LAMPIRAN

1. Hasil Pengamatan

1.1 Tabel 9. Hasil Pengamatan Densitas dan Viskositas

Variabel				Pengamatan	
Berat Kopi (gr)	Volume air (L)	Waktu Filtrasi (menit)	Filtrat ke	Densitas (gr/ml)	Viskositas (cp)
500	20	50	1	1,056	1,447
			2	1,054	1,307
			3	1,053	1,390
			4	1,052	1,283
			5	1,051	1,208
500	30	50	1	1,054	1,445
			2	1,054	1,307
			3	1,052	1,389
			4	1,052	1,283
			5	1,050	1,207
500	40	50	1	1,049	1,437
			2	1,049	1,301
			3	1,048	1,383
			4	1,046	1,277
			5	1,046	1,202

1.2 Tabel 10. Hasil Volume Filtrat

Variabel			Pengamatan	Valve pengambilan filtrate				
Waktu (menit)	Air	Massa (gr)	Waktu (menit)	I	II	III	IV	V
50	20 L	500 gr	10	2560	2310	2115	2070	1980
			20	2800	2690	2430	2212	2100
			30	3664	3513	3458	3310	3050
			40	4920	4710	4610	4410	4310
			50	5270	5250	5190	5160	5140
50	30 L	500 gr	10	2200	1835	1805	1670	1535
			20	2455	2100	1990	1860	1780
			30	2675	2305	2219	2190	2089
			40	3875	3665	3470	3240	3150
			50	4960	4570	4330	4190	4030
50	30 L	500 gr	10	1400	1230	1190	1150	700
			20	1950	2000	1575	1500	815
			30	2475	2550	2260	2135	1075
			40	2900	2800	2420	2300	1200
			50	3350	3250	2900	2650	1400

1.3 Tabel 11. Hasil Pengamatan Cake Basah dan Cake Kering

Variabel				Pengamatan	
Variabel	Volume (ml)	Lama Pengovenan (jam)	Plate ke	Cake Basah (gr)	Cake Kering (gr)
500 gr	20	2	1	67,18	39,40
			2	87,35	63,52
			3	76,02	56,19
			4	54,53	43,69
500 gr	30	2	1	72,20	41,34
			2	72,74	51,97
			3	82,26	63,12
			4	52,34	32,63
500 gr	40	2	1	59,30	38,66
			2	71,41	46,23
			3	67,46	46,81
			4	44,69	26,79

2. Perhitungan

2.1 Densitas Variabel 1 (500 gr dalam 20 liter)

Rumus densitas :

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

- Filtrat 1

$$\rho = \frac{(53{,}39-26.97)\ gr}{25\ ml}$$

= 1,0568 gr/ml

- Filtrat 2

$$\rho = \frac{(53{,}34-26.97)\ gr}{25\ ml}$$

= 1,0548 gr/ml

- Filtrat 3

$$\rho = \frac{(53{,}30-26.97)\ gr}{25\ ml}$$

= 1,0532 gr/ml

- Filtrat 4

$$\rho = \frac{(53{,}27-26.97)\ gr}{25\ ml}$$

= 1,052 gr/ml

- Filtrat 5

$$\rho = \frac{(53{,}25-26.97)\ gr}{25\ ml}$$

= 1,0512 gr/ml

2.2 Viskositas Variabel 1 (500 gr dalam 20 liter)

Rumus Viskositas :

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

- Filtrat 1

$$\mu = \frac{1{,}37\ s \times 1{,}0568\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,447 cp

- Filtrat 2

$$\mu = \frac{1{,}24\ s \times 1{,}0548\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,307 cp

- Filtrat 3

$$\mu = \frac{1{,}32\ s \times 1{,}0532\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,390 cp

- Filtrat 4

$$\mu = \frac{1{,}22\ s \times 1{,}052\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,283 cp

- Filtrat 5

$$\mu = \frac{1{,}15\ s \times 1{,}0512\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,208 cp

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 = (106,15-38,97) gr
  = 67,18 gr
- Plate 2
  Cake basah = (119,28-31,93) gr
  = 87,35 gr
- Plate 3
  Cake basah = (101,15-25,13) gr
  = 76,02 gr
- Plate 4
  Cake basah = (98,42-43,89) gr
  = 54,53 gr

2.3.2 Cake Kering

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

- Plate 1
  Cake kering = (78,37-38,97) gr
  = 39,4 gr
- Plate 2
  Cake kering = (95,45-31,93) gr
  = 63,52 gr
- Plate 3
  Cake kering = (81,32-25,13) gr
  = 56,19 gr
- Plate 4
  Cake kering = (87,58-43,89) gr
  = 43,69 gr

2.4 Densitas Variabel 2 (500 gr dalam 30 liter)

Rumus densitas :

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

- Filtrat 1

$$\rho = \frac{(53{,}34-26.97)\ gr}{25\ ml}$$

= 1,0548 gr/ml

- Filtrat 2

$$\rho = \frac{(53{,}33-26.97)\ gr}{25\ ml}$$

= 1,0544 gr/ml

- Filtrat 3

$$\rho = \frac{(53{,}29-26.97)\ gr}{25\ ml}$$

= 1,0528 gr/ml

- Filtrat 4

$$\rho = \frac{(53{,}27-26.97)\ gr}{25\ ml}$$

= 1,052 gr/ml

- Filtrat 5

$$\rho = \frac{(53{,}23-26.97)\ gr}{25\ ml}$$

= 1,0504 gr/ml

2.5 Viskositas Variabel 2 (500 gr dalm 30 liter)

Rumus Viskositas :

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

- Filtrat 1

$$\mu = \frac{1{,}37\ s \times 1{,}0548\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,445 cp

- Filtrat 2

$$\mu = \frac{1{,}24\ s \times 1{,}00544\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,307 cp

- Filtrat 3

$$\mu = \frac{1{,}32\ s \times 1{,}0528\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,389 cp

- Filtrat 4

$$\mu = \frac{1{,}22\ s \times 1{,}52\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,283 cp

- Filtrat 5

$$\mu = \frac{1{,}15\ s \times 1{,}502046\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,207 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 = (111,17-38,97) gr
  = 72,2 gr
- Plate 2
  Cake basah = (104,67-31,93) gr
  = 72,74 gr
- Plate 3
  Cake basah = (107,39-25,13) gr
  = 82,26 gr
- Plate 4
  Cake basah = (96,23-43,89) gr
  = 54,53 gr

2.6.2 Cake Kering

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

- Plate 1
  Cake kering = (80,31-38,97) gr
  = 41,34 gr
- Plate 2
  Cake kering = (83,9-31,93) gr
  = 51,97 gr
- Plate 3
  Cake kering = (88,25-25,13) gr
  = 63,12 gr
- Plate 4
  Cake kering = (76,52-43,89) gr
  = 32,63 gr

2.7 Densitas Variabel 3 (500 gr dalam 40 liter)

Rumus densitas :

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

- Filtrat 1
  $\rho = \frac{(53{,}21-26{,}97)\ gr}{25\ ml}$
  = 1,049 gr/ml
- Filtrat 2
  $\rho = \frac{(53{,}2-26{,}97)\ gr}{25\ ml}$
  = 1,049 gr/ml
- Filtrat 3
  $\rho = \frac{(52{,}17-26{,}97)\ gr}{25\ ml}$
  = 1,048 gr/ml
- Filtrat 4
  $\rho = \frac{(53{,}14-26{,}97)\ gr}{25\ ml}$
  = 1,046 gr/ml

- Filtrat 5
  $\rho = \frac{(53{,}12-26{,}97)\ gr}{25\ ml}$
  = 1,046 gr/ml

2.8 Viskositas Variabel 2 (500 gr dalm 40 liter)
Rumus Viskositas :

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

- Filtrat 1

$$\mu = \frac{1{,}29\ s \times 1{,}0496\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,437 cp

- Filtrat 2

$$\mu = \frac{1{,}24\ s \times 1{,}0492\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,301 cp

- Filtrat 3

$$\mu = \frac{1{,}19\ s \times 1{,}048\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,383 cp

- Filtrat 4

$$\mu = \frac{1{,}14\ s \times 1{,}0468\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,277 cp

- Filtrat 5

$$\mu = \frac{1{,}17\ s \times 1{,}046\ \text{gr/ml}}{1\ s \times 1\ \text{gr/ml}} \times 1\ \text{cp}$$

= 1,202 cp

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

2.9.1 Cake Basah

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

- Plate 1
  Cake basah = (98,27-38,97) gr
  = 59,3 gr
- Plate 2
  Cake basah = (103,34-31,93) gr
  = 71,41 gr
- Plate 3

Cake basah = (92,59-25,13) gr
= 67,46 gr

- Plate 4
  Cake basah = (88,58-43,89) gr
  = 44,69 gr

2.9.2 Cake Kering

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

- Plate 1
  Cake kering = (77,63-38,97) gr
  = 38,66 gr
- Plate 2
  Cake kering = (78,16-31,93) gr
  = 46,23 gr
- Plate 3
  Cake kering = (71,94-25,13) gr
  = 46,81 gr
- Plate 4
  Cake kering = (70,68-43,89) gr
  = 26,79 gr

3. Lampiran Foto Hasil Percobaan

Alat Filtrasi

Menghitung Densias

Menghitung Viskositas

Proses Pengambilan Filtrat

Cake Basah

Menimbang Cake

Mengoven Cake

Proses Desikator

Cake Kering

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Judul Bahasa Indonesia	: Pengaruh Perbedaan Konsentrasi Pada Filtrasi Kopi ABC Terhadap Hasil Filtrat Menggunakan Alat *Plate and Frame Filter*
Judul Bahasa Inggris	: *Effect of Concentration's Difference on ABC Coffee Filtration on the Filtrate of Plate and Frame Filter*

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