

LAMPIRAN

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Lampiran 1. Pembuatan Serbuk Simplisia Daun Pepaya Jepang

No	Gambar	Keterangan
1.		Pencucian
2.		Pengeringan
3.		penghalusan
4.		pengayakan
5.		Serbuk simplisia


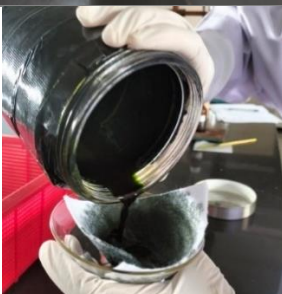



Lampiran 2. Perhitungan % Bobot Kering Terhadap Bobot Basah

Berat Daun Papaya Jepang Basah (a) : 100 gram

Berat Daun Papaya Jepang Kering (b) : 19,48 gram

$$\begin{aligned}\text{Presentase Bobot Kering} &= \frac{b}{a} \times 100\% \\ &= \frac{19,48 \text{ gram}}{100 \text{ gram}} \times 100\% \\ &= 19,48\%\end{aligned}$$

Lampiran 3. Proses Ekstraksi

No	Gambar	Keterangan
1.		Maserasi
2.		Penyaringan maserat
3.		Penguapan maserat
4.		Ekstrak Kental Maserasi
5.		Perkolasi

6.



Penguapan perkolat

7.



Ekstrak kental perkolasi

Lampiran 4. Perhitungan rendemen ekstrak

1. Perhitungan berat ekstrak maserasi daun papaya jepang

Berat serbuk daun papaya jepang : 50 gram

Berat cawan porselin kosong : 75,76 gram

Berat cawan porselin + ekstrak : 80,33 gram

Berat ekstrak : 80,33 gram – 75,76 gram
: 4,57 gram

Perhitungan rendemen ekstrak maserasi daun papaya jepang

$$\begin{aligned} \text{Rendemen} &= \frac{\text{berat ekstrak kental}}{\text{berat sampel}} \times 100\% \\ &= \frac{4,57 \text{ gram}}{50 \text{ gram}} \times 100\% \\ &= 9,14 \% \end{aligned}$$

2. Perhitungan berat ekstrak perkolasi daun papaya jepang

Berat serbuk daun papaya jepang : 50 gram

Berat cawan porselin kosong : 74,51 gram

Berat cawan porselin + ekstrak : 88,97 gram

Berat ekstrak : 88,97 gram – 74,51 gram
: 14,46 gram

Perhitungan rendemen ekstrak maserasi daun papaya jepang

$$\begin{aligned} \text{Rendemen} &= \frac{\text{berat ekstrak kental}}{\text{berat sampel}} \times 100\% \\ &= \frac{14,46 \text{ gram}}{50 \text{ gram}} \times 100\% \\ &= 28,92 \% \end{aligned}$$

Lampiran 5. Perhitungan Rf Ekstrak Maserasi dan Perkolasi

1. Ekstrak Maserasi

Jarak yang ditempuh sampel : 7,1

Jarak yang ditempuh pelarut : 8

$$\begin{aligned} Rf &= \frac{\text{jarak yang ditempuh sampel}}{\text{jarak yang ditempuh pelarut}} \\ &= \frac{7,1}{8} = 0,887 \end{aligned}$$

$$\text{HRf} = \frac{7,1}{8} \times 100 = 88,75$$

2. Ekstrak Perkolasi

Jarak yang ditempuh sampel : 7,1

Jarak yang ditempuh pelarut : 8

$$\begin{aligned} Rf &= \frac{\text{jarak yang ditempuh sampel}}{\text{jarak yang ditempuh pelarut}} \\ &= \frac{7,1}{8} = 0,887 \end{aligned}$$

$$\text{HRf} = \frac{7,1}{8} \times 100 = 88,75$$

Lampiran 6. Pembuatan Larutan Uji

1. Perhitungan pembuatan larutan DPPH 50 ppm

$$\text{DPPH } 50 \text{ ppm} = 50 \mu\text{g/ml} = 0,05 \text{ mg/ml}$$

$$\text{DPPH yang dibutuhkan} = 0,05 \text{ mg/ml} \times 100 \text{ ml} = 5 \text{ mg}$$

$$\text{Metanol ad} = 100 \text{ ml}$$

2. Perhitungan larutan induk ekstrak maserasi dan perkolasi 100 ppm

$$\text{Ekstrak } 100 \text{ ppm} = 100 \mu\text{g/ml} = 0,1 \text{ mg/ml}$$

$$\text{Ekstrak yang dibutuhkan} = 0,1 \text{ mg/ml} \times 100 \text{ ml} = 10 \text{ mg}$$

$$\text{Metanol ad} = 100 \text{ ml}$$

3. Pembuatan larutan seri ekstrak maserasi dan perkolasi 20 ppm, 40 ppm, 60 ppm, dan 80 ppm

$$20 \text{ ppm} \quad V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 100 = 10 \times 20$$

$$V_1 = 200/100 = 2 \text{ ml}$$

$$\text{Metanol ad } 10 \text{ ml}$$

$$40 \text{ ppm} \quad V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 100 = 10 \times 40$$

$$V_1 = 400/100 = 4 \text{ ml}$$

$$\text{Metanol ad } 10 \text{ ml}$$

$$60 \text{ ppm} \quad V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 100 = 10 \times 60$$

$$V_1 = 600/100 = 6 \text{ ml}$$

$$\text{Metanol ad } 10 \text{ ml}$$

$$80 \text{ ppm} \quad V_1 \times N_1 = V_2 \times N_2$$

$$V1 \times 100 = 10 \times 80$$

$$V1 = 800/100 = 8 \text{ ml}$$

Metanol ad 10 ml

4. Pembuatan larutan pembanding vitamin C 100 ppm

$$\text{Vitamin C } 100 \text{ ppm} = 100 \mu\text{g/ml} = 0,1 \text{ mg/ml}$$

$$\text{Vitamin C yang dibutuhkan} = 0,1 \text{ mg/ml} \times 100 \text{ ml} = 10 \text{ mg}$$

Aquadest ad = 100 ml

5. Pembuatan larutan seri vitamin C (20 ppm, 40 ppm, 60 ppm, dan 80 ppm)

20 ppm $V1 \times N1 = V2 \times N2$

$$V1 \times 100 = 10 \times 20$$

$$V1 = 200/100 = 2 \text{ ml}$$

Metanol ad 10 ml

40 ppm $V1 \times N1 = V2 \times N2$

$$V1 \times 100 = 10 \times 40$$

$$V1 = 400/100 = 4 \text{ ml}$$

Metanol ad 10 ml

60 ppm $V1 \times N1 = V2 \times N2$

$$V1 \times 100 = 10 \times 60$$

$$V1 = 600/100 = 6 \text{ ml}$$

Metanol ad 10 ml

80 ppm $V1 \times N1 = V2 \times N2$

$$V1 \times 100 = 10 \times 80$$

$$V1 = 800/100 = 8 \text{ ml}$$

Metanol ad 10 ml

Lampiran 7. Perhitungan % Inhibisi

1. Perhitungan % inhibisi ekstrak + DPPH

Maserasi

$$20 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,490}{0,556} \times 100\%$$

$$= 11,870\%$$

$$40 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,487}{0,556} \times 100\%$$

$$= 12,41\%$$

$$60 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,485}{0,556} \times 100\%$$

$$= 12,769\%$$

$$80 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,444}{0,556} \times 100\%$$

$$= 20,143\%$$

Konsentrasi (ppm)	Log Konsentrasi	% Inhibisi	Probit
20	1,3	11,75	3,77
40	1,6	12,41	3,82
60	1,7	12,76	3,82
80	1,9	20,08	4,16

Perkolasi

$$20 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,440}{0,556} \times 100\%$$

$$= 20,683\%$$

$$40 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,426}{0,556} \times 100\%$$

$$= 23,381\%$$

$$60 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,332}{0,556} \times 100\%$$

$$= 40,287\%$$

$$80 \text{ ppm} = \frac{(rata-rata \text{ laruran blanko})-(rata-rata \text{ larutan sampel})}{rata-rata \text{ larutan blanko}} \times 100\%$$

$$= \frac{0,556-0,330}{0,556} \times 100\%$$

$$= 40,647\%$$

Konsentrasi (ppm)	Log Konsentrasi	% Inhibisi	Probit
20	1,3	20,86	4,16
40	1,6	23,26	4,26
60	1,7	40,22	4,75
80	1,9	40,64	4,75

2. Perhitungan % inhibisi vitamin C + DPPH

$$\begin{aligned}
 20 \text{ ppm} &= \frac{(\text{rata-rata laruran blanko}) - (\text{rata-rata larutan sampel})}{\text{rata-rata laruran blanko}} \times 100\% \\
 &= \frac{0,535 - 0,035}{0,535} \times 100\% \\
 &= 93,45\%
 \end{aligned}$$

$$\begin{aligned}
 40 \text{ ppm} &= \frac{(\text{rata-rata laruran blanko}) - (\text{rata-rata larutan sampel})}{\text{rata-rata laruran blanko}} \times 100\% \\
 &= \frac{0,535 - 0,032}{0,535} \times 100\% \\
 &= 94,01\%
 \end{aligned}$$

$$\begin{aligned}
 60 \text{ ppm} &= \frac{(\text{rata-rata laruran blanko}) - (\text{rata-rata larutan sampel})}{\text{rata-rata laruran blanko}} \times 100\% \\
 &= \frac{0,535 - 0,030}{0,535} \times 100\% \\
 &= 94,39\%
 \end{aligned}$$

$$\begin{aligned}
 80 \text{ ppm} &= \frac{(\text{rata-rata laruran blanko}) - (\text{rata-rata larutan sampel})}{\text{rata-rata laruran blanko}} \times 100\% \\
 &= \frac{0,535 - 0,027}{0,535} \times 100\% \\
 &= 94,95\%
 \end{aligned}$$

Konsentrasi (ppm)	Log Konsentrasi	% Inhibisi	Probit
20	1,3	93,45	6,48
40	1,6	93,95	6,48
60	1,7	94,39	6,55
80	1,9	94,95	6,55

Lampiran 8. Perhitungan Nilai IC₅₀

1. Ekstrak Maserasi + DPPH

$$\begin{aligned} \text{IC}_{50} (y) &= ax + b \\ 5 &= 0,5117x + 3,0502 \\ 0,5117x &= 5 - 3,0502 \\ x &= 1,9498/0,5117 \\ &= \text{antilog } 3,8104 \\ \text{IC}_{50} &= 45,17 \mu\text{g/ml} \end{aligned}$$





2. Ekstrak Perkolasi + DPPH



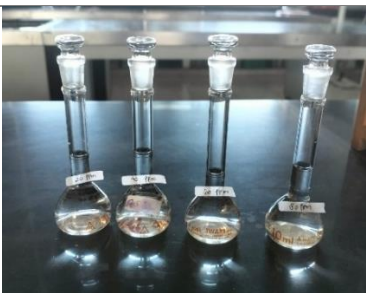

$$\begin{aligned} \text{IC}_{50} (y) &= ax + b \\ 5 &= 1,101x + 2,6676 \\ 1,101x &= 5 - 2,6676 \\ x &= 2,3324/1,101 \\ &= \text{antilog } 2,1184 \\ \text{IC}_{50} &= 8,31 \mu\text{g/ml} \end{aligned}$$




3. Vitamin C + DPPH

$$\begin{aligned} \text{IC}_{50} (y) &= ax + b \\ 5 &= 0,1332x + 6,2958 \\ 0,1332x &= 5 - 6,2958 \\ x &= -1,2958/0,1332 \\ &= \text{antilog } -9,7282 \\ \text{IC}_{50} &= 5,95 \mu\text{g/ml} \end{aligned}$$

Lampiran 9. Uji Aktivitas antioksidan

No	Gambar	Keterangan
1.		Larutan DPPH
2.		Larutan induk ekstrak maserasi daun pepaya jepang
3.		Larutan induk ekstrak Perkolasi daun pepaya jepang
4.		Larutan pembanding Vitamin C

No	Gambar	Keterangan
5.		Larutan seri ekstrak maserasi daun papaya jepang
6.		Larutan seri ekstrak perkolasi daun papaya jepang
7.		Larutan seri vitamin C
8.		Proses inkubasi

No	Gambar	Keterangan
9.	 A close-up photograph showing a person's hands pouring a clear liquid from a small glass vial into a clear plastic cuvette. The person is wearing a light-colored lab coat. In the background, a white analytical instrument, likely a spectrophotometer, is visible on a lab bench.	Memasukkan larutan seri kedalam kuvet
10.	 A photograph showing a person's hand placing a clear plastic cuvette into the sample compartment of a white spectrophotometer. The instrument's lid is open, and the interior is dark. The person is wearing a light-colored lab coat.	Memasukkan kuvet kedalam spektrofotometri UV-Vis
11.	 A photograph of a white spectrophotometer sitting on a lab bench. The instrument has a control panel with a digital display and several buttons. The lid is closed. The brand name 'Thermo' is visible on the front panel.	Mengukur absorbansi

Lampiran 10. Tabel Probit

F tabel

Titik Persentase Distribusi F untuk Probabilitas 0,05 5% atau 0,05

df untuk penyebut (N2)	nilai df (n1)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	161	199	216	225	230	234	237	239	241	242	243	244	245	245	246
2	18,51	19,00	19,15	19,25	19,30	19,33	19,35	19,37	19,38	19,40	19,40	19,41	19,42	19,42	19,43
3	10,13	9,55	9,29	9,12	9,01	8,94	8,89	8,85	8,81	8,79	8,78	8,74	8,73	8,71	8,70
4	7,71	6,94	6,59	6,38	6,25	6,16	6,09	6,04	6,00	5,98	5,94	5,91	5,89	5,87	5,85
5	6,51	5,79	5,41	5,19	5,05	4,95	4,88	4,82	4,77	4,74	4,70	4,68	4,65	4,64	4,62
6	5,99	5,14	4,70	4,53	4,39	4,29	4,21	4,15	4,10	4,06	4,03	4,00	3,98	3,96	3,94
7	5,59	4,74	4,30	4,12	3,97	3,87	3,79	3,73	3,68	3,64	3,60	3,57	3,55	3,53	3,51
8	5,32	4,48	4,07	3,89	3,74	3,64	3,56	3,49	3,44	3,39	3,35	3,31	3,28	3,26	3,23
9	5,12	4,29	3,89	3,71	3,56	3,45	3,37	3,29	3,23	3,18	3,14	3,10	3,07	3,05	3,01
10	4,96	4,15	3,75	3,57	3,42	3,31	3,23	3,15	3,07	3,02	2,98	2,94	2,91	2,89	2,85
11	4,84	4,04	3,64	3,46	3,30	3,19	3,11	3,03	2,95	2,90	2,85	2,82	2,79	2,76	2,72
12	4,75	3,95	3,55	3,37	3,21	3,10	3,02	2,94	2,86	2,80	2,75	2,72	2,69	2,66	2,62
13	4,67	3,87	3,47	3,29	3,13	3,02	2,94	2,86	2,77	2,71	2,67	2,63	2,60	2,57	2,53
14	4,60	3,79	3,39	3,21	3,05	2,94	2,86	2,77	2,70	2,64	2,60	2,57	2,53	2,51	2,48
15	4,54	3,74	3,34	3,16	2,99	2,88	2,79	2,71	2,64	2,58	2,54	2,51	2,48	2,45	2,42
16	4,49	3,69	3,29	3,11	2,94	2,83	2,74	2,66	2,59	2,54	2,49	2,46	2,42	2,40	2,37
17	4,45	3,65	3,25	3,07	2,90	2,79	2,71	2,63	2,56	2,50	2,46	2,42	2,39	2,35	2,31
18	4,41	3,61	3,21	3,03	2,86	2,75	2,66	2,58	2,51	2,45	2,41	2,37	2,34	2,31	2,27
19	4,38	3,58	3,18	3,00	2,83	2,72	2,63	2,55	2,48	2,42	2,38	2,34	2,31	2,28	2,23
20	4,35	3,55	3,15	2,97	2,79	2,68	2,59	2,51	2,44	2,38	2,34	2,31	2,28	2,25	2,20
21	4,32	3,52	3,12	2,94	2,76	2,65	2,56	2,48	2,41	2,35	2,31	2,28	2,25	2,22	2,18
22	4,30	3,49	3,09	2,91	2,73	2,62	2,53	2,45	2,38	2,32	2,28	2,25	2,22	2,19	2,15
23	4,28	3,47	3,07	2,89	2,71	2,60	2,51	2,43	2,36	2,30	2,27	2,23	2,20	2,17	2,13
24	4,26	3,45	3,05	2,87	2,69	2,58	2,49	2,41	2,34	2,28	2,24	2,21	2,18	2,15	2,11
25	4,24	3,43	3,03	2,85	2,67	2,56	2,47	2,39	2,32	2,26	2,22	2,19	2,16	2,13	2,09

Tabel probit

%	Probit									
	0	1	2	3	4	5	6	7	8	9
0		2,67	2,95	3,12	3,25	3,36	3,45	3,52	3,59	3,66
10	3,72	3,77	3,82	3,87	3,92	3,96	4,01	4,05	4,08	4,12
20	4,16	4,19	4,23	4,26	4,29	4,33	4,36	4,39	4,42	4,45
30	4,48	4,50	4,53	4,56	4,59	4,61	4,64	4,67	4,69	4,72
40	4,75	4,77	4,80	4,82	4,85	4,87	4,90	4,92	4,95	4,97
50	5,00	5,03	5,05	5,08	5,10	5,13	5,15	5,18	5,20	5,23
60	5,25	5,28	5,31	5,33	5,36	5,39	5,41	5,44	5,47	5,50
70	5,52	5,55	5,58	5,61	5,64	5,67	5,71	5,74	5,77	5,81
80	5,84	5,88	5,92	5,95	5,99	6,04	6,06	6,13	6,18	6,23
90	6,28	6,34	6,41	6,48	6,55	6,64	6,75	6,88	7,05	7,33
99	0,0	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9
	7,33	7,37	7,41	7,46	7,51	7,58	7,65	7,76	7,88	8,09

CURICULUM VITAE

Nama : Destia Linda Putri
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Jenis Kelamin : Perempuan
TTL : Pemalang, 11 Juli 2002
Alamat : Desa Gendowang dusun Karanganyar RT.03
RW.01, Kec. Moga, Kab. Pemalang
No. Tlp/HP : 087711416622
Riwayat Pendidikan
SD : SDN 01 Gendowang
SMP : SMPN 1 Moga
SMK : SMK Amanah Husada Pemalang
DIII : Politeknik Harapan Bersama Tegal
Judul KTI : Pengaruh Metode Ekstraksi Terhadap Aktivitas
Antioksidan Daun Pepaya Jepang (*Cnidocolus
Aconitifolius*) Dengan Metode Spektrofotometri Uv-
Vis
Nama Ayah : Nasirin
Nama Ibu : Siti Muhliso
Pekerjaan Ayah : Wiraswasta
Pekerjaan Ibu : Ibu Rumah Tangga