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Lampiran 1. Determinasi bekatul mentik wangi



PEMERINTAH PROVINSI JAWA TIMUR
DINAS KESEHATAN
UPT LABORATORIUM HERBAL
MATERIA MEDICA BATU

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Nomor : 074/ 629/ 102.20-A/ 2022
Sifat : Biasa
Perihal : **Determinasi Tanaman Padi Mentik Wangi**

Memenuhi permohonan saudara :

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Fakultas : FARMASI, UNIVERSITAS SETIA BUDI

1. Perihal determinasi tanaman padi mentik wangi

Kingdom : Plantae
Divisi : Spermatophyta
Sub divisi : Angiospermae
Kelas : Monocotyledonae
Bangsa : Poales
Suku : Graminae
Marga : Oryza
Jenis : *Oryza sativa* L. var. mentik wangi
Sinonim : Pare, pantun, pari, padi (Jawa); pade, rom, pedeh, page, eme, ome, banih, padi, pai, pari, psgr (Sumatera); wanat, ; fasa, alai, ara, fala, hala, ala hutu, ala utu, ala utut, hala, alak tuwa, pinge, pinye, samasi, bira (Maluku); ame, eme, pai, pac, bai, ase (Sulawesi); pare, kekai, parei, bani, parai, parei, pari (Kalimantan); padi, pantu, pantun, pade, pare, fare, pari, panc, pare ui, hade aik, ale (Nusa Tenggara).
Kunci determinasi : 1b-2b-3b-4a-5a Graminae-2c-18b-20a-21b-22b:Oryza-22:*O. sativa*.

2. Morfologi : Terna semusim, berakar serabut, batang sangat pendek, struktur serupa batang terbentuk dari rangkaian pelepah daun yang saling menumpang dan sempurna dengan pelepah tegak, daun berbentuk lanset, warna hijau muda hingga hijau tua, berurat daun sejajar, tertutupi oleh rambut yang pendek dan jarang, bagian bunga tersusun majemuk, tipe malai bercabang, satuan bunga disebut floret yang terletak pada satu spikelet yang duduk pada panikula, tipe buah bulir atau kariopsis yang tidak dapat dibedakan mana buah dan bijinya, bentuk hampir bulat hingga lonjong, ukuran 3 mm hingga 15 mm, tertutup oleh palca dan lemma yang dalam bahasa sehari-hari disebut sekam, struktur dominan padi yang biasa dikonsumsi yaitu jenis endospermium.

3. Bagian yang digunakan : Kulit ari biji/ bekatul.

4. Penggunaan : Penelitian Skripsi.

5. Daftar Pustaka

- Van Steenis, CGGJ. 2008. *FLORA: untuk Sekolah di Indonesia*. Pradnya Paramita, Jakarta.

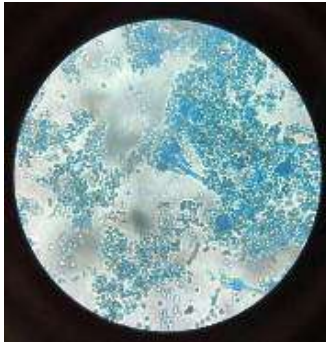
Demikian surat keterangan determinasi ini kami buat untuk dipergunakan sebagaimana mestinya.

Batu, 08 September 2022

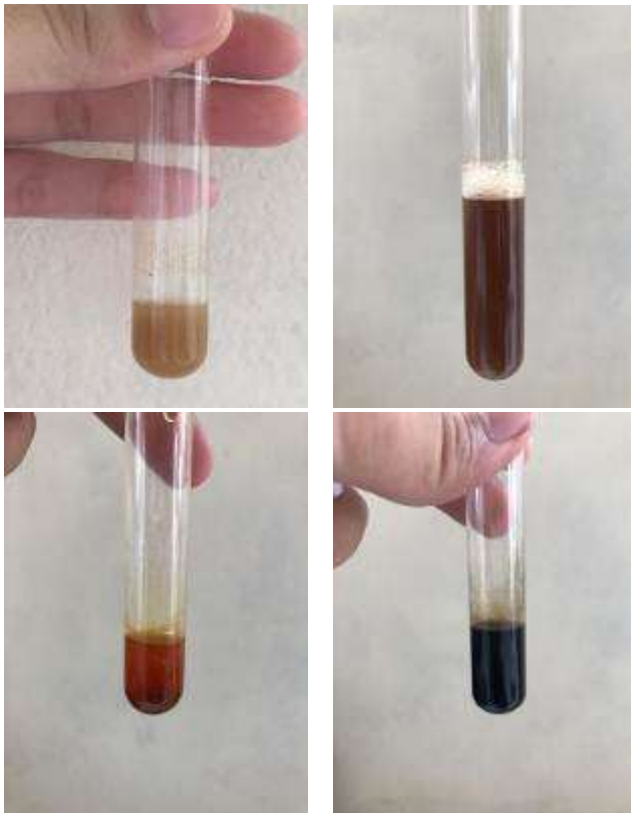


Lampiran 2. Serbuk dan ekstrak bekatul mentik wangi



Lampiran 3. Jamur *Aspergillus Oryzae* dan Fermentasi

Lampiran 4. Uji Senyawa Kimia



Lampiran 5. Perhitungan Rendemen

5.1 Rendemen pensortiran

$$\begin{aligned}\text{Rendemen} &= \text{berat sesudah} / \text{berat sebelum} \times 100\% \\ &= 4,5 / 5 \times 100 \% \\ &= 90\%\end{aligned}$$

5.2 Ekstrak Non fermentasi

Berat ekstrak pekat = 32 gram

Berat sampel = 300 gram

$$\begin{aligned}\text{Rendemen} &= (\text{berat ekstrak pekat})/(\text{berat sampel}) \times 100\% \\ &= 32/300 \times 100\% \\ &= 10,67\%\end{aligned}$$

5.3 Ekstrak Fermentasi 7 hari (F1)

Berat ekstrak pekat = 47 gram

Berat sampel = 300 gram

$$\begin{aligned}\text{Rendemen} &= (\text{berat ekstrak pekat})/(\text{berat sampel}) \times 100\% \\ &= 47/300 \times 100\% \\ &= 15,67\%\end{aligned}$$

5.4 Ekstrak Fermentasi 14 hari (F2)

Berat ekstrak pekat = 33 gram

Berat sampel = 300 gram

$$\begin{aligned}\text{Rendemen} &= (\text{berat ekstrak pekat})/(\text{berat sampel}) \times 100\% \\ &= 33/300 \times 100\% \\ &= 11\%\end{aligned}$$

5.5 Ekstrak Fermentasi 21 hari (F3)

Berat ekstrak pekat = 30 gram

Berat sampel = 300 gram

$$\begin{aligned}\text{Rendemen} &= (\text{berat ekstrak pekat})/(\text{berat sampel}) \times 100\% \\ &= 30/300 \times 100\% \\ &= 10\%\end{aligned}$$

Lampiran 6. Pembuatan Larutan DPPH 0,4 mM**6.1 Perhitungan**

DPPH 0,4 mM dalam 100 ml etanol p.a

Mr DPPH = 394,33 g/mol

$0,4 \text{ mM} = \text{masa} / 394,33 \times 1000/100$

$0,4 \times 394,33 / 10 = \text{masa}$

Masa = 15,77 mg = 15,8 mg

6.2 Penimbangan

Lampiran 7. Pembuatan Larutan Konsentrasi

7.1. Penimbangan



7.2. Perhitungan

$$\text{Ppm} = (\text{massa (mg)})/(\text{volume (L)})$$

Rumus Pengenceran :

$$\text{ppm 1} \times \text{volume 1} = \text{ppm 2} \times \text{volume 2}$$

1. NON FERMENTASI

Pembuatan 870 ppm

$$87 \text{ mg}/0,1\text{L} = 870 \text{ ppm}$$

Pembuatan 348 ppm

$$870 \text{ ppm} \times 4 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 3480/10$$

$$Y = 348 \text{ ppm}$$

Pembuatan 218 ppm

$$870 \text{ ppm} \times 2,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 2180/10$$

$$Y = 218 \text{ ppm}$$

Pembuatan 131 ppm

$$870 \text{ ppm} \times 1,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 1310/10$$

$$Y = 131 \text{ ppm}$$

Pembuatan 104 ppm

43

$$870 \text{ ppm} \times 1,2 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 1040/10$$

$$Y = 104 \text{ ppm}$$

Pembuatan 44 ppm

$$870 \text{ ppm} \times 0,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 440/10$$

$$Y = 44 \text{ ppm}$$

2. F1 atau FERMENTASI 7 HARI

Pembuatan 400 ppm

$$40 \text{ mg} / 0,1 \text{ L} = 400 \text{ ppm}$$

Pembuatan 200 ppm

$$400 \text{ ppm} \times 5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 2000/10$$

$$Y = 200 \text{ ppm}$$

Pembuatan 160 ppm

$$400 \text{ ppm} \times 4 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 1600/10$$

$$Y = 160 \text{ ppm}$$

Pembuatan 100 ppm

$$400 \text{ ppm} \times 2,5 \text{ ml} = Y \times 10$$

$$Y = 1000/10$$

$$Y = 100 \text{ ppm}$$

Pembuatan 60 ppm

$$400 \text{ ppm} \times 1,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 600/10$$

$$Y = 60 \text{ ppm}$$

Pembuatan 20 ppm

$$400 \text{ ppm} \times 0,5 \text{ ml} = Y \times 10$$

$$Y = 200/10$$

$$Y = 20 \text{ ppm}$$

3. F2 atau FERMENTASI 14 HARI

Pembuatan 440 ppm

$$44 \text{ mg} / 0,1 \text{ L} = 440 \text{ ppm}$$

Pembuatan 198 ppm

$$440 \text{ ppm} \times 4,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 1980 / 10$$

$$Y = 198 \text{ ppm}$$

Pembuatan 132 ppm

$$440 \text{ ppm} \times 3 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 1320 / 10$$

$$Y = 132 \text{ ppm}$$

Pembuatan 110 ppm

$$440 \text{ ppm} \times 2,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 1100 / 10$$

$$Y = 110 \text{ ppm}$$

Pembuatan 88 ppm

$$440 \text{ ppm} \times 2 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 880 / 10$$

$$Y = 88 \text{ ppm}$$

Pembuatan 66 ppm

$$440 \text{ ppm} \times 1,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 660 / 10$$

$$Y = 66 \text{ ppm}$$

4. F3 atau FERMENTASI 21 HARI

Pembuatan 600 ppm

$$60 \text{ mg} / 0,1 \text{ L} = 600 \text{ ppm}$$

Pembuatan 450 ppm

$$600 \text{ ppm} \times 7,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 4500 / 10$$

$$Y = 450 \text{ ppm}$$

Pembuatan 420 ppm

$$600 \text{ ppm} \times 7 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 4200 / 10$$

$$Y = 420 \text{ ppm}$$

Pembuatan 300 ppm

$$600 \text{ ppm} \times 5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 3000 / 10$$

$$Y = 300 \text{ ppm}$$

Pembuatan 210 ppm

$$600 \text{ ppm} \times 3,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 2100 / 10$$

$$Y = 210 \text{ ppm}$$

Pembuatan 150 ppm

$$150 \text{ ppm} \times 2,5 \text{ ml} = Y \times 10 \text{ ml}$$

$$Y = 1500 / 10$$

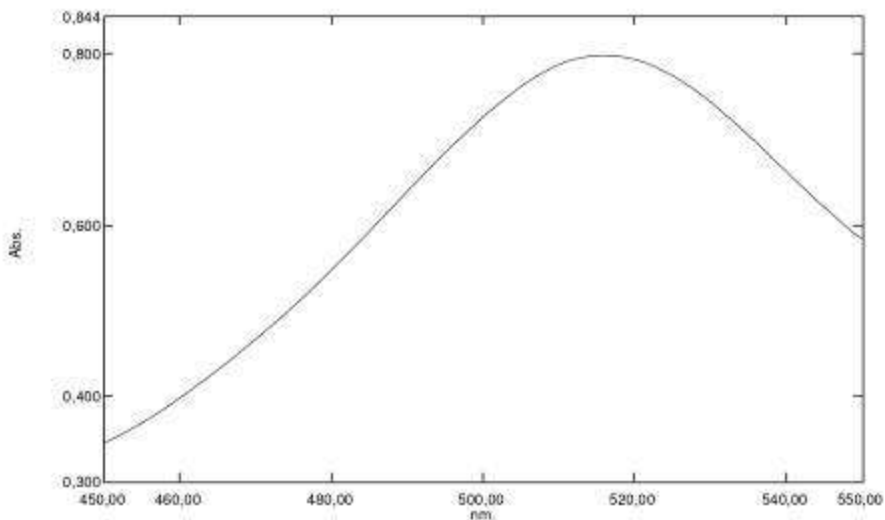
$$Y = 150 \text{ ppm}$$

Lampiran 8. Penentuan panjang gelombang maksimum DPPH

Spectrum Peak Pick Report

19/12/2022 12:09:38

Data Set: DPPH - RawData



[Measurement Properties]

Wavelength Range (nm.): 450.00 to 550.00
 Scan Speed: Fast
 Sampling Interval: 1.0
 Auto Sampling Interval: Disabled
 Scan Mode: Single

No.	P/V	Wavelength	Abs.	Description
1		518.00	0.799	

[Instrument Properties]

Instrument Type: UV-1800 Series
 Measuring Mode: Absorbance
 Slit Width: 1.0 nm
 Light Source Change Wavelength: 340.0 nm
 S/R Exchange: Normal

[Attachment Properties]

Attachment: None

[Operation]

Threshold: 0.0010000
 Points: 4
 Interpolate: Disabled
 Average: Disabled

[Sample Preparation Properties]

Weight:
 Volume:
 Dilution:
 Path Length:
 Additional Information:

Lampiran 9. Penentuan Operating Time

1. Operating Time NF

Kinetics Data Print Report

14/12/2022 15:09:21

Time (Minute)	RawData ...
0.0000	0.4987
1.0000	0.4775
2.0000	0.4537
3.0000	0.4370
4.0000	0.4251
5.0000	0.4131
6.0000	0.4026
7.0000	0.3964
8.0000	0.3863
9.0000	0.3754
10.0000	0.3729
11.0000	0.3663
12.0000	0.3503
13.0000	0.3483
14.0000	0.3445
15.0000	0.3346
16.0000	0.3289
17.0000	0.3256
18.0000	0.3097
19.0000	0.2998
20.0000	0.2954
21.0000	0.2784
22.0000	0.2862
23.0000	0.2657
24.0000	0.2604
25.0000	0.2480
26.0000	0.2386
27.0000	0.2362
28.0000	0.2353
29.0000	0.2294
30.0000	0.2202
31.0000	0.2162
32.0000	0.2141
33.0000	0.1946
34.0000	0.1962
35.0000	0.2093
36.0000	0.1885
37.0000	0.1897
38.0000	0.1835
39.0000	0.1802
40.0000	0.1780
41.0000	0.1692
42.0000	0.1723
43.0000	0.1695
44.0000	0.1714
45.0000	0.1594

2. Operating Time F1

Kinetics Data Print Report

15/12/2022 16:56:04

Time (Minute)	RawData ...
0.0000	0.6653
1.0000	0.6472
2.0000	0.6255
3.0000	0.5914
4.0000	0.5669
5.0000	0.5489
6.0000	0.5277
7.0000	0.5200
8.0000	0.5104
9.0000	0.4954
10.0000	0.4792
11.0000	0.4700
12.0000	0.4571
13.0000	0.4519
14.0000	0.4411
15.0000	0.4355
16.0000	0.4206
17.0000	0.4144
18.0000	0.4117
19.0000	0.3987
20.0000	0.3976
21.0000	0.3838
22.0000	0.3798
23.0000	0.3740
24.0000	0.3633
25.0000	0.3602
26.0000	0.3566
27.0000	0.3455
28.0000	0.3461
29.0000	0.3394
30.0000	0.3341
31.0000	0.3280
32.0000	0.3234
33.0000	0.3212
34.0000	0.3161
35.0000	0.3129
36.0000	0.3020
37.0000	0.3042
38.0000	0.2983
39.0000	0.2959
40.0000	0.2958
41.0000	0.2874
42.0000	0.2872
43.0000	0.2814
44.0000	0.2826
45.0000	0.2785

3. Operating Time F2

Kinetics Data Print Report

15/12/2022 13:08:59

Time (Minute)	RawData ...
0.0000	0.4619
1.0000	0.4245
2.0000	0.3960
3.0000	0.3720
4.0000	0.3507
5.0000	0.3323
6.0000	0.3177
7.0000	0.3037
8.0000	0.2910
9.0000	0.2820
10.0000	0.2720
11.0000	0.2639
12.0000	0.2561
13.0000	0.2498
14.0000	0.2427
15.0000	0.2369
16.0000	0.2319
17.0000	0.2265
18.0000	0.2217
19.0000	0.2174
20.0000	0.2126
21.0000	0.2097
22.0000	0.2058
23.0000	0.2018
24.0000	0.1996
25.0000	0.1955
26.0000	0.1931
27.0000	0.1903
28.0000	0.1881
29.0000	0.1854
30.0000	0.1826
31.0000	0.1803
32.0000	0.1787
33.0000	0.1769
34.0000	0.1746
35.0000	0.1722
36.0000	0.1711
37.0000	0.1698
38.0000	0.1677
39.0000	0.1657
40.0000	0.1642
41.0000	0.1631
42.0000	0.1620
43.0000	0.1609
44.0000	0.1596
45.0000	0.1581

4. Operating Time F3

Kinetics Data Print Report

15/12/2022 14:02:42

Time (Minute)	RawData...
0.0000	0.5793
1.0000	0.5457
2.0000	0.5160
3.0000	0.4888
4.0000	0.4673
5.0000	0.4491
6.0000	0.4308
7.0000	0.4153
8.0000	0.4010
9.0000	0.3891
10.0000	0.3767
11.0000	0.3663
12.0000	0.3567
13.0000	0.3479
14.0000	0.3395
15.0000	0.3308
16.0000	0.3230
17.0000	0.3160
18.0000	0.3096
19.0000	0.3026
20.0000	0.2974
21.0000	0.2914
22.0000	0.2867
23.0000	0.2810
24.0000	0.2760
25.0000	0.2711
26.0000	0.2665
27.0000	0.2617
28.0000	0.2584
29.0000	0.2538
30.0000	0.2504
31.0000	0.2466
32.0000	0.2428
33.0000	0.2395
34.0000	0.2362
35.0000	0.2325
36.0000	0.2298
37.0000	0.2267
38.0000	0.2236
39.0000	0.2209
40.0000	0.2178
41.0000	0.2156
42.0000	0.2131
43.0000	0.2102
44.0000	0.2074
45.0000	0.2055

Lampiran 10. Hasil Pembacaan Absorbansi dan Nilai % Antioksidan

10.1. Hasil pembacaan Absorbansi



10.2. Hasil % Inhibisi

ABS DPPH= 0,799

SAMPEL	PPM	ABS
NF	348	0,191
	218	0,307
	131	0,415
	104	0,462
	44	0,521
F1	200	0,338
	160	0,384
	100	0,474
	60	0,539
	20	0,565
F2	198	0,158
	132	0,335
	110	0,383
	88	0,423

	66	0,539
	450	0,183
	420	0,258
F3	300	0,379
	210	0,476
	150	0,565

Rumus %Inhibisi : (Abs DPPH – Abs Sampel) / Abs DPPH x 100%

1. Sampel NF

$$348 \text{ PPM} = (0,799-0,191)/0,799 \times 100\% = 76,10 \%$$

$$218 \text{ PPM} = (0,799-0,307)/0,799 \times 100\% = 61,58 \%$$

$$131 \text{ PPM} = (0,799-0,415)/0,799 \times 100\% = 48,06 \%$$

$$104 \text{ PPM} = (0,799-0,462)/0,799 \times 100\% = 42,18 \%$$

$$44 \text{ PPM} = (0,799-0,521)/0,799 \times 100\% = 34,79 \%$$

2. Sampel F1

$$200 \text{ PPM} = (0,799-0,338)/0,799 \times 100\% = 57,70 \%$$

$$160 \text{ PPM} = (0,799-0,384)/0,799 \times 100\% = 51,94 \%$$

$$100 \text{ PPM} = (0,799-0,474)/0,799 \times 100\% = 40,68 \%$$

$$60 \text{ PPM} = (0,799-0,539)/0,799 \times 100\% = 32,54 \%$$

$$20 \text{ PPM} = (0,799-0,565)/0,799 \times 100\% = 29,29 \%$$

3. Sampel F2

$$198 \text{ PPM} = (0,799-0,158)/0,799 \times 100\% = 80,23 \%$$

$$132 \text{ PPM} = (0,799-0,335)/0,799 \times 100\% = 58,07 \%$$

$$110 \text{ PPM} = (0,799-0,383)/0,799 \times 100\% = 52,07 \%$$

$$88 \text{ PPM} = (0,799-0,423)/0,799 \times 100\% = 47,06 \%$$

$$66 \text{ PPM} = (0,799-0,539)/0,799 \times 100\% = 32,54 \%$$

4. Sampel F3

$$450 \text{ PPM} = (0,799-0,183)/0,799 \times 100\% = 77,10 \%$$

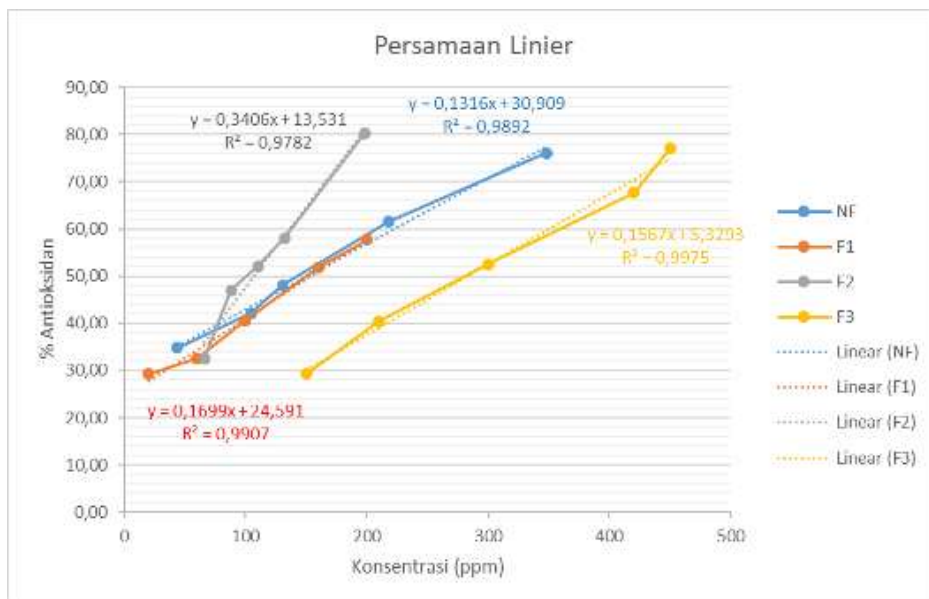
$$420 \text{ PPM} = (0,799-0,258)/0,799 \times 100\% = 67,71 \%$$

$$300 \text{ PPM} = (0,799-0,379)/0,799 \times 100\% = 52,07 \%$$

$$210 \text{ PPM} = (0,799-0,476)/0,799 \times 100\% = 40,43 \%$$

$$150 \text{ PPM} = (0,799-0,565)/0,799 \times 100\% = 29,29 \%$$

Lampiran 11. Hasil Nilai IC50 dan AAI



PERHITUNGAN IC50

1. REGRESI LINIER NF

$$y = 0,1316x + 30,909$$

$$50 = 0,1316x + 30,909$$

$$X = (50 - 30,909) / 0,1316$$

$$X = 145,0683891 \text{ ppm}$$

2. REGRESI LINIER F1

$$y = 0,1699x + 24,591$$

$$50 = 0,1699x + 24,591$$

$$X = (50 - 24,591) / 0,1699$$

$$X = 149,552678 \text{ ppm}$$

3. REGRESI LINIER F2

$$y = 0,3406x + 13,531$$

$$50 = 0,3406x + 13,531$$

$$X = (50 - 13,531) / 0,3406$$

$$X = 107,0728127 \text{ ppm}$$

4. REGRESI LINIER F3

$$y = 0,1567x + 5,3293$$

$$50 = 0,1567x + 5,3293$$

$$X = (50 - 5,3293) / 0,1567$$

$$X = 285,0714742 \text{ ppm}$$

PERHITUNGAN AAI

$$\text{DPPH} = 15,8 \text{ MG} / 100\text{ml} = 15800 \mu\text{g} / 100 \text{ ml} = 158 \mu\text{g/ml}$$

$$1 \text{ PPM IC50} = 1 \mu\text{g/ml IC50}$$

$$\text{AAI} = \text{Konsentrasi DPPH} (\mu\text{g /ml}) / \text{IC50} (\mu\text{g/ml})$$

$$\text{AAI NF} = 158/145,07 = 1,09$$

$$\text{AAI F1} = 158/149,5 = 1,05$$

$$\text{AAI F2} = 158/107,07 = 1,47$$

$$\text{AAI F3} = 158 / 285,07 = 0,55$$