DAFTAR PUSTAKA

Anggraito, Y. U. 2018. *Metabolit Sekunder Pada Tumbuhan*. Semarang: Universitas Negeri semarang. ISBN: 978-602-5728-05-1.

Blainski, A., Cristiny, G., and de Mello, J. 2013. *Application and Analysis of thr Folin Ciocalteu Method for the Determination of The Total Phenolic Content from limonium Brasiliense* L. *J. Mdpi Molecules.* 18 (6855).

Cahyanto, H. A. 2018. *Aktivitas Antioksidan Ekstrak Etanol Biji Pinang* (*Areca catechu* L.). *Majalah BIAM*, 14(2), p. 70. doi:10.29360/mb.v14i2.4101.

Chavan, Y. V. and Singhal, R. S. 2013. Separation of polyphenols and arecoline from areca nut (*Areca catechu* L.) by solvent extraction, its antioxidant activity, and identification of polyphenols. *Journal of the Science of Food and Agriculture*, 93(10), pp. 2580–2589. doi: 10.1002/jsfa.6081.

Chun, O. K., Kim D.O. And Lee, C.Y. 2003. Superoxide Radical Scavenging Activity of the Major Polyphenols in Fresh Plums. *Journal of Agricultural and Food Chemistry.* 51:8067-8072.

Dalimartha, S. 2009. *Atlas Tumbuhan Obat Indonesia*. Jilid Keenam. Cetakan Pertama. Jakarta: Pustaka Bunda.

Departemen Kesehatan Republik Indonesia. 1983. *Pemanfaatan Tanaman Obat*. Direktoral Jenderal Pengawasan Obat dan Makanan. Jakarta.

Deinstrop, E. H. 2007. *Applied Thin-Layer Chromatography: Best Practice and Avoidance of Mistakes* (2nd Ed). Penerjemahan: R. G. Weinheim: Wiley-vch Verlag GmbH & Co.

Dewi, Z. S., Zulkifli, Z. Z. and Khusna, A.R. 2017. *Maserasi Dan Uji Aktivitas Ic 50 Antioksidan Buah Pinang* (*Areca Catechu* L.) *Secara Spektrofotometri Uv- Vis Maseration And Ic 50 Antioxidant Activity Testing Of Areca Nut By UV- Vis Spectrophotometry.* 1, p. 6.

Dutta, D., Ramanna, C. and Kamath, V. V. 2017. Estimation of arecoline content of various forms of areca nut preparations by high-pressure thin-layer chromatography. *Journal of Advanced Clinical & Research Insights*, 4(2), pp. 31–37. doi: 10.15713/ins.jcri.153.

Endarini. L. H. 2016. *Farmakognosi dan Fitokimia*. Jakarta: Pusdik SDM Kesehatan.

Gandjar, I. G. dan Rohman, A. 2007. Kimia Farmasi Analisis. Pustaka Pelajar. Yogyakarta.

Gassa, A., Sulaeha & S. Yuyun. 2008. Uji keefektifan ekstrak biji buah pinang (*Areca catechu* L.) terhadap tingkat mortalitas jentik nyamuk *Culex* sp. (Diptera: Culicidae). *Jurnal Penelitian*. Fakultas Teknologi Pertanian Universitas Hasanudin. 1(2):4-5.

Gruenwald, J. P., Brendler, T., and Jaenicke, C. 200. PDR for Herbal Medicine.

Handayani, S., Meiyanto, E. and Susidarti, R. A. 2008. Areca (*Areca catechu* L.) Seeds Ethanolic Extract and Its Chloroform Fraction Induce Apoptosis and Decrease COX-2 Expression on WiDr Cells, *Proceeding The International symposium on Molecular targeted Therapy*, ISBN: 978-979-95107-6-1, Faculty of Pharmacy UGM, 2008, pp. 67-74.

Handayani, S., Meiyanto, E. and Susidarti, R. A. 2010. Toksisitas Akut Ekstrak Etanolik Biji Buah Pinang (Areca catechu L .) Terhadap Tikus Jantan Galur Sprague Dawley. *Pusat Penelitian Kimia Lembaga Ilmu Pengetahuan Indonesia*, pp. 1–9.

Harbone, J. B. 1987. *Metode Fitokimia* Edisi kedua. ITB. Bandung.

Hartono, F dan Trismiyati. 2016. Klasifikasi Biji Pinang Belah Pada Pengembangan Mesin Sortir Pinang Menggunakan Pengolahan Citra Digital. *Jurnal Riset Industri* Vol. 10 No.2, pp. 61-69.

Heyne, K. 1987. *Tumbuhan Berguna Indonesia.* Jakarta: Yayasan Sarana Wana Jaya.

Husni, A. dan Budhiyanti, S. A. 2021. *Rumput Laut sebagai Sumber Pangan, Kesehatan, dan Kosmotik*. Yogyakarta: Gajah Mada University Press.

Jaiswal, P., K. Pradeep, V. K. Singh & D. K. Singh. 2005. (*Areca catechu* L.): A valuable herbal medicine against different health problems. *Journal og medical plant.* 5(2): 45-52.

Jena, S., Tokas, R.B., Thakur, S., and Sahoo N.K. 2015. Characterization of Optical Thin Films by Spectrophotometry and Atomic Force Microscopy. *SMC Bulletin Vol. 6 (No. 1) April 2015.*

Julianto, T. S. 2019. *Fitokimia Tinjauan Metabolit Sekunder dan Skrining Fitokimia*. Yogyakarta: Universitas Islam Indonesia. ISBN: 978-602-450-332-1.

Kemenkes RI. 2017. Farmakope Herbal Indonesia Edisi 2 (p.561).

Leba, M. A. U. 2017. *Ekstraksi dan Real Kromatografil.* Yogyakarta: Deepublish.

Marinus, G., Oktavianus & N. Rochman. 2015. Daya Insektisida ekstrak daun

otikal (*Alphitonia* sp) dan ekstrak buah pinang (*Areca catechu* L.) terhadap tingkat kematian serangga hama gudang Callosobruchus chinensis L. *Jurnal Agronida.* 1(2): 72-81.

Masduki, Imam. 1996. Efek Antibakteri Ekstrak Biji Pinang (*Areca catechu)* Terhadap S. Aureus dan E. Coli In Vitro. Cermin Dunia Kedokteran 109 : 21-23

Maskromo, I dan Miftahorrachman. 2007. Keragaman Genetik Plasma Nutfah Pinang (*Areca catechu* L.) di Propinsi Gorontalo. *Jurnal Littri* 13(4). ISSN 0853-8212.

Muir, C. S. and Kirk, R. 1960. Betel, tobacco, and cancer of the mouth', *British Journal of Cancer*, 14(4), pp. 597–608. doi:10.1038/bjc.1960.65.

Najib, A. 2018. Ekstraksi Senyawa Bahan Alam. Deepublish. Yogyakarta

Nurhasnawati, H., Sa'adah, H., and Permatasari, V. 2017. Kandungan Flavonoid Ekstrak Etanol Umbi Bawang Dayak (Eleutherine palmifolia(L.)Merr) Dengan Metode Spektrofotometri', *Journal of Pharmascientech,* 01(01), pp. 1–9.

Nursidika, P., O. Saptarini, N. Rafiqua. 2014. Aktivitas antimikroba fraksi ekstrak buah Pinang (*Areca catechu* L.) pada bakteri *Methicillin Resistant Staphylococcus aureus*. Institut Teknologi Bandung, 48(2): 94-99.

Pakki, E., Gemini, A., Usmar., Rahmawati, S. and Lukman, M. 2019. Anticancer activity of selected medicinal plants indigenous to duri ethnic', *International Journal of Pharmaceutical Research*, 11(1), pp. 602–608.

Rohman, A. 2007. *Kimia Farmasi Analisis.* Yogyakrta*:* Pustaka Pelajar.

Rohman, A. 2009. *Kromatografi untuk Analisis Obat.* Yogyakarta: Graha Ilmu.

Rubiyanto, D. 2017. *Metode Kromatografi: Prinsip Dasar, Praktikum, dan Pendekatan Pembelajaran Kromatografi*. Yogyakarta: Deepublish.

Sastrohamidjojo, H. 2007. *Spektroskopi.* Yogyakarta: Liberty.

Shaath, N. 1990. The Chemistry of Sunscreens In: N.J Lowe and N.A Shaath (Eds). Sunscreen: Development, Evaluation and Regulatory Aspects. *Marcek Dekker, Inc.*, 7(4), pp. 213–222.

Sherma, J. and Fried, G. H. 1994. *Thin-Layer chromatograph: Techniques and Application.* New York: M. Dekker.

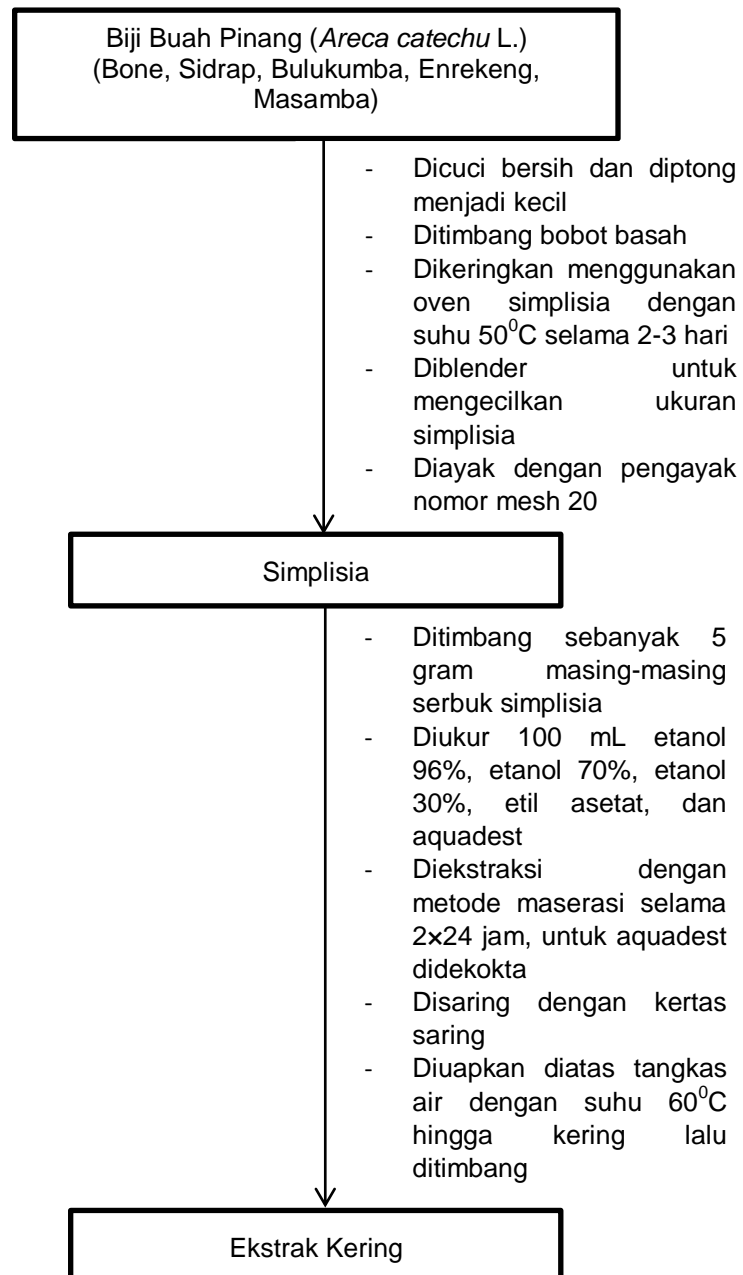Suhartati, T. 2017. *Dasar-dasar Spektrofotometri UV-Vis dan Spektometri*

Massa untuk Penetapan Struktur Senyawa Organik. Lampung: Anugrah Utama Raharja.

Suhendra, C. P., Widarta, I. W. R., dan Wiadnyani, A. A. I. S. 2019. Pengaruh Konsentrasi Etanol Terhadap Aktivitas Antioksidan Ekstrak Rimpang Ilalang (*Imperata cylindrica* (L) Beauv.) Pada Estraksi Menggunakan Gelombang ultrasonok. *Jurnal Ilmu dan Teknologi Pangan.* ISSN: 2527-8010. 8(1), 27-35.

Syamsuhidayat, S. S. Hutapea, J. R. 1991. *Inventaris Tanaman Obat Indonesia.* Edisi Kedua. Jakarta: Departemen Kesehatan RI.

Wulandari, L. 2011. *Kromatografi Lapis Tipis.* Jember: PT. Taman Kampus Presindo. ISBN: 978-979-17068-1-0.

Xiao, Y., Yang, Y., Yong, J., and Lu, C. 2019. Chemical Components and Biological Activities of *Areca Catechu* L. *Biomedical Research and Reviews.* ISSN: 2515-9186.

Yuniasih, M. J. 2017. Uji Daya Hambat Ekstrak Biji Pinang (*Areca catechu* L.) Terhadap Pertumbuhan *Streptpcoccus mutans* Secara *IN VITRO* . Molucca Medica. ISSN 2597-246X. 10 (1): 127-140.
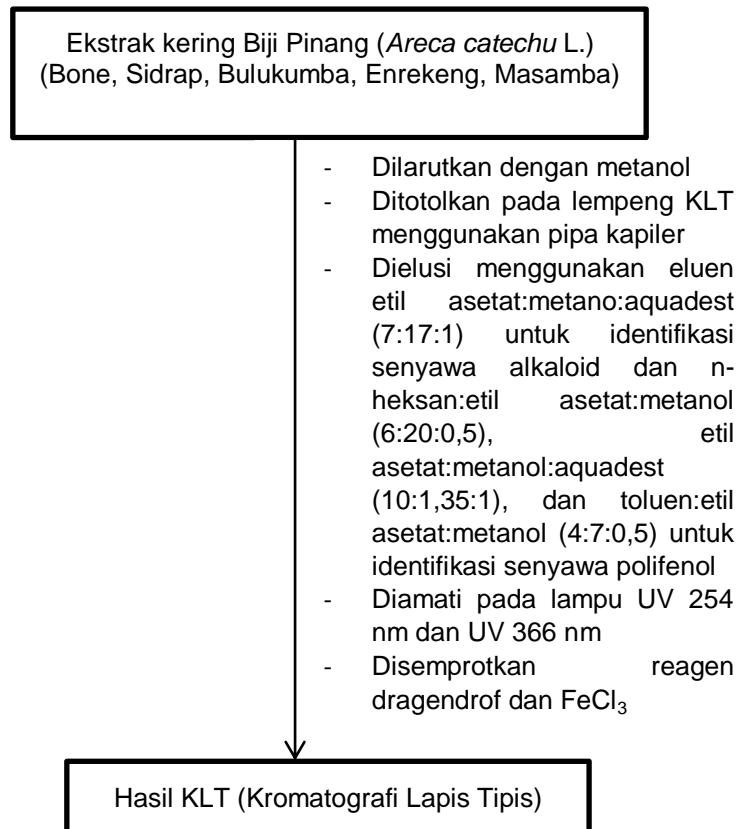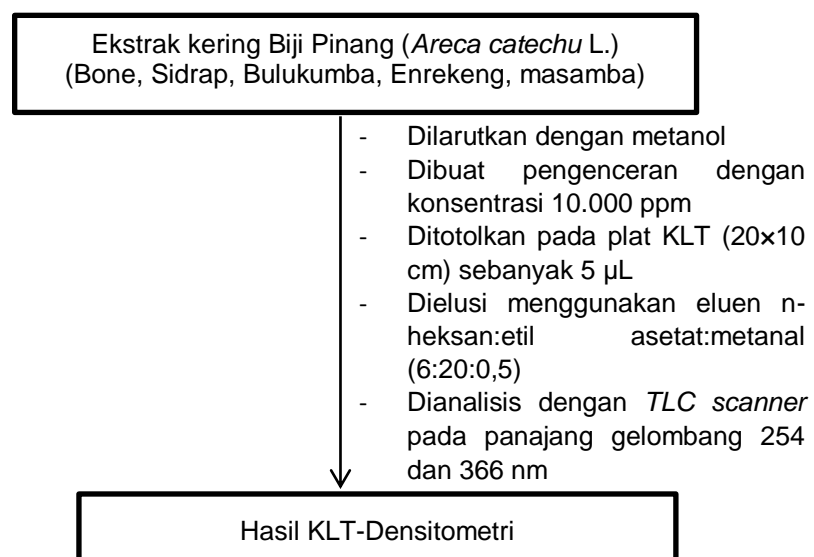
Lampiran 1

Skema Kerja

1. Penyiapan Sampel

```
┌─────────────────────────────────────┐
│  Biji Buah Pinang (Areca catechu L.) │
│  (Bone, Sidrap, Bulukumba, Enrekeng, │
│             Masamba)                 │
└─────────────────────────────────────┘
```

- Dicuci bersih dan diptong menjadi kecil
- Ditimbang bobot basah
- Dikeringkan menggunakan oven simplisia dengan suhu 50^0C selama 2-3 hari
- Diblender untuk mengecilkan ukuran simplisia
- Diayak dengan pengayak nomor mesh 20

```
┌─────────────────────────────────────┐
│             Simplisia                │
└─────────────────────────────────────┘
```

- Ditimbang sebanyak 5 gram masing-masing serbuk simplisia
- Diukur 100 mL etanol 96%, etanol 70%, etanol 30%, etil asetat, dan aquadest
- Diekstraksi dengan metode maserasi selama 2×24 jam, untuk aquadest didekokta
- Disaring dengan kertas saring
- Diuapkan diatas tangkas air dengan suhu 60^0C hingga kering lalu ditimbang

```
┌─────────────────────────────────────┐
│            Ekstrak Kering            │
└─────────────────────────────────────┘
```

2. Identifikasi Golongan Senyawa

```
┌─────────────────────────────────────────────────┐
│ Ekstrak kering Biji Pinang (Areca catechu L.)   │
│ (Bone, Sidrap, Bulukumba, Enrekeng, Masamba)    │
└─────────────────────────────────────────────────┘
```

- Dilarutkan dengan metanol
- Ditotolkan pada lempeng KLT menggunakan pipa kapiler
- Dielusi menggunakan eluen etil asetat:metano:aquadest (7:17:1) untuk identifikasi senyawa alkaloid dan n-heksan:etil asetat:metanol (6:20:0,5), etil asetat:metanol:aquadest (10:1,35:1), dan toluen:etil asetat:metanol (4:7:0,5) untuk identifikasi senyawa polifenol
- Diamati pada lampu UV 254 nm dan UV 366 nm
- Disemprotkan reagen dragendrof dan $FeCl_3$

```
┌─────────────────────────────────────────────────┐
│ Hasil KLT (Kromatografi Lapis Tipis)            │
└─────────────────────────────────────────────────┘
```

3. Penetapan Profil KLT-Densitometri

```
┌─────────────────────────────────────────────────┐
│ Ekstrak kering Biji Pinang (Areca catechu L.)   │
│ (Bone, Sidrap, Bulukumba, Enrekeng, masamba)    │
└─────────────────────────────────────────────────┘
```

- Dilarutkan dengan metanol
- Dibuat pengenceran dengan konsentrasi 10.000 ppm
- Ditotolkan pada plat KLT (20×10 cm) sebanyak 5 µL
- Dielusi menggunakan eluen n-heksan:etil asetat:metanal (6:20:0,5)
- Dianalisis dengan TLC scanner pada panajang gelombang 254 dan 366 nm

```
┌─────────────────────────────────────────────────┐
│ Hasil KLT-Densitometri                          │
└─────────────────────────────────────────────────┘
```

4. Penetapan Kandungan Polifenol Total dengan Spektrofotometer UV-Vis
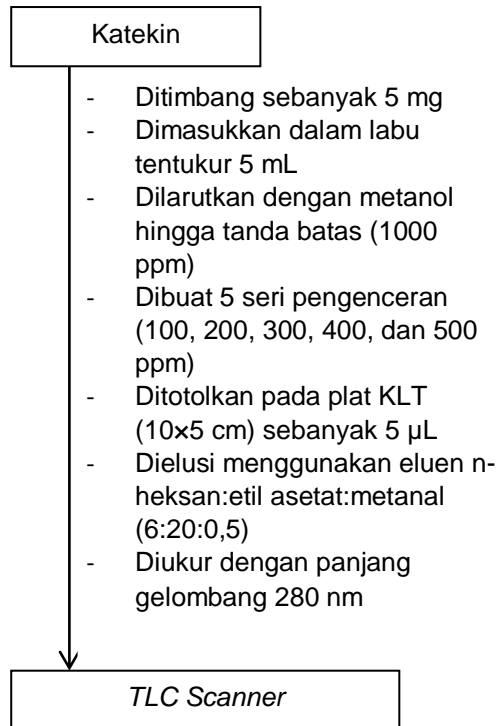
- Larutan baku

Katekin

- Ditimbang sebanyak 5 mg
- Dimasukkan dalam labu tentukur 5 mL
- Dilarutkan dengan metanol hingga tanda batas (1000 ppm)
- Dibuat 5 seri pengenceran (10, 30, 50, 70, dan 90 ppm)
- Diambil masing-masing 1 mL
- Dimasukkan dalam vial
- Ditambahkan 5 mL reagen *folin-ciocalteu* (7,5% dalam air)
- Didiamkan selama 8 menit lalu tambahkan NaOH 1 % sebanyak 4 mL
- Diinkubasi selama 1 jam
- Diukur dengan panjang gelombang 704,5 nm

Spektofotometer UV-Vis

- Larutan sampel

Ekstrak biji buah pinang

- Ditimbang sebanyak 5 mg
- Dimasukkan dalam labu tentukur 5 mL
- Dilarutkan dengan metanol hingga tanda batas (1000 ppm)
- Dibuat pengenceran 80 ppm
- Diambil 1 mL dan dimasukkan dalam vial
- Ditambahkan 5 mL reagen *folin-ciocalteu* (7,5% dalam air)
- Didiamkan selama 8 menit lalu tambahkan NaOH 1 % sebanyak 4 mL
- Diinkubasi selama 1 jam
- Diukur dengan panjang gelombang 704,5 nm

Spektofotometer UV-Vis

Analisis data

5. Penetapan Kandungan katekin dengan KLT-Densitometri

- Larutan baku   - Larutan sampel

Katekin

- Ditimbang sebanyak 5 mg
- Dimasukkan dalam labu tentukur 5 mL
- Dilarutkan dengan metanol hingga tanda batas (1000 ppm)
- Dibuat 5 seri pengenceran (100, 200, 300, 400, dan 500 ppm)
- Ditotolkan pada plat KLT (10×5 cm) sebanyak 5 µL
- Dielusi menggunakan eluen n-heksan:etil asetat:metanal (6:20:0,5)
- Diukur dengan panjang gelombang 280 nm

TLC Scanner

Ekstrak biji buah pinang

- Dilarutkan dengan metanol
- Dibuat pengenceran dengan konsentrasi 10.000 ppm
- Ditotolkan pada plat KLT (20×10 cm) sebanyak 5 µL
- Dielusi menggunakan eluen n-heksan:etil asetat:metanal (6:20:0,5)
- Dianalisis dengan *TLC scanner* pada panajang gelombang 254 dan 366 nm

TLC Scanner

Analisis data

Lampiran 2

Daftar Gambar

Gambar 12. Buah pinang

Gambar 13. Bijit buah pinang

Gambar 14. proses pengeringan

Gambar 15. Proses penguapan diatas Tangkas air

Gambar 16. Ekstrak kering

Gambar 17. Penimbangan ekstrak kering
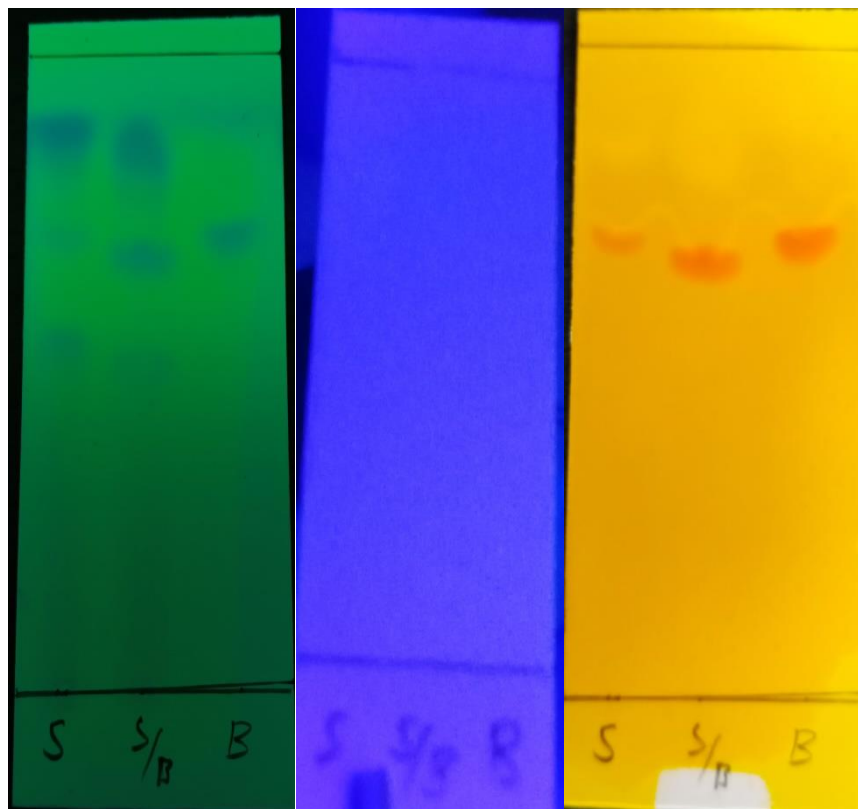
Gambar 18. Proses KLT

Gambar 19. Penyemprotan lempeng dengan reagen
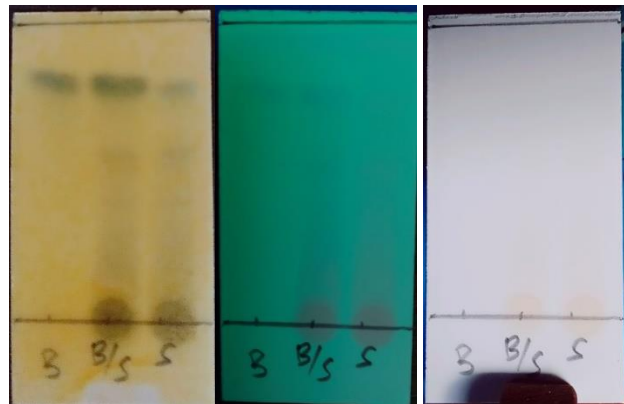
Gambar 20. Identifikasi senyawa polifenol eluen etil asetat:metanol:aquadest (10:1,35:1)
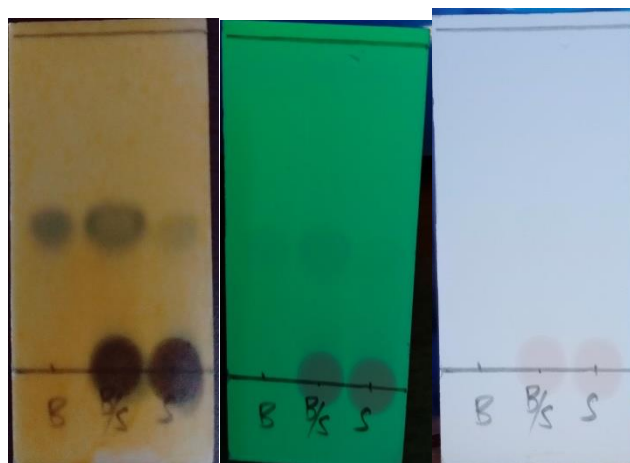
Gambar 21. Identifikasi senyawa polifenol eluen n-heksan:etil asetat:metanol (6:20:0,5)
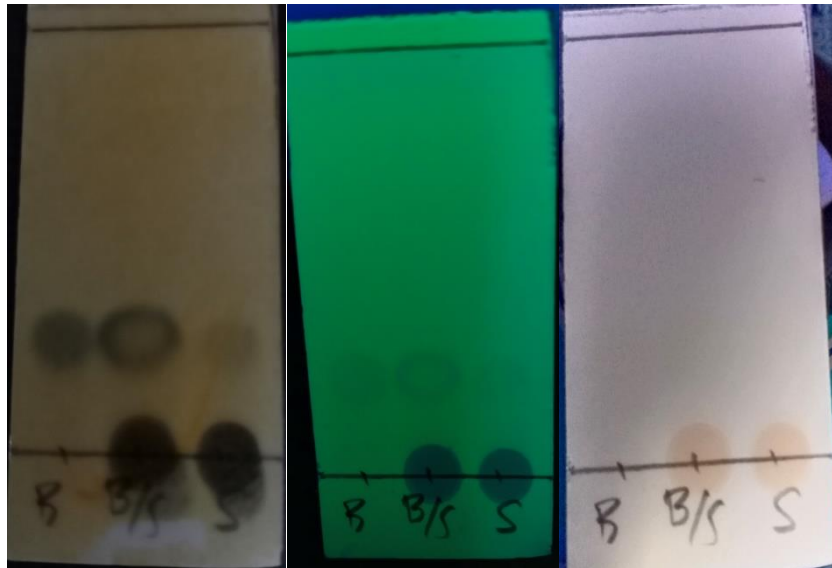
Gambar 22. Identifikasi senyawa polifenol eluen toluen:etil asetat:metanol (4:7:0,5)

Gambar 23. Identifikasi senyawa alkaloid

Gambar 24. Preparasi sampel pengukuran kadar

Gambar 25. Alat Spektrofotometer UV-Vis

Gambar 26. Proses Elusi

Gambar 27. Alat TLC *Scanner*

Gambar 28. Hasil KLT untuk densitometri
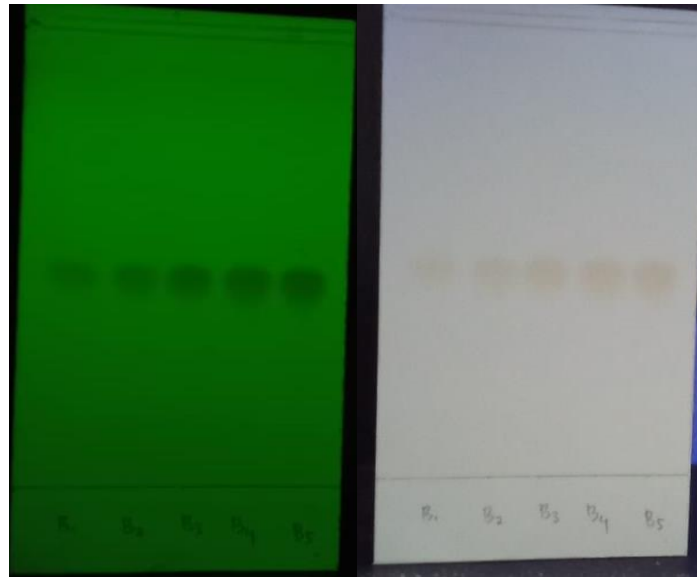
Gambar 29. Hasil KLT baku katekin untuk densitometri

Lampiran 3

Hasil Pengukuran Absorbansi Total Polifenol Ekstrak Biji Buah Pinang Dari Beberapa Daerah Menggunakan Spektrofotometer U-Vis

PELARUT EKSTRAKSI		Bulukumba		Enrekang		Sidrap		Masamba		Bone	
Etil asetat	R1	0,305		0,146		0,093		0,309		0,317	
	R2	0,328	0,328	0,150	0,150	0,115	0,113	0,326	0,318	0,324,	0,323
	R3	0,351		0,153		0,132		0,320		0,327	
Etanol 96%	R1	0,443		0,335		0,412		0,448		0,350	
	R2	0,462	0,463	0,298	0,311	0,419	0,420	0,459	0,450	0,342	0,345
	R3	0,484		0,301		0,430		0,443		0,343	
Etanol 70%	R1	0,396		0,302		0,399		0,377		0,280	
	R2	0,374	0,384	0,289	0,296	0,407	0,412	0,413	0,397	0,284	0,279
	R3	0,381		0,296		0,429		0,401		0,273	
Etanol 30%	R1	0,318		0,463		0,388		0,411		0,180	
	R2	0,317	0,322	0,448	0,450	0,394	0,388	0,427	0,413	0,179	0,170
	R3	0,330		0,440		0,381		0,402		0,150	
Aquadest	R1	0,362		0,380		0,337		0,325		0,120	
	R2	0,354	0,357	0,380	0,381	0,343	0,326	0,295	0,309	0,122	0,122
	R3	0,354		0,383		0,298		0,306		0,125	

Lampiran 4

Hasil Pengukuran Kandungan Baku Katekin Menggunakan Densitometer

Katekin Standar					
Konsentrasi	**100 ppm**	**200 ppm**	**300 ppm**	**400 ppm**	**500 ppm**
Nilai Rf	0,31	0,39	0,41	0,42	0,43
Luas area	2238,63	4838,36	7739,13	10108,37	13777,78

$y = 28.348x - 764.04$
$R^2 = 0.9952$
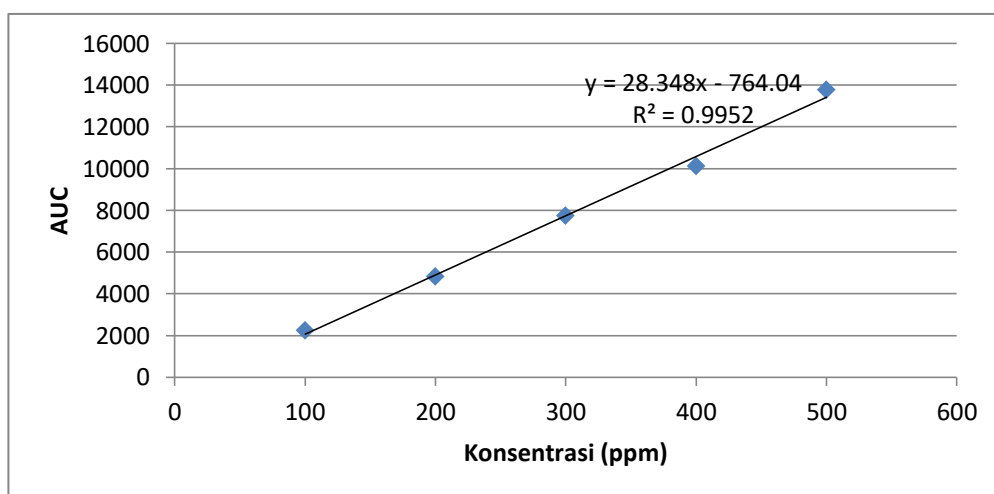
Gambar 30. Kurva hubungan konsentrasii standar katekin dengan nilai AUC

Lampiran 5

Hasil Pengukuran Kandungan Baku Polifenol Menggunakan Spektofotometer UV-Vis

Standard Table

	Sample ID	Type	Ex	Conc	WL704,5	Wgt.Factor	
1	blanko	Standard		0,000	-0,000	1,000	
2	katekin 1	Standard		10,000	0,068	1,000	
3	katekin 2	Standard		30,000	0,194	1,000	
4	katekin 3	Standard		50,000	0,352	1,000	
5	katekin 4	Standard		70,000	0,526	1,000	
6	katekin 5	Standard		90,000	0,730	1,000	
7							

Standard Curve

$y = 0,00801 x - 0,02199$
Correlation Coefficient $r2 = 0,99245$
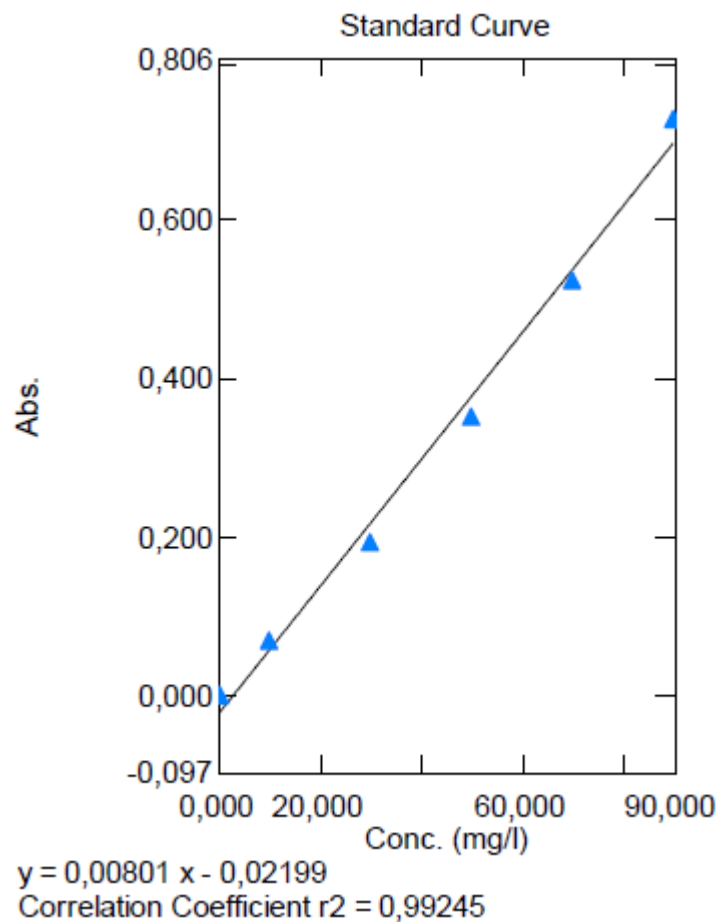
Lampiran 6

Profil KLT-Densitometri ekstrak biji buah pinang pada panjang gelombang 254 nm

Track 2, ID: S1

Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.00	4.6	0.04	285.2	61.95	0.06	0.2	7631.3	47.37	katekin 1
2	0.06	0.5	0.08	63.8	13.86	0.11	0.1	1314.9	8.16	AutoGenerated6
3	0.29	3.9	0.31	13.9	3.03	0.32	7.3	177.7	1.10	AutoGenerated10
4	0.45	25.6	0.56	85.2	18.50	0.60	21.7	6905.8	42.86	AutoGenerated4
5	0.76	0.1	0.77	12.2	2.66	0.78	1.1	81.4	0.51	AutoGenerated20

Track 3, ID: S2

Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.00	2.6	0.04	223.9	63.92	0.06	4.9	6458.4	52.85	katekin 1
2	0.06	0.8	0.08	52.8	15.06	0.11	0.0	1090.3	8.92	AutoGenerated6
3	0.26	2.2	0.30	11.4	3.25	0.31	7.2	249.3	2.04	AutoGenerated14
4	0.45	20.9	0.54	62.3	17.77	0.57	4.2	4421.2	36.19	AutoGenerated4

Lampiran 7

Profil KLT-Densitometri ekstrak biji buah pinang pada panjang gelombang 366 nm

Track 2, ID: S1

Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.01	28.7	0.04	91.4	30.97	0.06	0.4	2105.7	19.71	AutoGenerated2
2	0.06	0.4	0.08	37.2	12.60	0.11	0.5	842.9	7.89	AutoGenerated6
3	0.27	6.1	0.31	15.8	5.36	0.32	13.9	408.5	3.82	AutoGenerated12
4	0.38	27.2	0.47	51.3	17.37	0.47	50.5	2885.7	27.02	AutoGenerated5
5	0.51	65.7	0.55	86.9	29.46	0.59	5.3	4336.3	40.60	AutoGenerated3
6	0.76	0.1	0.77	12.5	4.24	0.79	0.7	101.9	0.95	AutoGenerated16

Track 3, ID: S2

Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.01	1.8	0.04	52.4	26.87	0.06	0.5	1232.1	13.84	AutoGenerated2
2	0.06	1.1	0.08	36.7	18.85	0.11	1.0	827.0	9.29	AutoGenerated6
3	0.32	13.9	0.37	27.2	13.97	0.37	26.9	965.5	10.85	AutoGenerated10
4	0.46	44.2	0.54	78.5	40.31	0.58	2.8	5877.9	66.02	AutoGenerated3

Lampiran 8

Spektrum hasil penentuan panajang gelombang maksimum baku katekin menggunakan spektrofotometer UV-Vis
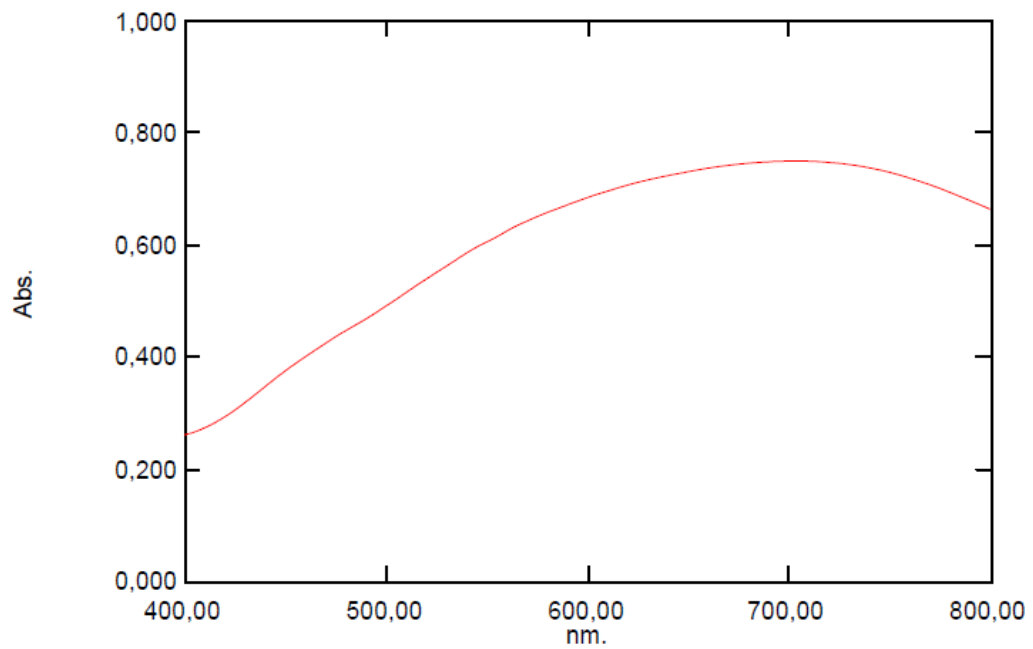
No.	P/V	Wavelength	Abs.	Description
1	⬆	704,50	0,750	

Lampiran 9

Spektrum hasil penentuan panjang gelombang maksimum baku katekin menggunakan *TLC Scanner*
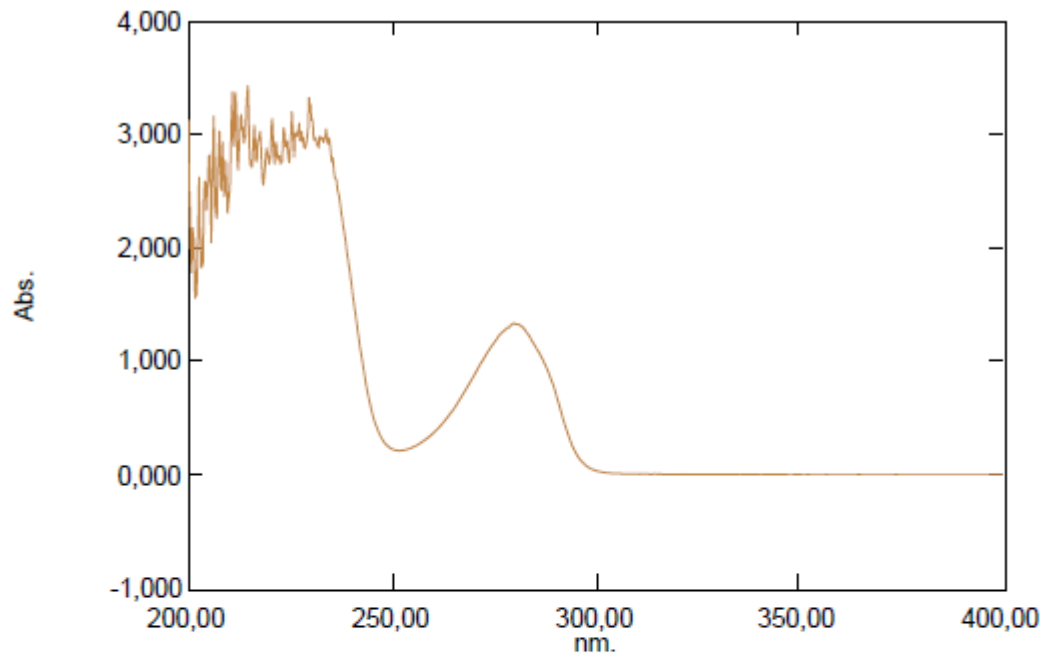
No.	P/V	Wavelength	Abs.	Description
1	↑	364,60	-0,001	
2	↑	343,60	-0,001	
3	↑	280,00	1,333	
4	↑	229,60	3,329	
5	↑	217,60	3,029	
6	↑	206,20	3,164	
7	↓	340,60	-0,002	
8	↓	251,80	0,210	
9	↓	218,40	2,552	
10	↓	207,00	2,255	
11	↓	201,60	1,554	

Lampiran 10

Data Statistik Persen Rendemen

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
persen rendemen	25	21.79168	11.807858	3.460	49.904

One-Sample Kolmogorov-Smirnov Test

		persen rendemen
N		25
Normal Parameters[a,b]	Mean	21.79168
	Std. Deviation	11.807858
Most Extreme Differences	Absolute	.117
	Positive	.085
	Negative	-.117
Test Statistic		.117
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

a. Cairan Penyari

Oneway

Descriptives

persen rendemen

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Etil Asetat	5	5.29680	1.751857	.783454	3.460	7.678
Etanol 96%	5	29.52200	8.819285	3.944104	18.818	43.224
Etanol 70%	5	32.64840	9.890005	4.422945	25.588	49.904
Etanol 30%	5	22.62840	6.930376	3.099358	15.188	34.088
Aquadest	5	18.86280	6.010808	2.688115	10.988	26.280

Total	25	21.79168	11.807858	2.361572	3.460	49.904

Test of Homogeneity of Variances

persen rendemen

Levene Statistic	df1	df2	Sig.
1.055	4	20	.404

ANOVA

persen rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2294.929	4	573.732	10.915	.000
Within Groups	1051.284	20	52.564		
Total	3346.212	24			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: persen rendemen

Tukey HSD

(I) cairan penyari	(J) cairan penyari	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Etil Asetat	Etanol 96%	-24.225200*	4.585376	.000	-37.94636	-10.50404
	Etanol 70%	-27.351600*	4.585376	.000	-41.07276	-13.63044
	Etanol 30%	-17.331600*	4.585376	.009	-31.05276	-3.61044
	Aquadest	-13.566000	4.585376	.054	-27.28716	.15516
Etanol 96%	Etil Asetat	24.225200*	4.585376	.000	10.50404	37.94636
	Etanol 70%	-3.126400	4.585376	.958	-16.84756	10.59476
	Etanol 30%	6.893600	4.585376	.572	-6.82756	20.61476
	Aquadest	10.659200	4.585376	.178	-3.06196	24.38036
Etanol 70%	Etil Asetat	27.351600*	4.585376	.000	13.63044	41.07276
	Etanol 96%	3.126400	4.585376	.958	-10.59476	16.84756
	Etanol 30%	10.020000	4.585376	.225	-3.70116	23.74116
	Aquadest	13.785600*	4.585376	.049	.06444	27.50676
Etanol 30%	Etil Asetat	17.331600*	4.585376	.009	3.61044	31.05276
	Etanol 96%	-6.893600	4.585376	.572	-20.61476	6.82756
	Etanol 70%	-10.020000	4.585376	.225	-23.74116	3.70116
	Aquadest	3.765600	4.585376	.921	-9.95556	17.48676
Aquadest	Etil Asetat	13.566000	4.585376	.054	-.15516	27.28716

Etanol 96%	-10.659200	4.585376	.178	-24.38036	3.06196
Etanol 70%	-13.785600[*]	4.585376	.049	-27.50676	-.06444
Etanol 30%	-3.765600	4.585376	.921	-17.48676	9.95556

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

persen rendemen

Tukey HSD[a]

		Subset for alpha = 0.05		
cairan penyari	N	1	2	3
Etil Asetat	5	5.29680		
Aquadest	5	18.86280	18.86280	
Etanol 30%	5		22.62840	22.62840
Etanol 96%	5		29.52200	29.52200
Etanol 70%	5			32.64840
Sig.		.054	.178	.225

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5.000.

b. Lokasi Pengambilan

Oneway

Descriptives

persen rendemen

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Bulukumba	5	21.64720	11.276152	5.042848	3.460	31.644
Enrekang	5	19.68800	8.528009	3.813841	7.678	27.606
Sidrap	5	14.86480	8.207703	3.670596	3.742	25.588
Masamba	5	31.78160	17.250310	7.714573	5.412	49.904
Bone	5	20.97680	8.978964	4.015515	6.192	28.500
Total	25	21.79168	11.807858	2.361572	3.460	49.904

Test of Homogeneity of Variances

persen rendemen

Levene Statistic	df1	df2	Sig.
.899	4	20	.483

ANOVA

persen rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	764.453	4	191.113	1.480	.246
Within Groups	2581.760	20	129.088		
Total	3346.212	24			

Lampiran 11

Data Statistik Kandungan Polifenol Total

Npar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Kandungan Polifenol	25	547.34508	154.702628	210.663	756.850

One-Sample Kolmogorov-Smirnov Test

		Kandungan Polifenol
N		25
Normal Parameters[a,b]	Mean	547.34508
	Std. Deviation	154.702628
Most Extreme Differences	Absolute	.181
	Positive	.105
	Negative	-.181
Test Statistic		.181
Asymp. Sig. (2-tailed)		.034[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

a. **Cairan Penyari**

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Kandungan Polifenol	25	547.34508	154.702628	210.663	756.850
cairan penyari	25	3.00	1.443	1	5

Kruskal-Wallis Test

Ranks

	cairan penyari	N	Mean Rank
Kandungan Polifenol	Etil Asetat	5	7.20
	Etanol 96%	5	18.50
	Etanol 70%	5	13.40

Etanol 30%	5	15.50
Aquadest	5	10.40
Total	25	

Test Statistics[a,b]

	Kandungan Polifenol
Chi-Square	7.116
df	4
Asymp. Sig.	.130

a. Kruskal Wallis Test

b. Grouping Variable: cairan penyari

b. Lokasi Pengambilan

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Kandungan Polifenol	25	547.34508	154.702628	210.663	756.850
lokasi pengambilan	25	3.00	1.443	1	5

Kruskal-Wallis Test

Ranks

	lokasi pengambilan	N	Mean Rank
Kandungan Polifenol	Bulukumba	5	16.20
	Enrekang	5	11.30
	Sidrap	5	14.60
	Masamba	5	16.10
	Bone	5	6.80
	Total	25	

Test Statistics[a,b]

	Kandungan Polifenol
Chi-Square	5.886
df	4
Asymp. Sig.	.208

a. Kruskal Wallis Test

b. Grouping Variable: lokasi
pengambilan

Lampiran 12
Data Statistik Kandungan Katekin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Kandungan katekin	25	26.02404	11.978812	6.251	42.267

One-Sample Kolmogorov-Smirnov Test

		Kandungan katekin
N		25
Normal Parameters[a,b]	Mean	26.02404
	Std. Deviation	11.978812
Most Extreme Differences	Absolute	.184
	Positive	.131
	Negative	-.184
Test Statistic		.184
Asymp. Sig. (2-tailed)		.028[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

a. **Cairan Penyari**

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Kandungan katekin	25	26.02404	11.978812	6.251	42.267
cairan penyari	25	3.00	1.443	1	5

Kruskal-Wallis Test

Ranks

	cairan penyari	N	Mean Rank
Kandungan katekin	Etil Asetat	5	11.60
	Etanol 96%	5	8.80
	Etanol 70%	5	13.20
	Etanol 30%	5	16.20
	Aquadest	5	15.20
	Total	25	

Test Statistics[a,b]

	Kandungan katekin
Chi-Square	3.205
df	4
Asymp. Sig.	.524

a. Kruskal Wallis Test

b. Grouping Variable: cairan penyari

b. Lokasi Pengambilan

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Kandungan katekin	25	26.02404	11.978812	6.251	42.267
lokasi pengambilan	25	3.00	1.443	1	5

Kruskal-Wallis Test

Ranks

	lokasi pengambilan	N	Mean Rank
Kandungan katekin	Bulukumba	5	20.80
	Enrekang	5	8.80
	Sidrap	5	15.40
	Masamba	5	17.00
	Bone	5	3.00
	Total	25	

Lampiran 13

Perhitungan Kandungan Polifenol Total Ekstrak Biji Buah Pinang dari Beberapa Daerah Menggunakan Spektrofotometer Uv-Vis

y = absorban
x = konsentrasi senyawa terlarut (µg/mL)
v = total larutan pengenceran (mL)
fp = faktor pengenceran
g = jumlah ekstrak yang ditimbang (mg)
Persamaan regresi: y = 0,00801x - 0,02199

    a. Daerah Bulukumba
      - Etil Asetat
      y = 0,00801x - 0,02199
      0,328 = 0,00801x - 0,02199
      0,328 + 0,02199= 0,00801x

$$x = \frac{0,34999}{0,00801}$$

      x = 43,694 µg/mL

$$\text{Kandungan polifenol total} = \frac{x \times v \times fp}{g}$$

$$\text{Faktor pengenceran} = \frac{\text{Total larutan pengenceran}}{\text{Jumlah sampel yang diencerkan}}$$

$$\text{Faktor pengenceran} = \frac{5 \text{ mL}}{0,4 \text{ mL}} = 12,5$$

$$\text{Kandungan polifenol total} = \frac{43,694 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 546,175 \text{ µg/mg}$$

      - Etanol 96%
      y = 0,00801x - 0,02199
      0,463 = 0,00801x - 0,02199
      0,463 + 0,02199= 0,00801x

$$x = \frac{0,48499}{0,00801}$$

      x = 60,548 µg/mL

$$\text{Kandungan polifenol total} = \frac{60,548 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 756,850 \text{ µg/mg}$$

      - Etanol 70%
      y = 0,00801x - 0,02199

0,384 = 0,00801x - 0,02199

0,384 + 0,02199= 0,00801x

$x = \dfrac{0,40599}{0,00801}$

x = 50,685 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{50,685 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 633,562 \text{ µg/mg}$$

- Etanol 30%

y = 0,00801x - 0,02199

0,322 = 0,00801x - 0,02199

0,322 + 0,02199= 0,00801x

$x = \dfrac{0,34399}{0,00801}$

x = 42,945 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{42,945 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 536,812 \text{ µg/mg}$$

- Aquadest

y = 0,00801x - 0,02199

0,357 = 0,00801x - 0,02199

0,357 + 0,02199= 0,00801x

$x = \dfrac{0,37899}{0,00801}$

x = 47,315 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{47,315 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 591,438 \text{ µg/mg}$$

b. Daerah Enrekang

- Etil Asetat

y = 0,00801x - 0,02199

0,150 = 0,00801x - 0,02199

0,150 + 0,02199= 0,00801x

$x = \dfrac{0,17199}{0,00801}$

x = 21,472 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{21,472 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 268,400 \text{ µg/mg}$$

- Etanol 96%

y = 0,00801x - 0,02199

0,311 = 0,00801x - 0,02199

0,311 + 0,02199= 0,00801x

$$x = \frac{0,33299}{0,00801}$$

x = 41.572 µg/mL

$$\text{Kandungan polifenol total} = \frac{41,572 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 519,650 \text{ µg/mg}$$

- Etanol 70%

y = 0,00801x - 0,02199

0,296 = 0,00801x - 0,02199

0,296 + 0,02199= 0,00801x

$$x = \frac{0,31799}{0,00801}$$

x = 39,699 µg/mL

$$\text{Kandungan polifenol total} = \frac{39,699 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 496,238 \text{ µg/mg}$$

- Etanol 30%

y = 0,00801x - 0,02199

0,450 = 0,00801x - 0,02199

0,450 + 0,02199= 0,00801x

$$x = \frac{0,47199}{0,00801}$$

x = 58,925 µg/mL

$$\text{Kandungan polifenol total} = \frac{21,722 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 736,562 \text{ µg/mg}$$

- Aquadest

y = 0,00801x - 0,02199

0,381 = 0,00801x - 0,02199

0,381 + 0,02199= 0,00801x

$$x = \frac{0,40299}{0,00801}$$

x = 50,311 µg/mL

$$\text{Kandungan polifenol total} = \frac{50,311 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

$$= 628,888 \text{ µg/mg}$$

c. Daerah Sidrap

- Etil Asetat

y = 0,00801x - 0,02199

0,113 = 0,00801x - 0,02199

0,113 + 0,02199= 0,00801x

$x = \dfrac{0,13499}{0,00801}$

x = 16,853 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{16,853 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

= 210,663 µg/mg

- Etanol 96%

y = 0,00801x - 0,02199

0,420 = 0,00801x - 0,02199

0,420 + 0,02199= 0,00801x

$x = \dfrac{0,44199}{0,00801}$

x = 55,180 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{55,180 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

= 689,750 µg/mg

- Etanol 70%

y = 0,00801x - 0,02199

0,412 = 0,00801x - 0,02199

0,412 + 0,02199= 0,00801x

$x = \dfrac{0,43399}{0,00801}$

x = 54,181 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{54,181 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

= 677,262 µg/mg

- Etanol 30%

y = 0,00801x - 0,02199

0,388 = 0,00801x - 0,02199

0,388 + 0,02199= 0,00801x

$x = \dfrac{0,40999}{0,00801}$

x = 51,185 µg/mL

$$\text{Kandungan polifenol total} = \dfrac{51,185 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$

= 639,812 µg/mg

- Aquadest

y = 0,00801x - 0,02199

0,326 = 0,00801x - 0,02199

0,326 + 0,02199= 0,00801x

$x = \dfrac{0,34799}{0,00801}$

x = 43,444 µg/mL

$$\text{Kandungan polifenol total} = \frac{43,444 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$
$$= 543,050 \text{ µg/mg}$$

d. Daerah Masamba
- Etil Asetat

y = 0,00801x - 0,02199
0,318 = 0,00801x - 0,02199
0,318 + 0,02199= 0,00801x
$$x = \frac{0,33999}{0,00801}$$
x = 42,446 µg/mL

$$\text{Kandungan polifenol total} = \frac{42,446 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$
$$= 530,575 \text{ µg/mg}$$

- Etanol 96%

y = 0,00801x - 0,02199
0,450 = 0,00801x - 0,02199
0,450 + 0,02199= 0,00801x
$$x = \frac{0,47199}{0,00801}$$
x = 58,925 µg/mL

$$\text{Kandungan polifenol total} = \frac{58,925 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$
$$= 736,562 \text{ µg/mg}$$

- Etanol 70%

y = 0,00801x - 0,02199
0,397 = 0,00801x - 0,02199
0,397 + 0,02199= 0,00801x
$$x = \frac{0,41899}{0,00801}$$
x = 52,308 µg/mL

$$\text{Kandungan polifenol total} = \frac{52,308 \text{ µg/mL} \times 5 \text{ mL} \times 12,5}{5 \text{ mg}}$$
$$= 653,850 \text{ µg/mg}$$

- Etanol 30%

y = 0,00801x - 0,02199
0,413 = 0,00801x - 0,02199
0,413 + 0,02199= 0,00801x
$$x = \frac{0,43499}{0,00801}$$
x = 54,306 µg/mL

$$\text{Kandungan polifenol total} = \frac{54{,}306\ \mu g/mL \times 5\ mL \times 12{,}5}{5\ mg}$$

$$= 678{,}825\ \mu g/mg$$

- Aquadest

y = 0,00801x - 0,02199
0,309 = 0,00801x - 0,02199
0,309 + 0,02199= 0,00801x

$$x = \frac{0{,}33099}{0{,}00801}$$

x = 41,322 µg/mL

$$\text{Kandungan polifenol total} = \frac{41{,}322\ \mu g/mL \times 5\ mL \times 12{,}5}{5\ mg}$$

$$= 516{,}525\ \mu g/mg$$

e. Daerah Bone

- Etil Asetat

y = 0,00801x - 0,02199
0,323 = 0,00801x - 0,02199
0,323 + 0,02199= 0,00801x

$$x = \frac{0{,}34499}{0{,}00801}$$

x = 43,070 µg/mL

$$\text{Kandungan polifenol total} = \frac{43{,}070\ \mu g/mL \times 5\ mL \times 12{,}5}{5\ mg}$$

$$= 525{,}454\ \mu g/mg$$

- Etanol 96%

y = 0,00801x - 0,02199
0,345 = 0,00801x - 0,02199
0,345 + 0,02199= 0,00801x

$$x = \frac{0{,}36699}{0{,}00801}$$

x = 45,816 µg/mL

$$\text{Kandungan polifenol total} = \frac{45{,}816\ \mu g/mL \times 5\ mL \times 12{,}5}{5\ mg}$$

$$= 572{,}700\ \mu g/mg$$

- Etanol 70%

y = 0,00801x - 0,02199
0,279 = 0,00801x - 0,02199
0,279 + 0,02199= 0,00801x

$$x = \frac{0{,}30099}{0{,}00801}$$

x = 37,577 µg/mL

$$\text{Kandungan polifenol total} = \frac{37{,}577\ \mu g/mL \times 5\ mL \times 12{,}5}{5\ mg}$$

$$= 469{,}712 \ \mu g/mg$$

- Etanol 30%

y = 0,00801x - 0,02199

0,170 = 0,00801x - 0,02199

0,170 + 0,02199= 0,00801x

$$x = \frac{0{,}19199}{0{,}00801}$$

x = 23,969 µg/mL

$$\text{Kandungan polifenol total} = \frac{23{,}969 \ \mu g/mL \times 5 \ mL \times 12{,}5}{5 \ mg}$$

$$= 299{,}612 \ \mu g/mg$$

- Aquadest

y = 0,00801x - 0,02199

0,122 = 0,00801x - 0,02199

0,122 + 0,02199= 0,00801x

$$x = \frac{0{,}14399}{0{,}00801}$$

x = 17,976 µg/mL

$$\text{Kandungan polifenol total} = \frac{17{,}976 \ \mu g/mL \times 5 \ mL \times 12{,}5}{5 \ mg}$$

$$= 224{,}700 \ \mu g/mg$$

Lampiran 14

Perhitungan Kandungan Katekin Ekstrak Biji Buah Pinang dari Beberapa Daerah Menggunakan Densitometer

y = absorbansi
x = konsentrasi senyawa terlarut (µg/mL)
v = volume larutan sampel (mL)
fp = faktor pengenceran
g = jumlah ekstrak yang ditimbang (mg)

$$\text{Faktor pengenceran} = \frac{1 \text{ mL}}{1 \text{ mL}} = 1$$

Persamaan regresi: y = 28,348x – 764,04

a. Daerah Bulukumba
- Etil Asetat

y = 28,348x – 764,04
8906,3 = 28,348x – 764,04
8906,3 + 764,04 = 28,348x

$$x = \frac{9670,34}{28,348}$$

x = 341,130 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{341,130 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

= 34,113 µg/mg

- Etanol 96%

y = 28,348x – 764,04
9070,6 = 28,348x – 764,04
9070,6 + 764,04 = 28,348x

$$x = \frac{9834,64}{28,348}$$

x = 346,925 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{346,925 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

= 34,692 µg/mg

- Etanol 70%

y = 28,348x – 764,04

10540,4 = 28,348x – 764,04

10540,4 + 764,04 = 28,348x

$$x = \frac{11304,44}{28,348}$$

x = 398,774 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{398,774 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

= 39,877 µg/mg

- Etanol 30%

y = 28,348x – 764,04

11217,8 = 28,348x – 764,04

11217,8 + 764,04 = 28,348x

$$x = \frac{11981,84}{28,348}$$

x = 422,670 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{422,670 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

= 42,267 µg/mg

- Aquadest

y = 28,348x – 764,04

9728,6 = 28,348x – 764,04

9728,6 + 764,04 = 28,348x

$$x = \frac{10492,64}{28,348}$$

x = 370,137 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{370,137 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

= 37,014 µg/mg

b. Daerah Enrekang

- Etil Asetat

y = 28,348x − 764,04

5233,1 = 28,348x − 764,04

5233,1 + 764,04 = 28,348x

$$x = \frac{5997,14}{28,348}$$

x = 211,554 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{211,554 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

= 21,155 µg/mg

- Etanol 96%

y = 28,348x − 764,04

3550,6 = 28,348x − 764,04

3550,6 + 764,04 = 28,348x

$$x = \frac{4314,64}{28,348}$$

x = 152,203 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{152,203 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

= 15,220 µg/mg

- Etanol 70%

y = 28,348x − 764,04

5435,3 = 28,348x − 764,04

5435,3 + 764,04 = 28,348x

$$x = \frac{6199,34}{28,348}$$

x = 218,687 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{218{,}687 \ \mu g/mL \times 1 \ mL \times 1}{10 \ mg}$$

$$= 21{,}869 \ \mu g/mg$$

- Etanol 30%

y = 28,348x − 764,04
5195,3 = 28,348x − 764,04
5195,3 + 764,04 = 28,348x

$$x = \frac{5959{,}34}{28{,}348}$$

x = 210,221 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{210{,}221 \ \mu g/mL \times 1 \ mL \times 1}{10 \ mg}$$

$$= 21{,}022 \ \mu g/mg$$

- Aquadest

y = 28,348x − 764,04
6254,0 = 28,348x − 764,04
6254,0 + 764,04 = 28,348x

$$x = \frac{7018{,}04}{28{,}348}$$

x = 247,567 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{247{,}567 \ \mu g/mL \times 1 \ mL \times 1}{10 \ mg}$$

$$= 24{,}757 \ \mu g/mg$$

c. Daerah Sidrap
   - Etil Asetat

y = 28,348x − 764,04
8709,5 = 28,348x − 764,04
8709,5 + 764,04 = 28,348x

$$x = \frac{9473{,}54}{28{,}348}$$

x = 334,187 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{334{,}187 \ \mu g/mL \times 1 \ mL \times 1}{10 \ mg}$$

$$= 33{,}419 \ \mu g/mg$$

- Etanol 96%

y = 28,348x – 764,04

4126,6 = 28,348x – 764,04

4126,6 + 764,04 = 28,348x

$$x = \frac{4890{,}64}{28{,}348}$$

x = 172,521 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{172{,}521 \ \mu g/mL \times 1 \ mL \times 1}{10 \ mg}$$

$$= 17{,}252 \ \mu g/mg$$

- Etanol 70%

y = 28,348x – 764,04

7641,1 = 28,348x – 764,04

7641,1 + 764,04 = 28,348x

$$x = \frac{8405{,}14}{28{,}348}$$

x = 296,499 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{296{,}499 \ \mu g/mL \times 1 \ mL \times 1}{10 \ mg}$$

$$= 29{,}650 \ \mu g/mg$$

- Etanol 30%

y = 28,348x – 764,04

10024,2 = 28,348x – 764,04

10024,2 + 764,04 = 28,348x

$$x = \frac{10788{,}24}{28{,}348}$$

x = 380,564 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{380,564\ \mu g/mL \times 1\ mL \times 1}{10\ mg}$$

$$= 38,056\ \mu g/mg$$

- Aquadest

y = 28,348x – 764,04
10144,4 = 28,348x – 764,04
10144,4 + 764,04 = 28,348x

$$x = \frac{7018,04}{28,348}$$

x = 357,852 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{357,852\ \mu g/mL \times 1\ mL \times 1}{10\ mg}$$

$$= 35,785\ \mu g/mg$$

d. Daerah Masamba

- Etil Asetat

y = 28,348x – 764,04
8436,8 = 28,348x – 764,04
8436,8 + 764,04 = 28,348x

$$x = \frac{9200,84}{28,348}$$

x = 324,568 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{324,568\ \mu g/mL \times 1\ mL \times 1}{10\ mg}$$

$$= 32,457\ \mu g/mg$$

- Etanol 96%

y = 28,348x – 764,04
6633,0 = 28,348x – 764,04
6633,0 + 764,04 = 28,348x

$$x = \frac{7397,04}{28,348}$$

x = 260,937 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{260{,}937 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

$$= 26{,}094 \text{ µg/mg}$$

- Etanol 70%

$y = 28{,}348x - 764{,}04$

$8642{,}8 = 28{,}348x - 764{,}04$

$8642{,}8 + 764{,}04 = 28{,}348x$

$$x = \frac{9406{,}84}{28{,}348}$$

$x = 331{,}834 \text{ µg/mL}$

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{331{,}834 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

$$= 33{,}183 \text{ µg/mg}$$

- Etanol 30%

$y = 28{,}348x - 764{,}04$

$10271{,}2 = 28{,}348x - 764{,}04$

$10271{,}2 + 764{,}04 = 28{,}348x$

$$x = \frac{11035{,}24}{28{,}348}$$

$x = 389{,}278 \text{ µg/mL}$

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{389{,}278 \text{ µg/mL} \times 1 \text{ mL} \times 1}{10 \text{ mg}}$$

$$= 38{,}928 \text{ µg/mg}$$

- Aquadest

$y = 28{,}348x - 764{,}04$

$9855{,}1 = 28{,}348x - 764{,}04$

$9855{,}1 + 764{,}04 = 28{,}348x$

$$x = \frac{10619{,}14}{28{,}348}$$

$x = 374{,}599 \text{ µg/mL}$

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{374{,}599 \ \mu g/mL \times 1 \ mL \times 1}{10 \ mg}$$

$$= 37{,}560 \ \mu g/mg$$

e. Daerah Bone

- Etil Asetat

y = 28,348x − 764,04
8918,1 = 28,348x − 764,04
8918,1 + 764,04 = 28,348x

$$x = \frac{9682{,}14}{28{,}348}$$

x = 341,546 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{341{,}546 \ \mu g/mL \times 1 \ mL \times 1}{50 \ mg}$$

$$= 6{,}831 \ \mu g/mg$$

- Etanol 96%

y = 28,348x − 764,04
8096,1 = 28,348x − 764,04
8096,1 + 764,04 = 28,348x

$$x = \frac{8860{,}14}{28{,}348}$$

x = 312,549 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{312{,}549 \ \mu g/mL \times 1 \ mL \times 1}{50 \ mg}$$

$$= 6{,}251 \ \mu g/mg$$

- Etanol 70%

y = 28,348x − 764,04
10079,7 = 28,348x − 764,04
10079,7 + 764,04 = 28,348x

$$x = \frac{10{,}843{,}74}{28{,}348}$$

x = 382,522 µg/mL

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{382,522 \text{ µg/mL} \times 1 \text{ mL} \times 1}{50 \text{ mg}}$$

$$= 7,650 \text{ µg/mg}$$

- Etanol 30%

$y = 28,348x - 764,04$

$9529,7 = 28,348x - 764,04$

$9529,7 + 764,04 = 28,348x$

$$x = \frac{10293,74}{28,348}$$

$x = 363,120 \text{ µg/mL}$

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{363,120 \text{ µg/mL} \times 1 \text{ mL} \times 1}{50 \text{ mg}}$$

$$= 7,262 \text{ µg/mg}$$

- Aquadest

$y = 28,348x - 764,04$

$10911,5 = 28,348x - 764,04$

$10911,5 + 764,04 = 28,348x$

$$x = \frac{11675,54}{28,348}$$

$x = 411,865 \text{ µg/mL}$

$$\text{Kandungan katekin} = \frac{x \times v \times fp}{g}$$

$$\text{Kandungan katekin} = \frac{411,865 \text{ µg/mL} \times 1 \text{ mL} \times 1}{50 \text{ mg}}$$

$$= 8,237 \text{ µg/mg}$$