan Cake Basah dan Cake Kering

Variabel			Pengamatan	
Variabel	Lama Pengovenan (menit)	Plate ke	Cake Basah (gr)	Cake Kering (gr)
2500 gr	30	1	2,71	1,85
		2	1,54	0,50
		3	1,21	0,12
		4	0.91	0,05
500 gr	30	1	5,28	2,85
		2	4,28	2,11
		3	3,89	1,69
		4	3,55	1,21
1000 gr	30	1	7,31	5,03
		2	6,52	4,95
		3	5,61	3,17
		4	5,04	1,56

2. Perhitungan

2.1 Densitas Variabel 1 (250 gr)

Rumus densitas :

$$\rho = \frac{massa\ piknometer\ isi - massa\ piknometer\ kosong}{volume\ piknometer}$$

- Filtrat 1

$\rho = \frac{(53{,}43-27.07)\ gr}{25\ ml}$

= 1,0544 gr/ml

- Filtrat 2

$\rho = \frac{(53{,}42-27.07)\ gr}{25\ ml}$

= 1,0540 gr/ml

- Filtrat 3

$\rho = \frac{(53{,}34-27.07)\ gr}{25\ ml}$

= 1,0508 gr/ml

- Filtrat 4

$\rho = \frac{(53{,}24-27.07)\ gr}{25\ ml}$

= 1,0468 gr/ml

- Filtrat 5

$\rho = \frac{(53{,}10-27.07)\ gr}{25\ ml}$

= 1,0412 gr/ml

2.2 Viskositas Variabel 1 (250 gr)

Rumus Viskositas :

$\mu = \frac{tx \times \rho x}{t0 \times \rho 0} \times \mu_0$

- Filtrat 1

$\mu = \frac{1{,}28\ s \times 1{,}0544\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,349 cp

- Filtrat 2

$\mu = \frac{1{,}17\ s \times 1{,}0540\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,233 cp

- Filtrat 3

$\mu = \frac{1{,}12\ s \times 1{,}0508\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,176 cp

- Filtrat 4

$\mu = \frac{1{,}0\ s \times 1{,}0468\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,0468 cp

- Filtrat 5

$\mu = \frac{1{,}05\ s \times 1{,}0412\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,0926 c

2.3 Massa Cake Basah, Cake Kering dan % Kadar Air yang Menguap Variabel 1

2.3.1 Cake Basah

$Berat\ Basah = Cake\ Basah - Berat\ cawan\ porselin\ kosong$

- Plate 1

Cake basah = (40,59-38.08) gr

= 2,71 gr

- Plate 2

  Cake basah = (38.89-44,48) gr

  = 1,54 gr

- Plate 3

  Cake basah = (46,02-36,68) gr

  = 1,21 gr

- Plate 4

  Cake basah = (49,83 -48,92) gr

  = 0,91 gr

2.3.2 Cake

$$Berat\ kering = Cake\ kering - Berat\ cawan\ porselin\ kosong$$

- Plate 1

  Cake kering = (39,93-38.08) gr

  = 1,85 gr

- Plate 2

  Cake kering = (44,98-44,48) gr

  = 0,50 gr

- Plate 3

  Cake kering = (38,84-36,68) gr

  = 0,12 gr

- Plate 4

  Cake kering = (48,97-48,92) gr

  = 0,05 gr

2.4 Densitas Variabel 2 (500 gr)

Rumus densitas :

$$\rho = \frac{massa\ piknometer\ isi - massa\ piknometer\ kosong}{volume\ piknometer}$$

- Filtrat 1

  $\rho = \frac{(53{,}67-27.07)\ gr}{25\ ml}$

  = 1,0640 gr/ml

- Filtrat 2

  $\rho = \frac{(53.65-27.07)\ gr}{25\ ml}$

= 1,0638 gr/ml

- Filtrat 3

$\rho = \frac{(54{,}60-27.07)\ gr}{25\ ml}$

= 1,0624 gr/ml

- Filtrat 4

$\rho = \frac{(53{,}58-27.07)\ gr}{25\ ml}$

= 1,0604 gr/ml

- Filtrat 5

$\rho = \frac{(53{,}56-27.07)\ gr}{25\ ml}$

= 1,0596 gr/ml

2.5 Viskositas Variabel 2 (500 gr)

Rumus Viskositas :

$$\mu = \frac{tx \times \rho x}{t0 \times \rho 0} \times \mu_0$$

- Filtrat 1

$\mu = \frac{1{,}63s \times 1{,}0640\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,503 cp

- Filtrat 2

$\mu = \frac{1{,}60\ s \times 1{,}06381{,}083\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,702 cp

- Filtrat 3

$\mu = \frac{1{,}49\ s \times 1{,}0624\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,062 cp

- Filtrat 4

$\mu = \frac{1{,}31\ s \times 1{,}0604\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,389 cp

- Filtrat 5

$\mu = \frac{1{,}26\ s \times 1{,}0596\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$

= 1,335 cp

2.6 Massa Cake Basah, Cake Kering dan % Kadar Air yang Menguap Variabel 2

2.6.1 Cake Basah

$$Berat\ Basah = Cake\ Basah - Berat\ cawan\ porselin\ kosong$$

- Plate 1

  Cake basah = (43,6-38.08) gr

  = 5,28 gr

- Plate 2

  Cake basah = (48,06-44,48) gr

  = 4,28 gr

- Plate 3

  Cake basah = (42,57-36,68) gr

  = 3,89 gr

- Plate 4

  Cake basah = (54,47 -48,92) gr

  = 3,55 gr

2.6.2 Cake

$$Berat\ kering = Cake\ kering - Berat\ cawan\ porselin\ kosong$$

- Plate 1

  Cake kering = (40,93-38.08) gr

  = 2,85 gr

- Plate 2

  Cake kering = (46,59-44,48) gr

  = 2,11 gr

- Plate 3

  Cake kering = (40,37-36,68) gr

  = 1,69 gr

- Plate 4

  Cake kering = (50,13-48,92) gr

  = 1,21 gr

2.7 Densitas Variabel 3

Rumus densitas :

$$\rho = \frac{massa\ piknometer\ isi - massa\ piknometer\ kosong}{volume\ piknometer}$$

- Filtrat 1

$$\rho = \frac{(53{,}97-27.07)\ gr}{25\ ml}$$

= 1,0760 gr/ml

- Filtrat 2

$$\rho = \frac{(53.88-27.07)\ gr}{25\ ml}$$

= 1,0724 gr/ml

- Filtrat 3

$$\rho = \frac{(53{,}84-27.07)\ gr}{25\ ml}$$

= 1,0708 gr/ml

- Filtrat 4

$$\rho = \frac{(53{,}83-27.07)\ gr}{25\ ml}$$

= 1,0704 gr/ml

- Filtrat 5

$$\rho = \frac{(53{,}76-27.07)\ gr}{25\ ml}$$

= 1,0676 gr/ml

2.8 Viskositas Variabel 3

Rumus Viskositas :

$$\mu = \frac{tx \times \rho x}{t0 \times \rho 0} \times \mu_0$$

- Filtrat 1

$$\mu = \frac{1{,}71\ s \times 10760\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,834 cp

- Filtrat 2

$$\mu = \frac{1{,}68\ s \times 1{,}0724\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,802 cp

- Filtrat 3

$$\mu = \frac{1{,}50\ s \times 1{,}0708\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,0607 cp

- Filtrat 4

$$\mu = \frac{1{,}47s \times 1{,}0704\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,573 cp

- Filtrat 5

$$\mu = \frac{1{,}39 \times 1{,}0676\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,484 cp

2.9 Massa Cake Basah, Cake Kering dan % Kadar Air yang Menguap Variabel 2
Cake Basah

Berat Basah=Cake Basah-Berat cawan porselin kosong

Plate 1

Cake basah = (45938.08) gr

= 7,31 gr

Plate 2

Cake basah = (50,54-44,48) gr

= 6,25 gr

Plate 3

Cake basah = (44,29-36,68) gr

= 5,61 gr

Plate 4

Cake basah = (53,98 -48,92) gr

= 5,06 gr

Cake

Berat kering=Cake kering-Berat cawan porselin kosong

Plate 1

Cake kering = (43,11-38.08) gr

= 5,03 gr

Plate 2

Cake kering = (49,43-44,48) gr

= 4,95 gr

Plate 3

Cake kering = (41,85-36,68) gr

= 3,17 gr

Plate 4

Cake kering = (50,48-48,92) gr

= 1,56 gr

3. Lampiran Foto Hasil Percobaan

Alat Filtrasi

Menghitung Viskositas

Menghitung Densitas

Kopi Nescafe

Filtrat Variabel 1

Filtrat Variabel 2

Filtrat Variabel 3

Hasil Cake