

LAMPIRAN

Lampiran 1. Perhitungan

KADAR KAFEIN

Sampel Kopi	Waktu Retensi	Area Puncak	Konsentrasi ($\mu\text{g/mL}$)	% Kadar Kafein (b/b)
Pupuan I	3.355	24294775	508,7975	50,879
Pupuan II	3.353	23426340	490,5520	49,055
Pupuan III	3.361	22935822	480,2462	48,024
Gesing I	3.366	24270406	508,2856	50,828
Gesing II	3.362	25110022	525,9257	52,592
Gesing III	3.355	22928633	480,0943	48,009
Banyuatis I	3.365	26170353	548,2029	54,820
Banyuatis II	3.353	27260150	571,0993	57,109
Banyuatis III	3.363	28552365	598,2480	59,824

Perhitungan Kadar Kafein

$$y = 47597x + 77536$$

Pupuan I

$$y = 47597x + 77536$$

$$24294775 = 47597x + 77536$$

$$x = \frac{24294775 - 77536}{47597}$$

$$x = 508,7975 \mu\text{g/mL} = 0,05 \%$$

$$\text{mg kafein} = \text{ppm} \times V (\text{L})$$

$$= 508,7975 \text{ ppm} \times 0,01 \text{ L}$$

$$= 5,0879 \text{ mg}$$

Kadar mg kafein dalam hasil percobaan

$$\begin{aligned}\frac{5,0879 \text{ mg}}{10 \text{ mg}} &= \frac{0,0050879 \text{ g}}{0,010 \text{ g}} \\ &= 0,50789 \text{ g/g} \\ &= 50,879 \% \text{ (b/b)}\end{aligned}$$

Pupuan II

$$y = 47597x + 77536$$

$$23426340 = 47597x + 77536$$

$$x = \frac{23426340 - 77536}{47597}$$

$$x = 490,5520 \text{ } \mu\text{g/mL} = 0,049 \%$$

$$\begin{aligned}\text{mg kafein} &= \text{ppm} \times V \text{ (L)} \\ &= 490,5520 \text{ ppm} \times 0,01 \text{ L} \\ &= 4,9055 \text{ mg}\end{aligned}$$

Kadar mg kafein dalam hasil percobaan

$$\begin{aligned}\frac{4,9055 \text{ mg}}{10 \text{ mg}} &= \frac{0,0049055 \text{ g}}{0,010 \text{ g}} \\ &= 0,49055 \text{ g/g} \\ &= 49,055 \% \text{ (b/b)}\end{aligned}$$

Pupuan III

$$y = 47597x + 77536$$

$$22935822 = 47597x + 77536$$

$$x = \frac{22935822 - 77536}{47597}$$

$$x = 480,2462 \text{ } \mu\text{g/mL} = 0,048 \%$$

$$\begin{aligned}
 \text{mg kafein} &= \text{ppm} \times V \text{ (L)} \\
 &= 480,2462 \text{ ppm} \times 0,01 \text{ L} \\
 &= 4,8024 \text{ mg}
 \end{aligned}$$

Kadar mg kafein dalam hasil percobaan

$$\begin{aligned}
 \frac{4,8024 \text{ mg}}{10 \text{ mg}} &= \frac{0,0048024 \text{ g}}{0,010 \text{ g}} \\
 &= 0,48024 \text{ g/g} \\
 &= 48,024 \% \text{ (b/b)}
 \end{aligned}$$

Gesing I

$$\begin{aligned}
 y &= 47597x + 77536 \\
 24270406 &= 47597x + 77536
 \end{aligned}$$

$$x = \frac{24270406 - 77536}{47597}$$

$$x = 508,2856 \text{ } \mu\text{g/mL} = 0,05 \%$$

$$\begin{aligned}
 \text{mg kafein} &= \text{ppm} \times V \text{ (L)} \\
 &= 508,2856 \text{ ppm} \times 0,01 \text{ L} \\
 &= 5,0828 \text{ mg}
 \end{aligned}$$

Kadar mg kafein dalam hasil percobaan

$$\begin{aligned}
 \frac{5,0828 \text{ mg}}{10 \text{ mg}} &= \frac{0,0050828 \text{ g}}{0,010 \text{ g}} \\
 &= 0,50828 \text{ g/g} \\
 &= 50,828 \% \text{ (b/b)}
 \end{aligned}$$

Gesing II

$$\begin{aligned}
 y &= 47597x + 77536 \\
 25110022 &= 47597x + 77536
 \end{aligned}$$

$$x = \frac{25110022 - 77536}{47597}$$

$$x = 525,9257 \mu\text{g/mL} = 0,052 \%$$

$$\begin{aligned} \text{mg kafein} &= \text{ppm} \times V \text{ (L)} \\ &= 525,9257 \text{ ppm} \times 0,01 \text{ L} \\ &= 5,2592 \text{ mg} \end{aligned}$$

Kadar mg kafein dalam hasil percobaan

$$\begin{aligned} \frac{5,2592 \text{ mg}}{10 \text{ mg}} &= \frac{0,0052592 \text{ g}}{0,010 \text{ g}} \\ &= 0,52592 \text{ g/g} \\ &= 52,592 \% \text{ (b/b)} \end{aligned}$$

Gesing III

$$y = 47597x + 77536$$

$$22928633 = 47597x + 77536$$

$$x = \frac{22928633 - 77536}{47597}$$

$$x = 480,0943 \mu\text{g/mL} = 0,048 \%$$

$$\begin{aligned} \text{mg kafein} &= \text{ppm} \times V \text{ (L)} \\ &= 480,0943 \text{ ppm} \times 0,01 \text{ L} \\ &= 4,8009 \text{ mg} \end{aligned}$$

Kadar mg kafein dalam hasil percobaan

$$\begin{aligned} \frac{4,8009}{10 \text{ mg}} &= \frac{0,0048009 \text{ g}}{0,010 \text{ g}} \\ &= 0,48009 \text{ g/g} \\ &= 48,009 \% \text{ (b/b)} \end{aligned}$$

Banyuatis I

$$y = 47597x + 77536$$

$$26170353 = 47597x + 77536$$

$$x = \frac{26170353 - 77536}{47597}$$

$$x = 548,2029 \mu\text{g/mL} = 0,054 \%$$

$$\text{mg kafein} = \text{ppm} \times V (\text{L})$$

$$= 548,2029 \text{ ppm} \times 0,01 \text{ L}$$

$$= 5,48202 \text{ mg}$$

Kadar mg kafein dalam hasil percobaan

$$\frac{5,48202 \text{ mg}}{10 \text{ mg}} = \frac{0,0054820 \text{ g}}{0,010 \text{ g}}$$

$$= 0,5482 \text{ g/g}$$

$$= 54,82 \% (\text{b/b})$$

Banyuatis II

$$y = 47597x + 77536$$

$$27260150 = 47597x + 77536$$

$$x = \frac{27260150 - 77536}{47597}$$

$$x = 571,0993 \mu\text{g/mL} = 0,057 \%$$

$$\text{mg kafein} = \text{ppm} \times V (\text{L})$$

$$= 571,0993 \text{ ppm} \times 0,01 \text{ L}$$

$$= 5,7109 \text{ mg}$$

Kadar mg kafein dalam hasil percobaan

$$\begin{aligned}\frac{5,7109}{10 \text{ mg}} &= \frac{0,0057109 \text{ g}}{0,010 \text{ g}} \\ &= 0,57109 \text{ g/g} \\ &= 57,109 \% \text{ (b/b)}\end{aligned}$$

Banyuatis III

$$y = 47597x + 77536$$

$$28552365 = 47597x + 77536$$

$$x = \frac{28552365 - 77536}{47597}$$

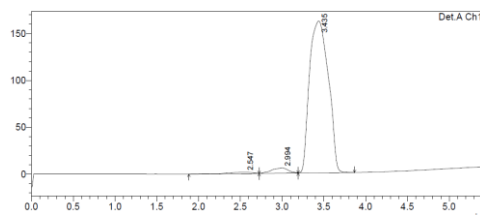
$$x = 598,248 \text{ } \mu\text{g/mL } 0,059 \%$$

$$\begin{aligned}\text{mg kafein} &= \text{ppm} \times V \text{ (L)} \\ &= 598,248 \text{ ppm} \times 0,01 \text{ L} \\ &= 5,9824 \text{ mg}\end{aligned}$$

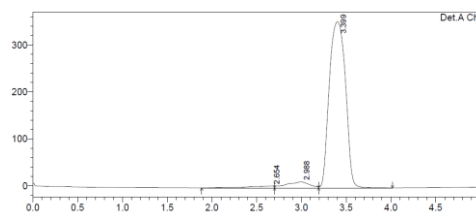
Kadar mg kafein dalam hasil percobaan

$$\begin{aligned}\frac{5,9824 \text{ mg}}{10 \text{ mg}} &= \frac{0,0059824 \text{ g}}{0,010 \text{ g}} \\ &= 0,59824 \text{ g/g} \\ &= 59,824 \% \text{ (b/b)}\end{aligned}$$

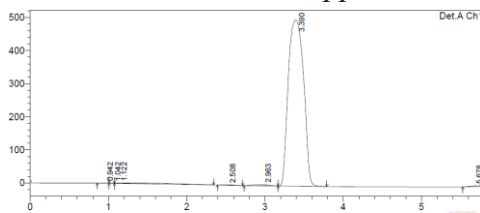
Lampiran 2. Kromatogram



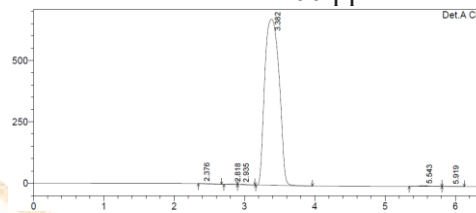
Baku Kafein 50 ppm



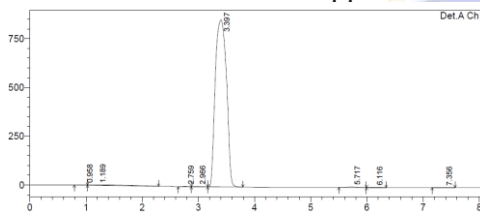
Baku Kafein 100 ppm



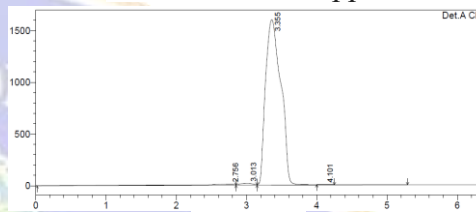
Baku Kafein 150 ppm



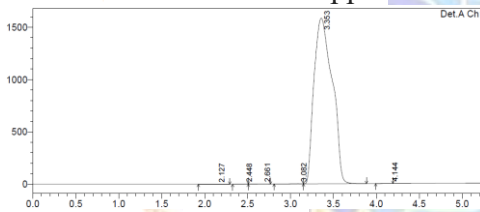
Baku Kafein 200 ppm



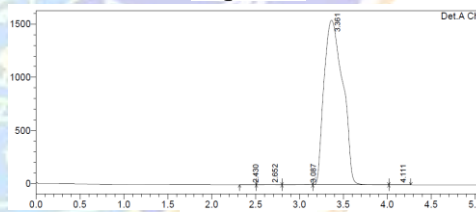
Baku Kafein 250 ppm



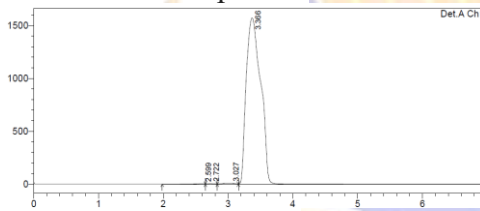
Pupuan I



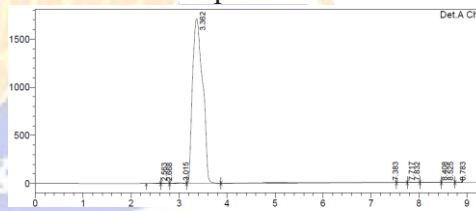
Pupuan II



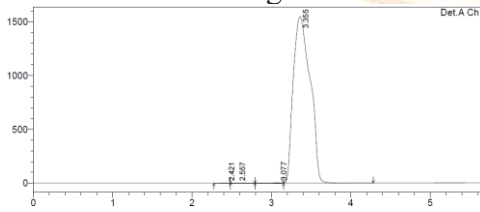
Pupuan III



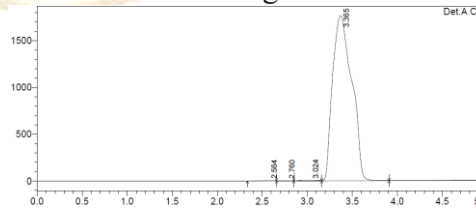
Gesing I



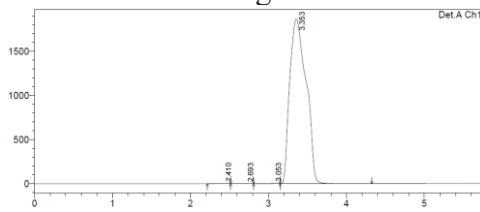
Gesing II



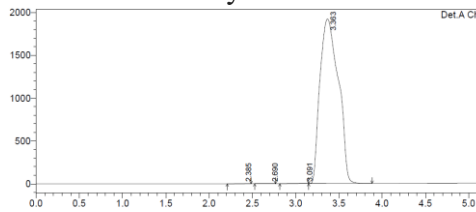
Gesing III



Banyuatis I



Banyuatis II



Banyuatis III

Lampiran 3. Dokumentasi Kegiatan



Pelarutan Kopi Bubuk



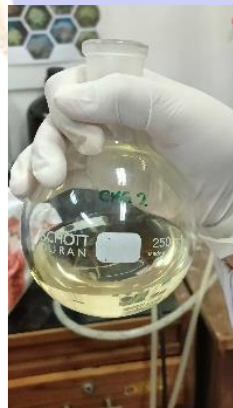
Rangkaian Pemisahan



Lapisan Larutan Hasil Pemisahan



Hasil Pemisahan



Hasil Penyaringan



Pemekatan dengan *Rotary Evaporator*



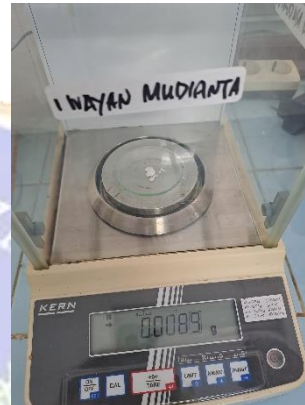
Pemanasan dengan *Hotplate*



Pembentukan Kristal



Penyaringan dengan Corong Buchner



Penimbangan Kafein



Instrumen HPLC

Lampiran 4. Riwayat Hidup



Gede Eka Amerta Saputra lahir di Singaraja pada tanggal 06 April 2003. Penulis lahir dari pasangan suami istri Bapak Nyoman Suryawan dan Ibu Desak Made Resini. Penulis berkebangsaan Indonesia dan beragama Hindu. Pada saat ini penulis beralamat di Jalan Udayana Gang I No 09 Kecamatan Seririt, Kabupaten Buleleng, Provinsi Bali. Penulis menyelesaikan pendidikan dasar di Sekolah Dasar No 1 Seririt dan lulus pada tahun

2015. Kemudian penulis melanjutkan di Sekolah Menengah Pertama Negeri 1 Seririt dan lulus pada tahun 2018. Pada Tahun 2021, penulis lulus dari Sekolah Menengah Atas Negeri 1 Seririt jurusan MIPA dan melanjutkan ke Sarjana Kimia Terapan di Universitas Pendidikan Ganesha. Pada bulan Juli 2025, penulis telah menyelesaikan Tugas Akhir yang berjudul “Isolasi dan Penentuan Kadar Kafein dalam Serbuk Kopi dari Berbagai Daerah di Bali”.

