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# LAMPIRAN

## Lampiran 1. Form Organoleptik Uji Hedonik

Nama Panelis :
Produk :
Tanggal Pengujian :

Instruksi :

1. Dihadapan anda disajikan lima macam sampel abon ikan dengan kode tertentu. Anda diminta untuk memberikan penilaian terhadap lima sampel sesuai dengan tingkat kesukaan anda terhadap lima sampel tersebut.
2. Sebelum anda mencicipi sampel, anda diminta untuk berkumur menggunakan air putih yang telah disediakan dan tunggu sekitar 1-2 menit sebelum melakukan mencicipi sampel berikutnya.
3. Berikan penilaian untuk masing-masing sampel di hadapan anda dengan penilaian berdasarkan skala nilai yang telah disediakan.

| **Parameter** | **Kode Sampel** | | | | |
|---|---|---|---|---|---|
| | **T1** | **T2** | **T3** | **T4** | **T5** |
| Aroma | | | | | |
| Warna | | | | | |
| Tekstur | | | | | |
| Rasa | | | | | |

Keterangan:
1 = Sangat tidak suka
2 = Tidak suka
3 = Agak tidak suka
4 = Netral
5 = Agak suka
6 = Suka
7 = Sangat suka

**Lampiran 2. Lembar uji organoleptik dengan uji kepentingan**

| | | | |
|---|---|---|---|
| Tanggal | : | Nama panelis | : |
| Bahan yang diuji | : | Jenis uji | : |

Instruksi

1. Berikan penilaian untuk masing–masing parameter dengan memberi peringkat angka dari parameter yang anda anggap paling penting sampai yang kurang penting (urutkan dari 1-10)

| **Parameter** | **Tingkat kepentingan** |
|---|---|
| Rendemen | |
| Protein | |
| Lemak | |
| Kadar Abu | |
| Kadar Air | |
| Uji organoleptik warna | |
| Uji organoleptik Rasa | |
| Uji organoleptik Tekstur | |
| Uji organoleptik Aroma | |
| Uji TBA | |

**Lampiran 3. Hasil Analisis Sidik Keragaman Hedonik Warna**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 2,85 | 2,9 | 2,75 | 8,5 | 2,83 | .07638 |
| T2 | 3,95 | 4 | 3,8 | 11,75 | 3,92 | .10408 |
| T3 | 4,7 | 4,9 | 4,8 | 14,4 | 4,8 | .10000 |
| T4 | 5,45 | 5,55 | 5,2 | 16,2 | 5,4 | .14154 |
| T5 | 5,65 | 5,6 | 5,45 | 16,7 | 5,57 | .10408 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 15.273 | 4 | 3.818 | 331.836 | .000 |
| Within Groups | .115 | 10 | .012 | | |
| Total | 15.388 | 14 | | | |

| (I) Warna | (J) Warna | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -1.08333* | .08758 | .000 | -1.2785 | -.8882 |
| | 3 | -1.96667* | .08758 | .000 | -2.1618 | -1.7715 |
| | 4 | -2.53000* | .08758 | .000 | -2.7252 | -2.3348 |
| | 5 | -2.73333* | .08758 | .000 | -2.9285 | -2.5382 |
| 2 | 1 | 1.08333* | .08758 | .000 | .8882 | 1.2785 |
| | 3 | -.88333* | .08758 | .000 | -1.0785 | -.6882 |
| | 4 | -1.44667* | .08758 | .000 | -1.6418 | -1.2515 |
| | 5 | -1.65000* | .08758 | .000 | -1.8452 | -1.4548 |
| 3 | 1 | 1.96667* | .08758 | .000 | 1.7715 | 2.1618 |
| | 2 | .88333* | .08758 | .000 | .6882 | 1.0785 |
| | 4 | -.56333* | .08758 | .000 | -.7585 | -.3682 |
| | 5 | -.76667* | .08758 | .000 | -.9618 | -.5715 |
| 4 | 1 | 2.53000* | .08758 | .000 | 2.3348 | 2.7252 |
| | 2 | 1.44667* | .08758 | .000 | 1.2515 | 1.6418 |
| | 3 | .56333* | .08758 | .000 | .3682 | .7585 |
| | 5 | -.20333* | .08758 | .043 | -.3985 | -.0082 |
| 5 | 1 | 2.73333* | .08758 | .000 | 2.5382 | 2.9285 |
| | 2 | 1.65000* | .08758 | .000 | 1.4548 | 1.8452 |
| | 3 | .76667* | .08758 | .000 | .5715 | .9618 |
| | 4 | .20333* | .08758 | .043 | .0082 | .3985 |

**Lampiran4. Hasil Analisis Sidik Keragaman Hedonik Aroma**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 3,15 | 2,8 | 3,05 | 9 | 3 | .18028 |
| T2 | 4,35 | 4 | 4,5 | 12,85 | 4,28 | .25658 |
| T3 | 5 | 4,8 | 4,9 | 14,7 | 4,9 | .10000 |
| T4 | 5,2 | 4,7 | 4,8 | 14,7 | 4,9 | .26458 |
| T5 | 5,45 | 5,3 | 5,7 | 16,45 | 5,48 | .20207 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 10.749 | 4 | 2.687 | 61.306 | .000 |
| Within Groups | .438 | 10 | .044 | | |
| Total | 11.187 | 14 | | | |

**Multiple Comparisons**

| (I) Aroma | (J) Aroma | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -1.28333* | .17095 | .000 | -1.6642 | -.9024 |
| | 3 | -1.90000* | .17095 | .000 | -2.2809 | -1.5191 |
| | 4 | -1.90000* | .17095 | .000 | -2.2809 | -1.5191 |
| | 5 | -2.48333* | .17095 | .000 | -2.8642 | -2.1024 |
| 2 | 1 | 1.28333* | .17095 | .000 | .9024 | 1.6642 |
| | 3 | -.61667* | .17095 | .005 | -.9976 | -.2358 |
| | 4 | -.61667* | .17095 | .005 | -.9976 | -.2358 |
| | 5 | -1.20000* | .17095 | .000 | -1.5809 | -.8191 |
| 3 | 1 | 1.90000* | .17095 | .000 | 1.5191 | 2.2809 |
| | 2 | .61667* | .17095 | .005 | .2358 | .9976 |
| | 4 | .00000 | .17095 | 1.000 | -.3809 | .3809 |
| | 5 | -.58333* | .17095 | .007 | -.9642 | -.2024 |
| 4 | 1 | 1.90000* | .17095 | .000 | 1.5191 | 2.2809 |
| | 2 | .61667* | .17095 | .005 | .2358 | .9976 |
| | 3 | .00000 | .17095 | 1.000 | -.3809 | .3809 |
| | 5 | -.58333* | .17095 | .007 | -.9642 | -.2024 |
| 5 | 1 | 2.48333* | .17095 | .000 | 2.1024 | 2.8642 |
| | 2 | 1.20000* | .17095 | .000 | .8191 | 1.5809 |
| | 3 | .58333* | .17095 | .007 | .2024 | .9642 |
| | 4 | .58333* | .17095 | .007 | .2024 | .9642 |

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

**Lampiran5. Hasil Analisis Sidik Keragaman Hedonik Tekstur**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 4,25 | 4,3 | 4,4 | 12,95 | 4,32 | .07638 |
| T2 | 4,65 | 4,5 | 4,7 | 13,85 | 4,62 | .10408 |
| T3 | 4,85 | 4,8 | 4,9 | 14,55 | 4,85 | .05000 |
| T4 | 5,4 | 5,35 | 5,15 | 15,9 | 5,3 | .13229 |
| T5 | 5,45 | 5,5 | 5,35 | 16,3 | 5,43 | .07638 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 2.602 | 4 | .651 | 76.539 | .000 |
| Within Groups | .085 | 10 | .009 | | |
| Total | 2.687 | 14 | | | |

**Multiple Comparisons**

Ulangan

LSD

| (I) Tekstur | (J) Tekstur | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -.30000* | .07528 | .003 | -.4677 | -.1323 |
| | 3 | -.53333* | .07528 | .000 | -.7011 | -.3656 |
| | 4 | -.98333* | .07528 | .000 | -1.1511 | -.8156 |
| | 5 | -1.11667* | .07528 | .000 | -1.2844 | -.9489 |
| 2 | 1 | .30000* | .07528 | .003 | .1323 | .4677 |
| | 3 | -.23333* | .07528 | .011 | -.4011 | -.0656 |
| | 4 | -.68333* | .07528 | .000 | -.8511 | -.5156 |
| | 5 | -.81667* | .07528 | .000 | -.9844 | -.6489 |
| 3 | 1 | .53333* | .07528 | .000 | .3656 | .7011 |
| | 2 | .23333* | .07528 | .011 | .0656 | .4011 |
| | 4 | -.45000* | .07528 | .000 | -.6177 | -.2823 |
| | 5 | -.58333* | .07528 | .000 | -.7511 | -.4156 |
| 4 | 1 | .98333* | .07528 | .000 | .8156 | 1.1511 |
| | 2 | .68333* | .07528 | .000 | .5156 | .8511 |
| | 3 | .45000* | .07528 | .000 | .2823 | .6177 |
| | 5 | -.13333 | .07528 | .107 | -.3011 | .0344 |
| 5 | 1 | 1.11667* | .07528 | .000 | .9489 | 1.2844 |
| | 2 | .81667* | .07528 | .000 | .6489 | .9844 |
| | 3 | .58333* | .07528 | .000 | .4156 | .7511 |
| | 4 | .13333 | .07528 | .107 | -.0344 | .3011 |

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

**Lampiran6. Hasil Analisis Sidik Keragaman Hedonik Rasa**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 2,55 | 2,7 | 2,35 | 7,6 | 2,53 | .17559 |
| T2 | 3,75 | 3,95 | 3,75 | 11,45 | 3,82 | .11547 |
| T3 | 4,9 | 4,75 | 4,65 | 14,3 | 4,77 | .12583 |
| T4 | 5,5 | 5,85 | 5,25 | 16,6 | 5,53 | .30139 |
| T5 | 6 | 6,1 | 6,05 | 18,15 | 6,05 | .05000 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 23.604 | 4 | 5.901 | 192.427 | .000 |
| Within Groups | .307 | 10 | .031 | | |
| Total | 23.911 | 14 | | | |

**Multiple Comparisons**

Ulangan

LSD

| (I) Rasa | (J) Rasa | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -1.28333* | .14298 | .000 | -1.6019 | -.9647 |
| | 3 | -2.23333* | .14298 | .000 | -2.5519 | -1.9147 |
| | 4 | -3.00000* | .14298 | .000 | -3.3186 | -2.6814 |
| | 5 | -3.51667* | .14298 | .000 | -3.8353 | -3.1981 |
| 2 | 1 | 1.28333* | .14298 | .000 | .9647 | 1.6019 |
| | 3 | -.95000* | .14298 | .000 | -1.2686 | -.6314 |
| | 4 | -1.71667* | .14298 | .000 | -2.0353 | -1.3981 |
| | 5 | -2.23333* | .14298 | .000 | -2.5519 | -1.9147 |
| 3 | 1 | 2.23333* | .14298 | .000 | 1.9147 | 2.5519 |
| | 2 | .95000* | .14298 | .000 | .6314 | 1.2686 |
| | 4 | -.76667* | .14298 | .000 | -1.0853 | -.4481 |
| | 5 | -1.28333* | .14298 | .000 | -1.6019 | -.9647 |
| 4 | 1 | 3.00000* | .14298 | .000 | 2.6814 | 3.3186 |
| | 2 | 1.71667* | .14298 | .000 | 1.3981 | 2.0353 |
| | 3 | .76667* | .14298 | .000 | .4481 | 1.0853 |
| | 5 | -.51667* | .14298 | .005 | -.8353 | -.1981 |
| 5 | 1 | 3.51667* | .14298 | .000 | 3.1981 | 3.8353 |
| | 2 | 2.23333* | .14298 | .000 | 1.9147 | 2.5519 |
| | 3 | 1.28333* | .14298 | .000 | .9647 | 1.6019 |
| | 4 | .51667* | .14298 | .005 | .1981 | .8353 |

*. T

**Lampiran7. Hasil Analisis Sidik Keragaman Kadar Protein**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 18,38 | 19,25 | 17,5 | 55,13 | 18,38 | .87500 |
| T2 | 19,25 | 20,13 | 19,25 | 58,63 | 19,54 | .50518 |
| T3 | 20,13 | 21 | 21,88 | 63,00 | 21,00 | .87500 |
| T4 | 22,75 | 23,63 | 24,5 | 70,88 | 23,63 | .87500 |
| T5 | 23,63 | 24,5 | 25,38 | 73,50 | 24,50 | .87500 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 81.973 | 4 | 20.493 | 30.885 | .000 |
| Within Groups | 6.635 | 10 | .664 | | |
| Total | 88.608 | 14 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Ulangan
LSD

| (I) Protein | (J) Protein | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -1.16667 | .66510 | .110 | -2.6486 | .3153 |
| | 3 | -2.62500* | .66510 | .003 | -4.1069 | -1.1431 |
| | 4 | -5.25000* | .66510 | .000 | -6.7319 | -3.7681 |
| | 5 | -6.12500* | .66510 | .000 | -7.6069 | -4.6431 |
| 2 | 1 | 1.16667 | .66510 | .110 | -.3153 | 2.6486 |
| | 3 | -1.45833 | .66510 | .053 | -2.9403 | .0236 |
| | 4 | -4.08333* | .66510 | .000 | -5.5653 | -2.6014 |
| | 5 | -4.95833* | .66510 | .000 | -6.4403 | -3.4764 |
| 3 | 1 | 2.62500* | .66510 | .003 | 1.1431 | 4.1069 |
| | 2 | 1.45833 | .66510 | .053 | -.0236 | 2.9403 |
| | 4 | -2.62500* | .66510 | .003 | -4.1069 | -1.1431 |
| | 5 | -3.50000* | .66510 | .000 | -4.9819 | -2.0181 |
| 4 | 1 | 5.25000* | .66510 | .000 | 3.7681 | 6.7319 |
| | 2 | 4.08333* | .66510 | .000 | 2.6014 | 5.5653 |
| | 3 | 2.62500* | .66510 | .003 | 1.1431 | 4.1069 |
| | 5 | -.87500 | .66510 | .218 | -2.3569 | .6069 |
| 5 | 1 | 6.12500* | .66510 | .000 | 4.6431 | 7.6069 |
| | 2 | 4.95833* | .66510 | .000 | 3.4764 | 6.4403 |
| | 3 | 3.50000* | .66510 | .000 | 2.0181 | 4.9819 |
| | 4 | .87500 | .66510 | .218 | -.6069 | 2.3569 |

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

**Lampiran8. Hasil Analisis Sidik Keragaman Kadar Air**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 6,5 | 7 | 6 | 19,50 | 6,50 | .50000 |
| T2 | 5,5 | 6 | 5 | 16,50 | 5,50 | .50000 |
| T3 | 5 | 5,5 | 4,5 | 15,00 | 5,00 | .50000 |
| T4 | 4,5 | 5 | 3,5 | 13,00 | 4,33 | .76376 |
| T5 | 4 | 4,5 | 3 | 11,50 | 3,83 | .76376 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 12.900 | 4 | 3.225 | 8.413 | .003 |
| Within Groups | 3.833 | 10 | .383 | | |
| Total | 16.733 | 14 | | | |

**Multiple Comparisons**

Ulangan
LSD

| (I) Kadarair | (J) Kadarair | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | 1.00000 | .50553 | .076 | -.1264 | 2.1264 |
| | 3 | 1.50000* | .50553 | .014 | .3736 | 2.6264 |
| | 4 | 2.16667* | .50553 | .002 | 1.0403 | 3.2930 |
| | 5 | 2.66667* | .50553 | .000 | 1.5403 | 3.7930 |
| 2 | 1 | -1.00000 | .50553 | .076 | -2.1264 | .1264 |
| | 3 | .50000 | .50553 | .346 | -.6264 | 1.6264 |
| | 4 | 1.16667* | .50553 | .044 | .0403 | 2.2930 |
| | 5 | 1.66667* | .50553 | .008 | .5403 | 2.7930 |
| 3 | 1 | -1.50000* | .50553 | .014 | -2.6264 | -.3736 |
| | 2 | -.50000 | .50553 | .346 | -1.6264 | .6264 |
| | 4 | .66667 | .50553 | .217 | -.4597 | 1.7930 |
| | 5 | 1.16667* | .50553 | .044 | .0403 | 2.2930 |
| 4 | 1 | -2.16667* | .50553 | .002 | -3.2930 | -1.0403 |
| | 2 | -1.16667* | .50553 | .044 | -2.2930 | -.0403 |
| | 3 | -.66667 | .50553 | .217 | -1.7930 | .4597 |
| | 5 | .50000 | .50553 | .346 | -.6264 | 1.6264 |
| 5 | 1 | -2.66667* | .50553 | .000 | -3.7930 | -1.5403 |
| | 2 | -1.66667* | .50553 | .008 | -2.7930 | -.5403 |
| | 3 | -1.16667* | .50553 | .044 | -2.2930 | -.0403 |
| | 4 | -.50000 | .50553 | .346 | -1.6264 | .6264 |

**Lampiran9. Hasil Analisis Sidik Keragaman Kadar Abu**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 2,5 | 3 | 3,5 | 9,00 | 3,00 | .50000 |
| T2 | 3 | 4,5 | 4 | 11,50 | 3,83 | .76376 |
| T3 | 4 | 5 | 5,5 | 14,50 | 4,83 | .76376 |
| T4 | 5 | 5,5 | 6 | 16,50 | 5,50 | .50000 |
| T5 | 6,5 | 6 | 6,5 | 19,00 | 6,33 | .28868 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 20.900 | 4 | 5.225 | 14.929 | .000 |
| Within Groups | 3.500 | 10 | .350 | | |
| Total | 24.400 | 14 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Ulangan
LSD

| (I) Kadarabu | (J) Kadarabu | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -.83333 | .48305 | .115 | -1.9096 | .2430 |
| | 3 | -1.83333* | .48305 | .004 | -2.9096 | -.7570 |
| | 4 | -2.50000* | .48305 | .000 | -3.5763 | -1.4237 |
| | 5 | -3.33333* | .48305 | .000 | -4.4096 | -2.2570 |
| 2 | 1 | .83333 | .48305 | .115 | -.2430 | 1.9096 |
| | 3 | -1.00000 | .48305 | .065 | -2.0763 | .0763 |
| | 4 | -1.66667* | .48305 | .006 | -2.7430 | -.5904 |
| | 5 | -2.50000* | .48305 | .000 | -3.5763 | -1.4237 |
| 3 | 1 | 1.83333* | .48305 | .004 | .7570 | 2.9096 |
| | 2 | 1.00000 | .48305 | .065 | -.0763 | 2.0763 |
| | 4 | -.66667 | .48305 | .198 | -1.7430 | .4096 |
| | 5 | -1.50000* | .48305 | .011 | -2.5763 | -.4237 |
| 4 | 1 | 2.50000* | .48305 | .000 | 1.4237 | 3.5763 |
| | 2 | 1.66667* | .48305 | .006 | .5904 | 2.7430 |
| | 3 | .66667 | .48305 | .198 | -.4096 | 1.7430 |
| | 5 | -.83333 | .48305 | .115 | -1.9096 | .2430 |
| 5 | 1 | 3.33333* | .48305 | .000 | 2.2570 | 4.4096 |
| | 2 | 2.50000* | .48305 | .000 | 1.4237 | 3.5763 |
| | 3 | 1.50000* | .48305 | .011 | .4237 | 2.5763 |
| | 4 | .83333 | .48305 | .115 | -.2430 | 1.9096 |

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

**Lampiran 10. Hasil Analisis Sidik Keragaman Kadar Lemak**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 13 | 14 | 12 | 39,00 | 13,00 | 1.00000 |
| T2 | 15 | 17 | 16 | 48,00 | 16,00 | 1.00000 |
| T3 | 19 | 20 | 18 | 57,00 | 19,00 | 1.00000 |
| T4 | 20 | 25 | 24 | 69,00 | 23,00 | 2.64575 |
| T5 | 24 | 29 | 26 | 79,00 | 26,33 | 2.51661 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 341.067 | 4 | 85.267 | 26.102 | .000 |
| Within Groups | 32.667 | 10 | 3.267 | | |
| Total | 373.733 | 14 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Ulangan
LSD

| (I) Lemak | (J) Lemak | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -3.00000 | 1.47573 | .069 | -6.2881 | .2881 |
| | 3 | -6.00000* | 1.47573 | .002 | -9.2881 | -2.7119 |
| | 4 | -10.00000* | 1.47573 | .000 | -13.2881 | -6.7119 |
| | 5 | -13.33333* | 1.47573 | .000 | -16.6215 | -10.0452 |
| 2 | 1 | 3.00000 | 1.47573 | .069 | -.2881 | 6.2881 |
| | 3 | -3.00000 | 1.47573 | .069 | -6.2881 | .2881 |
| | 4 | -7.00000* | 1.47573 | .001 | -10.2881 | -3.7119 |
| | 5 | -10.33333* | 1.47573 | .000 | -13.6215 | -7.0452 |
| 3 | 1 | 6.00000* | 1.47573 | .002 | 2.7119 | 9.2881 |
| | 2 | 3.00000 | 1.47573 | .069 | -.2881 | 6.2881 |
| | 4 | -4.00000* | 1.47573 | .022 | -7.2881 | -.7119 |
| | 5 | -7.33333* | 1.47573 | .001 | -10.6215 | -4.0452 |
| 4 | 1 | 10.00000* | 1.47573 | .000 | 6.7119 | 13.2881 |
| | 2 | 7.00000* | 1.47573 | .001 | 3.7119 | 10.2881 |
| | 3 | 4.00000* | 1.47573 | .022 | .7119 | 7.2881 |
| | 5 | -3.33333* | 1.47573 | .047 | -6.6215 | -.0452 |
| 5 | 1 | 13.33333* | 1.47573 | .000 | 10.0452 | 16.6215 |
| | 2 | 10.33333* | 1.47573 | .000 | 7.0452 | 13.6215 |
| | 3 | 7.33333* | 1.47573 | .001 | 4.0452 | 10.6215 |
| | 4 | 3.33333* | 1.47573 | .047 | .0452 | 6.6215 |

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

**Lampiran 11. Hasil Analisis Sidik Keragaman Rendemen**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 69,67 | 69 | 67,67 | 206,33 | 68,78 | 1.01799 |
| T2 | 71,33 | 70,33 | 69,33 | 211,00 | 70,33 | 1.00000 |
| T3 | 75 | 72,67 | 71,67 | 219,33 | 73,11 | 1.70869 |
| T4 | 77 | 75,33 | 74,67 | 227,00 | 75,67 | 1.20093 |
| T5 | 79 | 78 | 78,33 | 235,33 | 78,44 | .50954 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 184.007 | 4 | 46.002 | 34.547 | .000 |
| Within Groups | 13.316 | 10 | 1.332 | | |
| Total | 197.322 | 14 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Ulangan
LSD

| (I) Rendemen | (J) Rendemen | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -1.55000 | .94218 | .131 | -3.6493 | .5493 |
| | 3 | -4.33333* | .94218 | .001 | -6.4326 | -2.2340 |
| | 4 | -6.88667* | .94218 | .000 | -8.9860 | -4.7874 |
| | 5 | -9.66333* | .94218 | .000 | -11.7626 | -7.5640 |
| 2 | 1 | 1.55000 | .94218 | .131 | -.5493 | 3.6493 |
| | 3 | -2.78333* | .94218 | .014 | -4.8826 | -.6840 |
| | 4 | -5.33667* | .94218 | .000 | -7.4360 | -3.2374 |
| | 5 | -8.11333* | .94218 | .000 | -10.2126 | -6.0140 |
| 3 | 1 | 4.33333* | .94218 | .001 | 2.2340 | 6.4326 |
| | 2 | 2.78333* | .94218 | .014 | .6840 | 4.8826 |
| | 4 | -2.55333* | .94218 | .022 | -4.6526 | -.4540 |
| | 5 | -5.33000* | .94218 | .000 | -7.4293 | -3.2307 |
| 4 | 1 | 6.88667* | .94218 | .000 | 4.7874 | 8.9860 |
| | 2 | 5.33667* | .94218 | .000 | 3.2374 | 7.4360 |
| | 3 | 2.55333* | .94218 | .022 | .4540 | 4.6526 |
| | 5 | -2.77667* | .94218 | .015 | -4.8760 | -.6774 |
| 5 | 1 | 9.66333* | .94218 | .000 | 7.5640 | 11.7626 |
| | 2 | 8.11333* | .94218 | .000 | 6.0140 | 10.2126 |
| | 3 | 5.33000* | .94218 | .000 | 3.2307 | 7.4293 |
| | 4 | 2.77667* | .94218 | .015 | .6774 | 4.8760 |

## Lampiran 12. Hasil Analisis Sidik Keragaman TBA

### Data Hasil Analisis TBA 7 Hari

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 0,038 | 0,030 | 0,035 | 0,103 | 0,034 | .00404 |
| T2 | 0,030 | 0,028 | 0,024 | 0,082 | 0,027 | .00306 |
| T3 | 0,025 | 0,023 | 0,019 | 0,067 | 0,022 | .00306 |
| T4 | 0,018 | 0,016 | 0,015 | 0,049 | 0,016 | .00153 |
| T5 | 0,015 | 0,014 | 0,012 | 0,041 | 0,014 | .00153 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .001 | 4 | .000 | 26.378 | .000 |
| Within Groups | .000 | 10 | .000 | | |
| Total | .001 | 14 | | | |

**Multiple Comparisons**

Ulangan

LSD

| (I) TBA7hari | (J) TBA7hari | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | .00700* | .00230 | .012 | .0019 | .0121 |
| | 3 | .01200* | .00230 | .000 | .0069 | .0171 |
| | 4 | .01800* | .00230 | .000 | .0129 | .0231 |
| | 5 | .02067* | .00230 | .000 | .0155 | .0258 |
| 2 | 1 | -.00700* | .00230 | .012 | -.0121 | -.0019 |
| | 3 | .00500 | .00230 | .055 | -.0001 | .0101 |
| | 4 | .01100* | .00230 | .001 | .0059 | .0161 |
| | 5 | .01367* | .00230 | .000 | .0085 | .0188 |
| 3 | 1 | -.01200* | .00230 | .000 | -.0171 | -.0069 |
| | 2 | -.00500 | .00230 | .055 | -.0101 | .0001 |
| | 4 | .00600* | .00230 | .026 | .0009 | .0111 |
| | 5 | .00867* | .00230 | .004 | .0035 | .0138 |
| 4 | 1 | -.01800* | .00230 | .000 | -.0231 | -.0129 |
| | 2 | -.01100* | .00230 | .001 | -.0161 | -.0059 |
| | 3 | -.00600* | .00230 | .026 | -.0111 | -.0009 |
| | 5 | .00267 | .00230 | .273 | -.0025 | .0078 |
| 5 | 1 | -.02067* | .00230 | .000 | -.0258 | -.0155 |
| | 2 | -.01367* | .00230 | .000 | -.0188 | -.0085 |
| | 3 | -.00867* | .00230 | .004 | -.0138 | -.0035 |
| | 4 | -.00267 | .00230 | .273 | -.0078 | .0025 |

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

**Data Hasil Analisis TBA 14 Hari**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 0,47 | 0,62 | 0,55 | 1,64 | 0,55 | .07800 |
| T2 | 0,39 | 0,55 | 0,47 | 1,40 | 0,47 | .07800 |
| T3 | 0,31 | 0,39 | 0,41 | 1,11 | 0,37 | .05015 |
| T4 | 0,23 | 0,35 | 0,31 | 0,90 | 0,30 | .05957 |
| T5 | 0,16 | 0,23 | 0,18 | 0,57 | 0,19 | .04003 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .234 | 4 | .058 | 14.747 | .000 |
| Within Groups | .040 | 10 | .004 | | |
| Total | .274 | 14 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Ulangan
LSD

| (I) TBA | (J) TBA | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | .07800 | .05142 | .160 | -.0366 | .1926 |
| | 3 | .17680* | .05142 | .006 | .0622 | .2914 |
| | 4 | .24700* | .05142 | .001 | .1324 | .3616 |
| | 5 | .35620* | .05142 | .000 | .2416 | .4708 |
| 2 | 1 | -.07800 | .05142 | .160 | -.1926 | .0366 |
| | 3 | .09880 | .05142 | .084 | -.0158 | .2134 |
| | 4 | .16900* | .05142 | .008 | .0544 | .2836 |
| | 5 | .27820* | .05142 | .000 | .1636 | .3928 |
| 3 | 1 | -.17680* | .05142 | .006 | -.2914 | -.0622 |
| | 2 | -.09880 | .05142 | .084 | -.2134 | .0158 |
| | 4 | .07020 | .05142 | .202 | -.0444 | .1848 |
| | 5 | .17940* | .05142 | .006 | .0648 | .2940 |
| 4 | 1 | -.24700* | .05142 | .001 | -.3616 | -.1324 |
| | 2 | -.16900* | .05142 | .008 | -.2836 | -.0544 |
| | 3 | -.07020 | .05142 | .202 | -.1848 | .0444 |
| | 5 | .10920 | .05142 | .060 | -.0054 | .2238 |
| 5 | 1 | -.35620* | .05142 | .000 | -.4708 | -.2416 |
| | 2 | -.27820* | .05142 | .000 | -.3928 | -.1636 |
| | 3 | -.17940* | .05142 | .006 | -.2940 | -.0648 |
| | 4 | -.10920 | .05142 | .060 | -.2238 | .0054 |

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

**Data Hasil Analisis TBA 21 Hari**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T1 | 0,665 | 0,650 | 0,670 | 1,985 | 0,662 | .01041 |
| T2 | 0,578 | 0,563 | 0,529 | 1,670 | 0,557 | .02511 |
| T3 | 0,508 | 0,486 | 0,479 | 1,473 | 0,491 | .01513 |
| T4 | 0,443 | 0,438 | 0,437 | 1,318 | 0,439 | .00321 |
| T5 | 0,376 | 0,359 | 0,349 | 1,084 | 0,361 | .01365 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .157 | 4 | .039 | 168.499 | .000 |
| Within Groups | .002 | 10 | .000 | | |
| Total | .159 | 14 | | | |

**Multiple Comparisons**

Ulangan

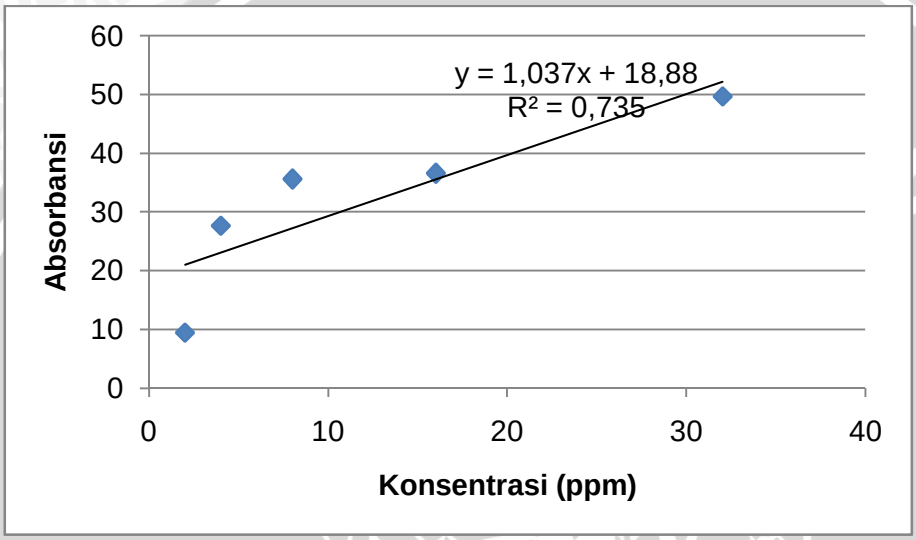
LSD

| (I) TBA21hari | (J) TBA21hari | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | .10500* | .01246 | .000 | .0772 | .1328 |
| | 3 | .17067* | .01246 | .000 | .1429 | .1984 |
| | 4 | .22233* | .01246 | .000 | .1946 | .2501 |
| | 5 | .30033* | .01246 | .000 | .2726 | .3281 |
| 2 | 1 | -.10500* | .01246 | .000 | -.1328 | -.0772 |
| | 3 | .06567* | .01246 | .000 | .0379 | .0934 |
| | 4 | .11733* | .01246 | .000 | .0896 | .1451 |
| | 5 | .19533* | .01246 | .000 | .1676 | .2231 |
| 3 | 1 | -.17067* | .01246 | .000 | -.1984 | -.1429 |
| | 2 | -.06567* | .01246 | .000 | -.0934 | -.0379 |
| | 4 | .05167* | .01246 | .002 | .0239 | .0794 |
| | 5 | .12967* | .01246 | .000 | .1019 | .1574 |
| 4 | 1 | -.22233* | .01246 | .000 | -.2501 | -.1946 |
| | 2 | -.11733* | .01246 | .000 | -.1451 | -.0896 |
| | 3 | -.05167* | .01246 | .002 | -.0794 | -.0239 |
| | 5 | .07800* | .01246 | .000 | .0502 | .1058 |
| 5 | 1 | -.30033* | .01246 | .000 | -.3281 | -.2726 |
| | 2 | -.19533* | .01246 | .000 | -.2231 | -.1676 |
| | 3 | -.12967* | .01246 | .000 | -.1574 | -.1019 |
| | 4 | -.07800* | .01246 | .000 | -.1058 | -.0502 |

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

**Lampiran 13. Kurva Standart Vitamin C**

| Konsentrasi (ppm) | Absorbansi Blanko | Absorbansi | Inhibisi (%) |
|---|---|---|---|
| 2 | 0,709 | 0,642 | 9,44 |
| 4 | 0,709 | 0,513 | 27,64 |
| 8 | 0,709 | 0,457 | 35,54 |
| 16 | 0,709 | 0,450 | 36,53 |
| 32 | 0,709 | 0,357 | 49,64 |
| | | | |




Berdasarkan kurva standar Vitamin C, didapatkan persamaan regresi Vitamihn C sebagai berikut:

Y = 1,0378x + 18,889

**Perhitungan nilai IC50 Vitamin C**

Y = 1,0378x + 18,889

50 = 1,0378x +18,889

1,0378x =50 – 18,889

1,0378x =31,111

X =29,977 ppm

Jadi, nilai IC50 Vitamin Cadalah 29,997 ppm

**Lampiran 14. Perhitungan Nilai IC50 dan Kurva Standar Vitamin C**

**Perhitungan konsnetrasi Vitamin C (2, 4, 8, 16, dan 32 ppm)**

Diketahui: Larutan induk 400 ppm atau 40 mg dilarutkan dalam 100 ml

Volume yang digunakan 100 ml

1. Konsentrasi 2 ppm

   M1.V1 = M2.V2

   400XV1= 2 x 100

   400V1 = 200

   V1= 0,5 ml

2. Konsnetrasi 4 ppm

   M1.V1 = M2.V2

   400XV1= 4x 100

   400V1 = 400

   V1= 1 ml

3. Konsnetrasi 8 ppm

   M1.V1= M2.V2

   400XV1 = 8x 100

   400V1 = 800

   V1= 2 ml

4. Konsnetrasi 16 ppm

   M1.V1= M2.V2

   400XV1 = 16x 100

   400V1= 1600

   V1= 4 ml

**Lampiran 15. Hasil Analisis Sidik Keragaman Antioksidan**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T2 | 84,57 | 84,58 | 84,59 | 253,74 | 84,58 | .01000 |
| T3 | 83,24 | 83,26 | 83,25 | 249,75 | 83,25 | .01000 |
| T4 | 62,84 | 62,83 | 62,85 | 188,52 | 62,84 | .01000 |
| T5 | 61,87 | 61,88 | 61,89 | 185,64 | 61,88 | .01000 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 1397.890 | 3 | 465.963 | 4.660E6 | .000 |
| Within Groups | .001 | 8 | .000 | | |
| Total | 1397.891 | 11 | | | |

## Post Hoc Tests

**Multiple Comparisons**

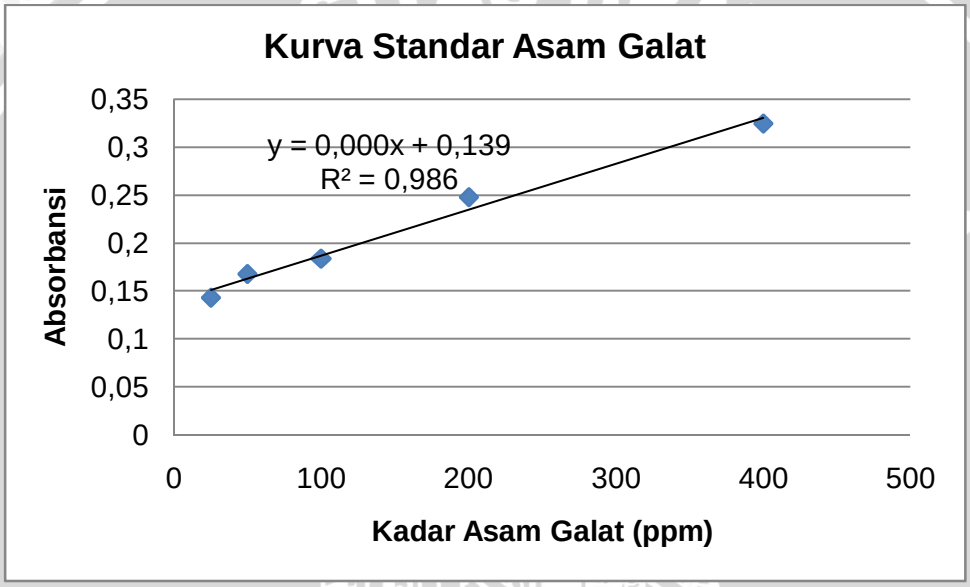
Ulangan
LSD

| (I) Antioksidan | (J) Antioksidan | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | 1.33000* | .00816 | .000 | 1.3112 | 1.3488 |
| | 3 | 21.74000* | .00816 | .000 | 21.7212 | 21.7588 |
| | 4 | 22.70000* | .00816 | .000 | 22.6812 | 22.7188 |
| 2 | 1 | -1.33000* | .00816 | .000 | -1.3488 | -1.3112 |
| | 3 | 20.41000* | .00816 | .000 | 20.3912 | 20.4288 |
| | 4 | 21.37000* | .00816 | .000 | 21.3512 | 21.3888 |
| 3 | 1 | -21.74000* | .00816 | .000 | -21.7588 | -21.7212 |
| | 2 | -20.41000* | .00816 | .000 | -20.4288 | -20.3912 |
| | 4 | .96000* | .00816 | .000 | .9412 | .9788 |
| 4 | 1 | -22.70000* | .00816 | .000 | -22.7188 | -22.6812 |
| | 2 | -21.37000* | .00816 | .000 | -21.3888 | -21.3512 |
| | 3 | -.96000* | .00816 | .000 | -.9788 | -.9412 |

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

**Lampiran 16. Kurva Standar Asam Galat**

| Kadar Asam Galat (ppm) | Absorbansi |
|---|---|
| 25 | 0,143 |
| 50 | 0,168 |
| 100 | 0,184 |
| 200 | 0,248 |
| 400 | 0,325 |



**Lampiran 17. Hasil Analisis Sidik Keragaman Total Fenol**

| Perlakuan | Ulangan | | | Total | Rerata | ST.DEV |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | | | |
| T2 | 96,5 | 98,5 | 99,5 | 294,50 | 98,17 | 1.52753 |
| T3 | 105,5 | 106,5 | 107,5 | 319,50 | 106,50 | 1.00000 |
| T4 | 110,5 | 111,5 | 112,5 | 334,50 | 111,50 | 1.00000 |
| T5 | 154,5 | 155,5 | 156,5 | 466,50 | 155,50 | 1.00000 |

**ANOVA**

Ulangan

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 5922.250 | 3 | 1974.083 | 1.481E3 | .000 |
| Within Groups | 10.667 | 8 | 1.333 | | |
| Total | 5932.917 | 11 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Ulangan
LSD

| (I) Totalfenol | (J) Totalfenol | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -8.33333* | .94281 | .000 | -10.5075 | -6.1592 |
| | 3 | -13.33333* | .94281 | .000 | -15.5075 | -11.1592 |
| | 4 | -57.33333* | .94281 | .000 | -59.5075 | -55.1592 |
| 2 | 1 | 8.33333* | .94281 | .000 | 6.1592 | 10.5075 |
| | 3 | -5.00000* | .94281 | .001 | -7.1741 | -2.8259 |
| | 4 | -49.00000* | .94281 | .000 | -51.1741 | -46.8259 |
| 3 | 1 | 13.33333* | .94281 | .000 | 11.1592 | 15.5075 |
| | 2 | 5.00000* | .94281 | .001 | 2.8259 | 7.1741 |
| | 4 | -44.00000* | .94281 | .000 | -46.1741 | -41.8259 |
| 4 | 1 | 57.33333* | .94281 | .000 | 55.1592 | 59.5075 |
| | 2 | 49.00000* | .94281 | .000 | 46.8259 | 51.1741 |
| | 3 | 44.00000* | .94281 | .000 | 41.8259 | 46.1741 |

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

**Lampiran 18. Pembobotan Tingkat Kepentingan Parameter**

| Parameter | Panelis | | | | | | | | | | | | | | | | | | | | TOTAL | BOBOT | RATA-RATA | RANGKING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | |
| Rendemen | 1 | 2 | 6 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 2 | 5 | 9 | 10 | 8 | 2 | 10 | 2 | 2 | 6 | 78 | 0,07 | 3,90 | 8 |
| Protein | 8 | 9 | 9 | 8 | 4 | 6 | 10 | 10 | 8 | 4 | 6 | 10 | 7 | 2 | 10 | 9 | 3 | 3 | 9 | 7 | 142 | 0,13 | 7,10 | 2 |
| Lemak | 9 | 8 | 7 | 4 | 5 | 5 | 8 | 5 | 5 | 3 | 5 | 6 | 10 | 9 | 7 | 1 | 2 | 4 | 1 | 8 | 112 | 0,10 | 5,60 | 6 |
| Kadar Abu | 3 | 1 | 2 | 1 | 1 | 4 | 7 | 1 | 3 | 2 | 3 | 1 | 6 | 8 | 4 | 4 | 4 | 5 | 5 | 9 | 74 | 0,07 | 3,70 | 10 |
| Kadar Air | 2 | 10 | 1 | 9 | 6 | 3 | 9 | 2 | 2 | 5 | 4 | 4 | 1 | 7 | 9 | 5 | 5 | 6 | 6 | 10 | 106 | 0,10 | 5,30 | 7 |
| Warna | 4 | 4 | 5 | 5 | 7 | 7 | 4 | 7 | 9 | 6 | 7 | 7 | 2 | 5 | 5 | 8 | 9 | 10 | 4 | 5 | 120 | 0,11 | 6,00 | 3 |
| Rasa | 10 | 7 | 10 | 10 | 10 | 10 | 6 | 9 | 10 | 10 | 10 | 9 | 5 | 1 | 6 | 10 | 7 | 8 | 10 | 2 | 160 | 0,15 | 8,00 | 1 |
| Tekstur | 6 | 5 | 3 | 6 | 8 | 8 | 5 | 8 | 7 | 8 | 8 | 2 | 8 | 3 | 1 | 6 | 8 | 7 | 3 | 3 | 113 | 0,10 | 5,65 | 5 |
| Aroma | 5 | 6 | 4 | 7 | 9 | 9 | 3 | 6 | 6 | 9 | 9 | 3 | 3 | 4 | 2 | 7 | 6 | 9 | 7 | 4 | 118 | 0,11 | 5,90 | 4 |
| TBA | 7 | 3 | 8 | 2 | 1 | 1 | 2 | 4 | 4 | 7 | 1 | 8 | 4 | 6 | 3 | 3 | 1 | 1 | 8 | 1 | 75 | 0,07 | 3,75 | 9 |
| TOTAL | 55 | 55 | 55 | 55 | 53 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 1098 | 1,00 | 54,90 | 55,00 |

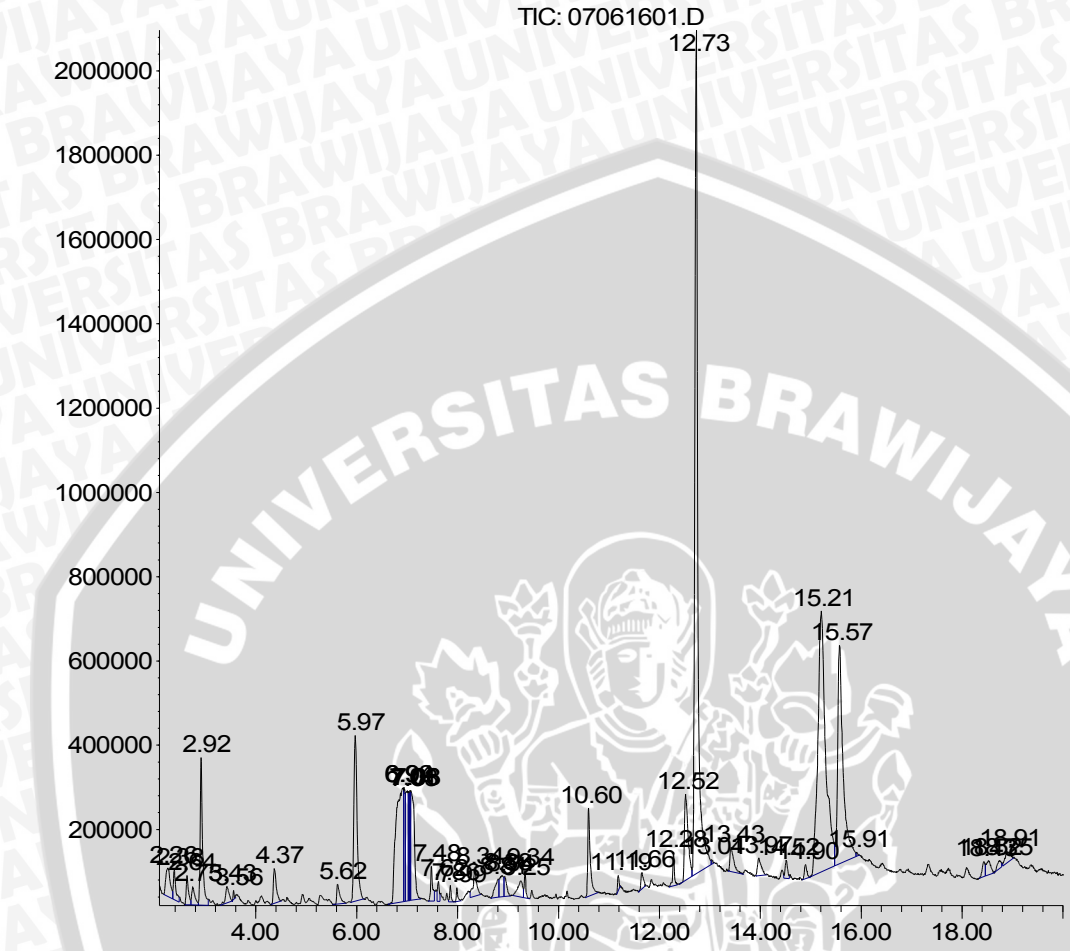
| Parameter | Sampel (rata-rata | | | | | Terbaik | Terjelek | Selisih |
|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T3 | T4 | T5 | | | |
| Rendemen | 78,44 | 75,67 | 73,11 | 70,33 | 68,78 | 68,78 | 78,44 | -9,66 |
| Protein | 18,38 | 19,54 | 21 | 23,63 | 24,5 | 24,5 | 18,38 | 6,12 |
| Lemak | 13 | 16 | 19 | 23 | 26,33 | 13 | 26,33 | -13,33 |
| Kadar Abu | 3 | 3,83 | 4,83 | 5,5 | 6,33 | 3 | 6,33 | -3,33 |
| Kadar Air | 6,5 | 5,5 | 5 | 4,33 | 3,83 | 3,83 | 6,5 | -2,67 |
| Warna | 2,83 | 3,92 | 4,8 | 5,4 | 5,57 | 5,57 | 2,83 | 2,74 |
| Rasa | 2,53 | 3,82 | 4,77 | 5,53 | 6,05 | 6,05 | 2,53 | 3,52 |
| Tekstur | 4,32 | 4,62 | 4,85 | 5,3 | 5,43 | 5,43 | 4,32 | 1,11 |
| Aroma | 3 | 4,28 | 4,9 | 4,9 | 5,48 | 5,48 | 3 | 2,48 |
| TBA | 0,55 | 0,47 | 0,37 | 0,3 | 0,19 | 0,19 | 0,55 | -0,36 |

**Lampiran 19. Hasil Perlakuan Terbaik**

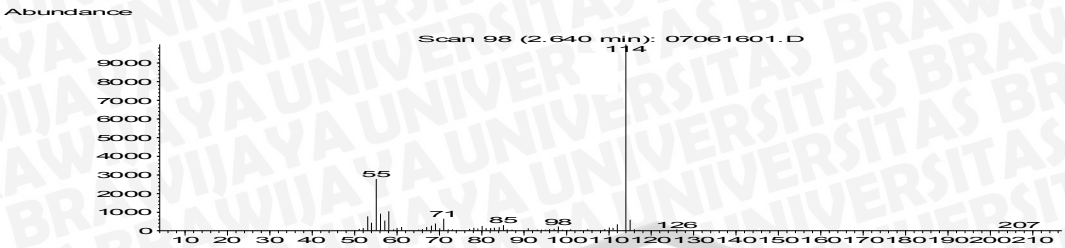
| Parameter | Bobot | T1 | | T2 | | T3 | | T4 | | T5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NE | NP | NE | NP | NE | NP | NE | NP | NE | NP |
| Rendemen | 0,13 | 0 | 0 | 0,29 | 0,04 | 0,55 | 0,07 | 0,84 | 0,11 | 1 | 0,13 |
| Protein | 0,07 | 0 | 0 | 0,19 | 0,01 | 0,43 | 0,03 | 0,86 | 0,06 | 1 | 0,07 |
| Lemak | 0,1 | 1 | 0,1 | 0,77 | 0,08 | 0,55 | 0,05 | 0,25 | 0,02 | 0 | 0 |
| Kadar Abu | 0,13 | 1 | 0,13 | 0,75 | 0,1 | 0,45 | 0,06 | 0,25 | 0,03 | 0 | 0 |
| Kadar Air | 0,1 | 0 | 0 | 0,37 | 0,04 | 0,56 | 0,06 | 0,81 | 0,08 | 1 | 0,1 |
| Warna | 0,09 | 0 | 0 | 0,4 | 0,04 | 0,72 | 0,06 | 0,94 | 0,08 | 1 | 0,09 |
| Rasa | 0,05 | 0 | 0 | 0,37 | 0,02 | 0,64 | 0,03 | 0,85 | 0,04 | 1 | 0,05 |
| Tekstur | 0,1 | 0 | 0 | 0,27 | 0,03 | 0,48 | 0,05 | 0,88 | 0,09 | 1 | 0,1 |
| Aroma | 0,09 | 0 | 0 | 0,52 | 0,05 | 0,77 | 0,07 | 0,77 | 0,07 | 1 | 0,09 |
| TBA | 0,13 | 0 | 0 | 0,22 | 0,03 | 0,5 | 0,07 | 0,69 | 0,09 | 1 | 0,13 |
| | 0,99 | | 0,23 | | 0,42 | | 0,55 | | 0,68 | | 0,76 |

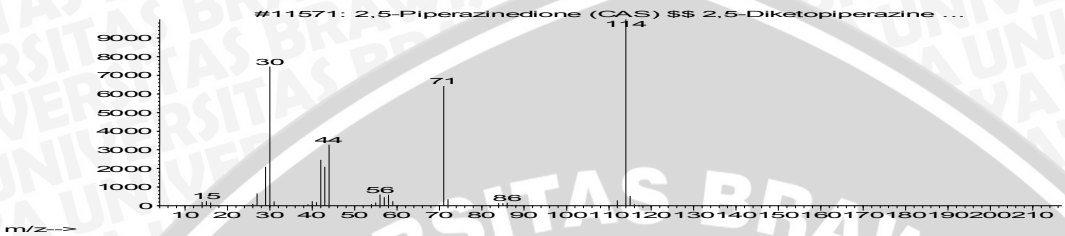
**Lampiran 20. Hasil Uji GC-MS**

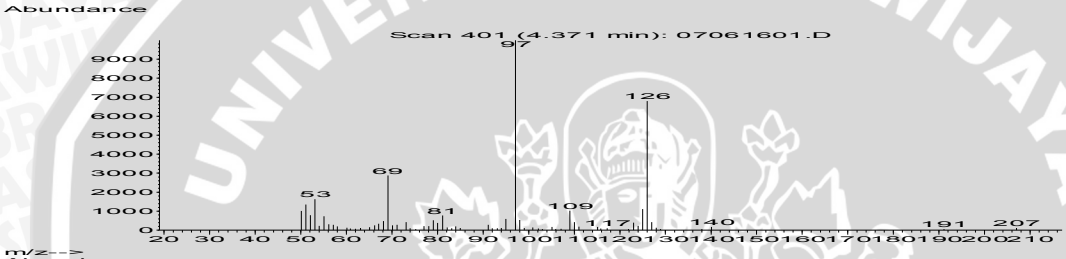
**Laboratorium PT. Gelora Djaja**



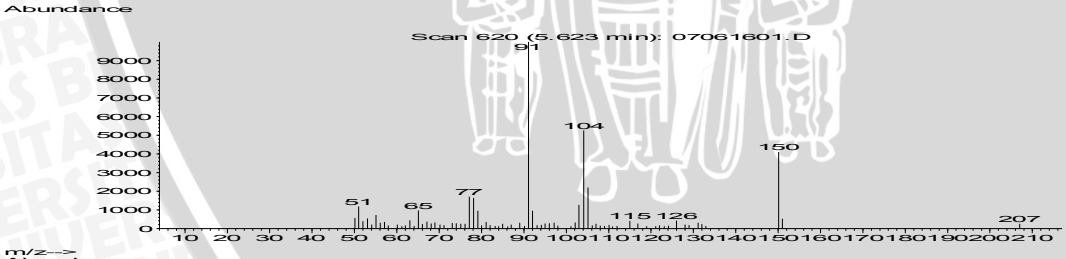
**Laboratorium PT. Gelora Djaja**

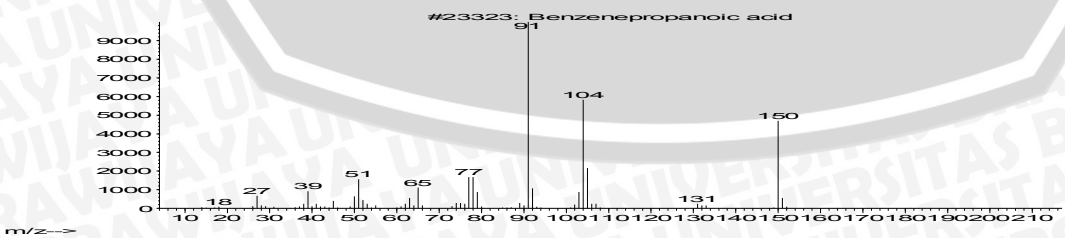


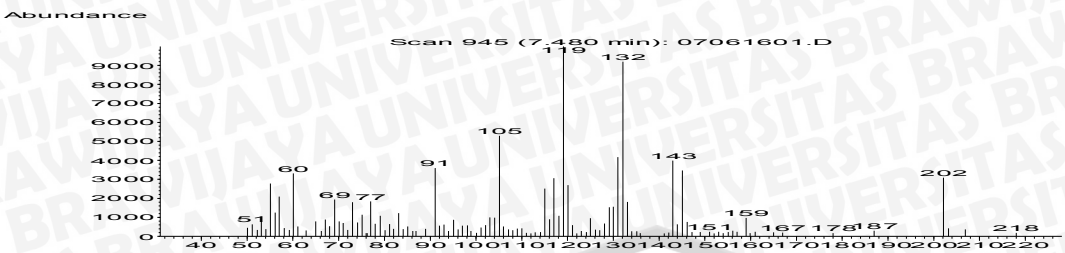



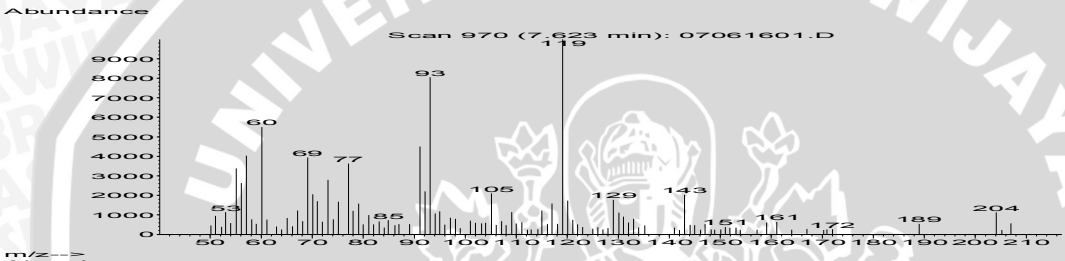


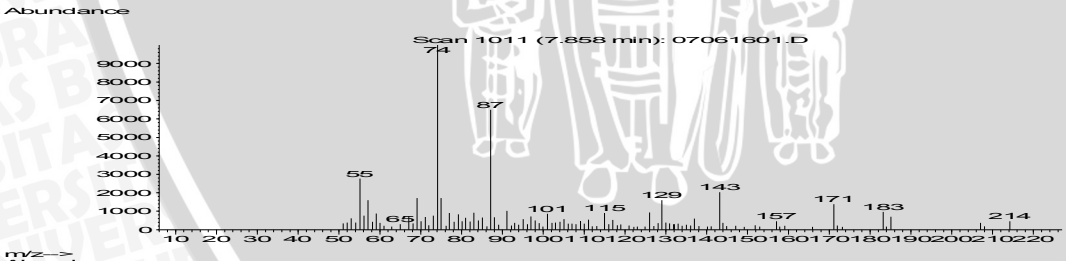


**Laboratorium PT. Gelora Djaja**



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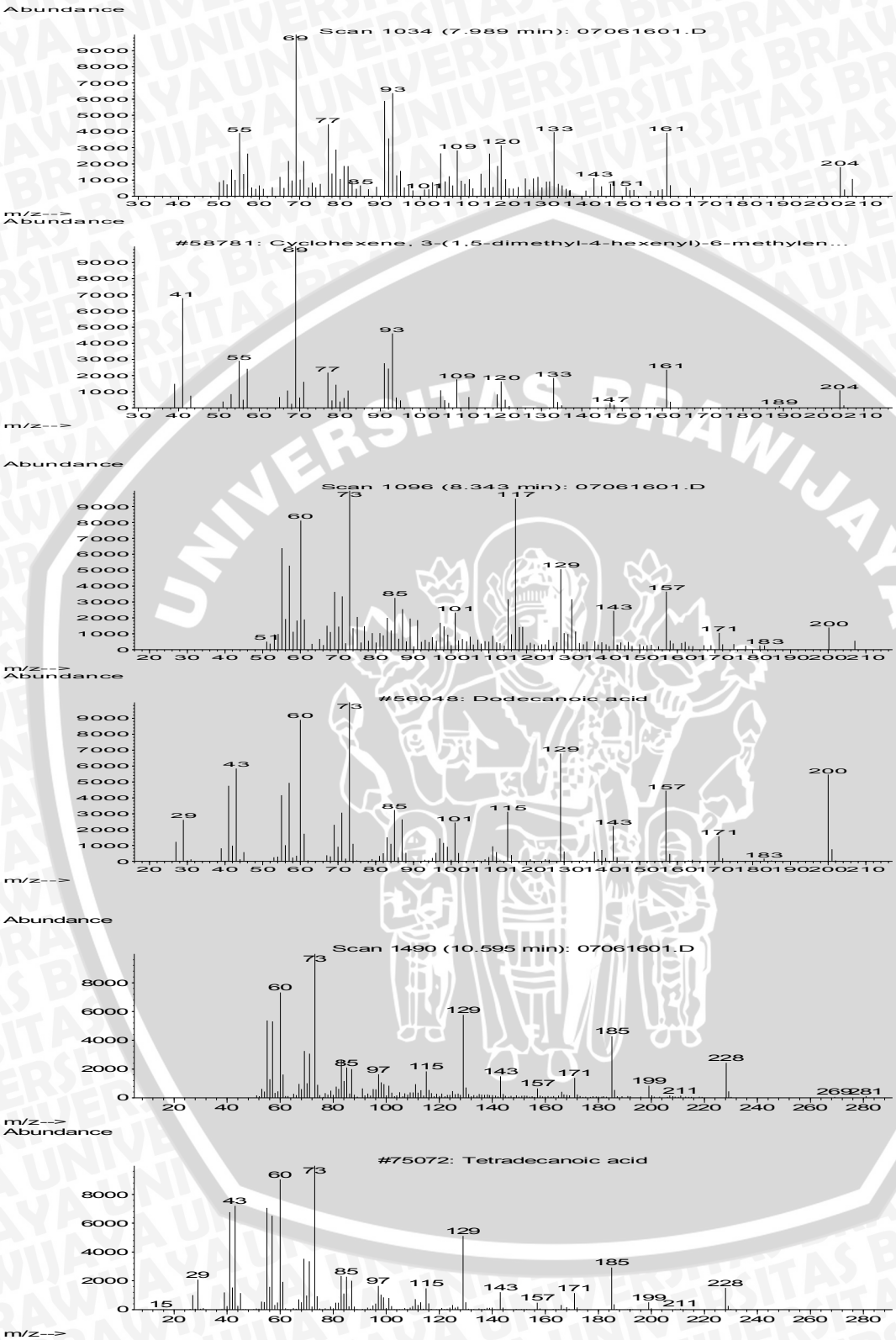

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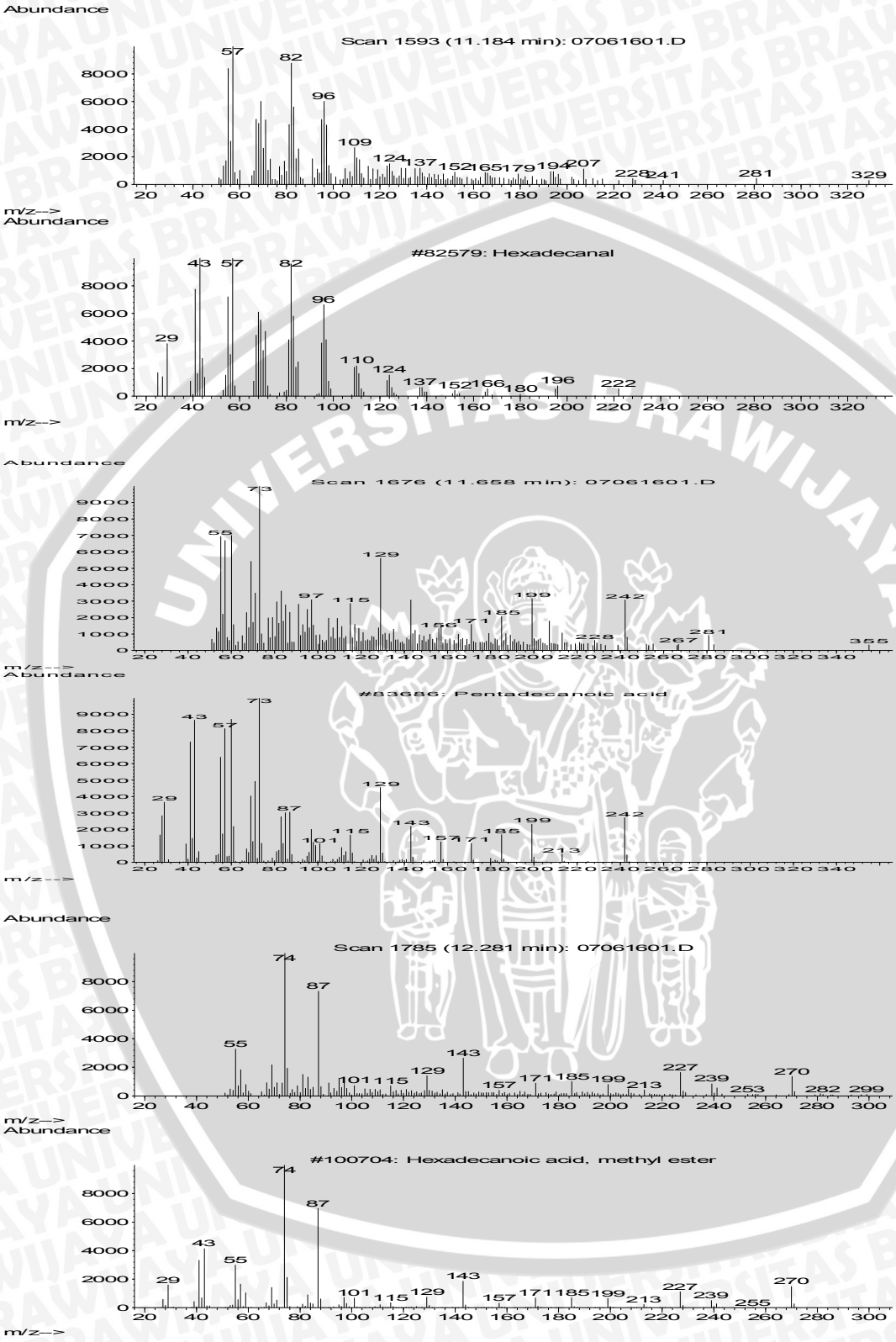

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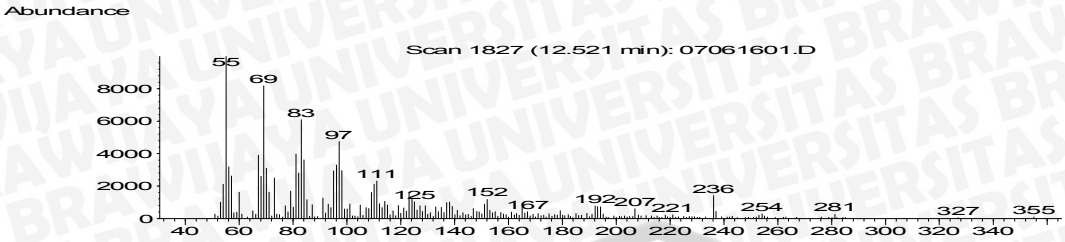
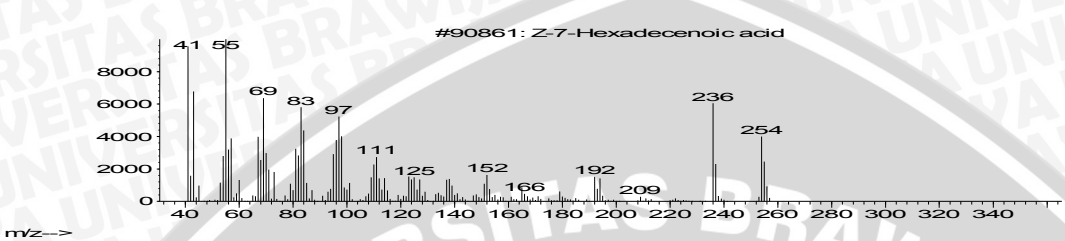
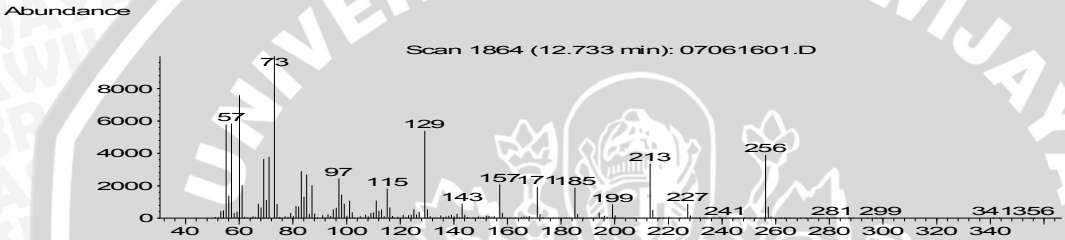
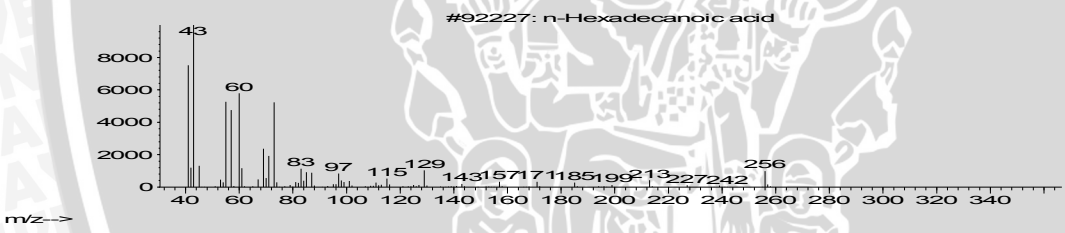
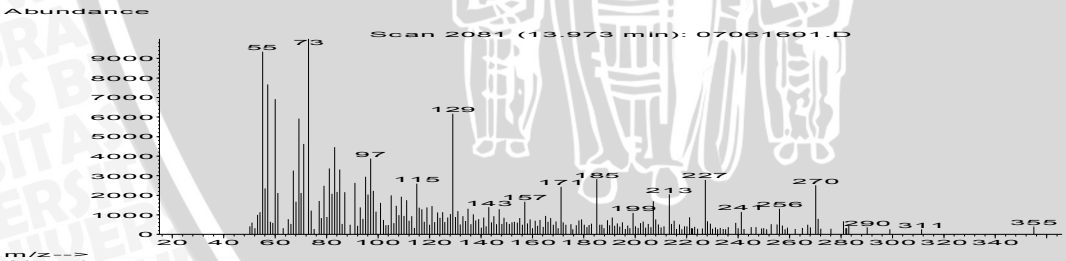
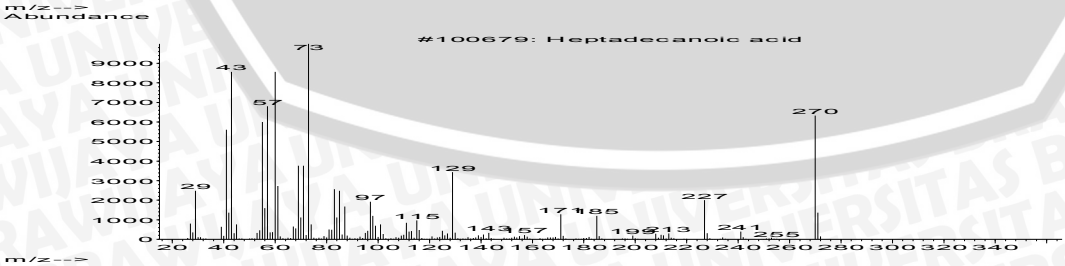


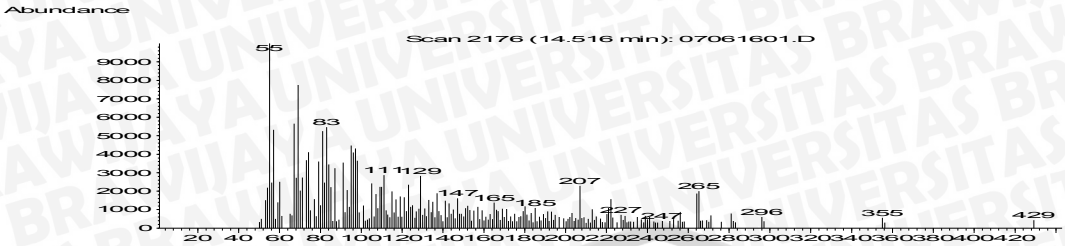



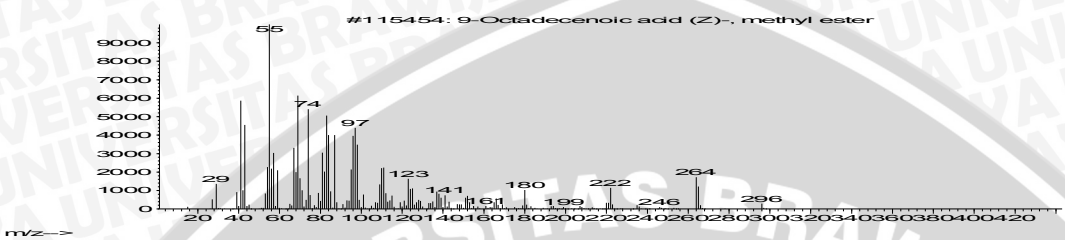



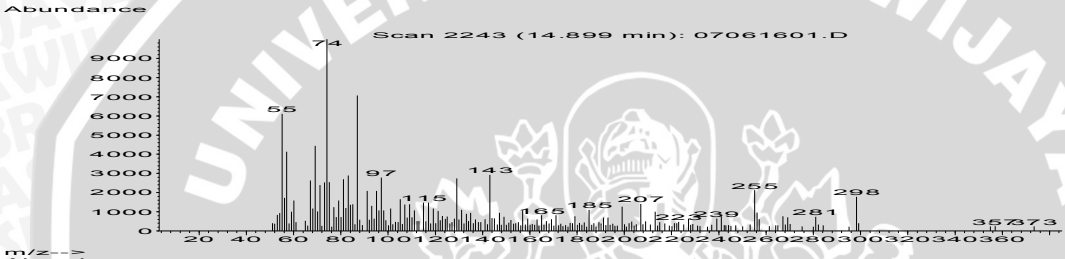



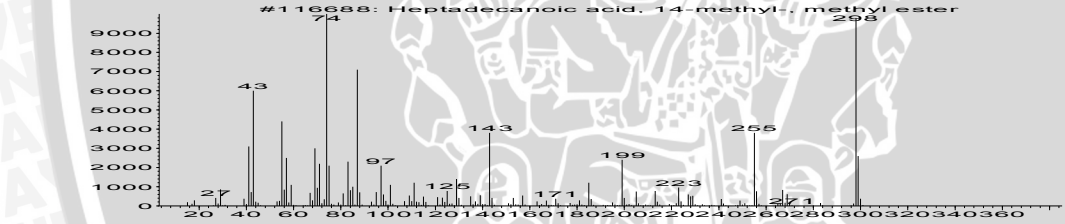



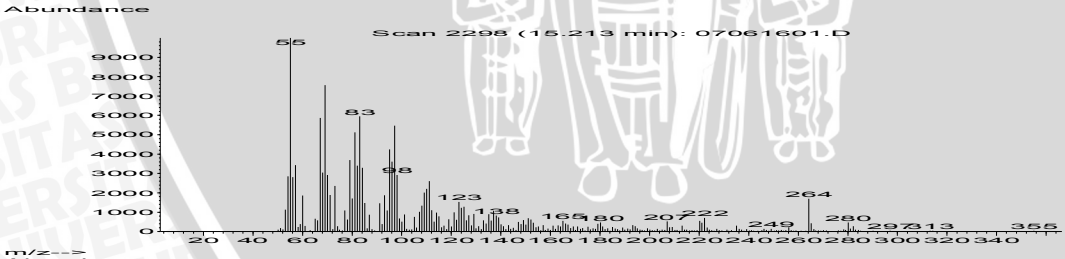
**Laboratorium PT. Gelora Djaja**

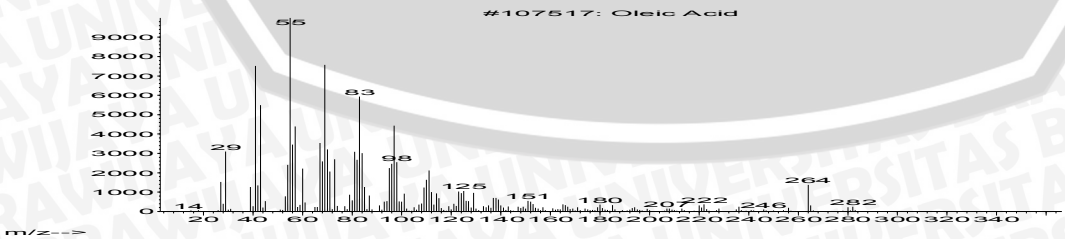


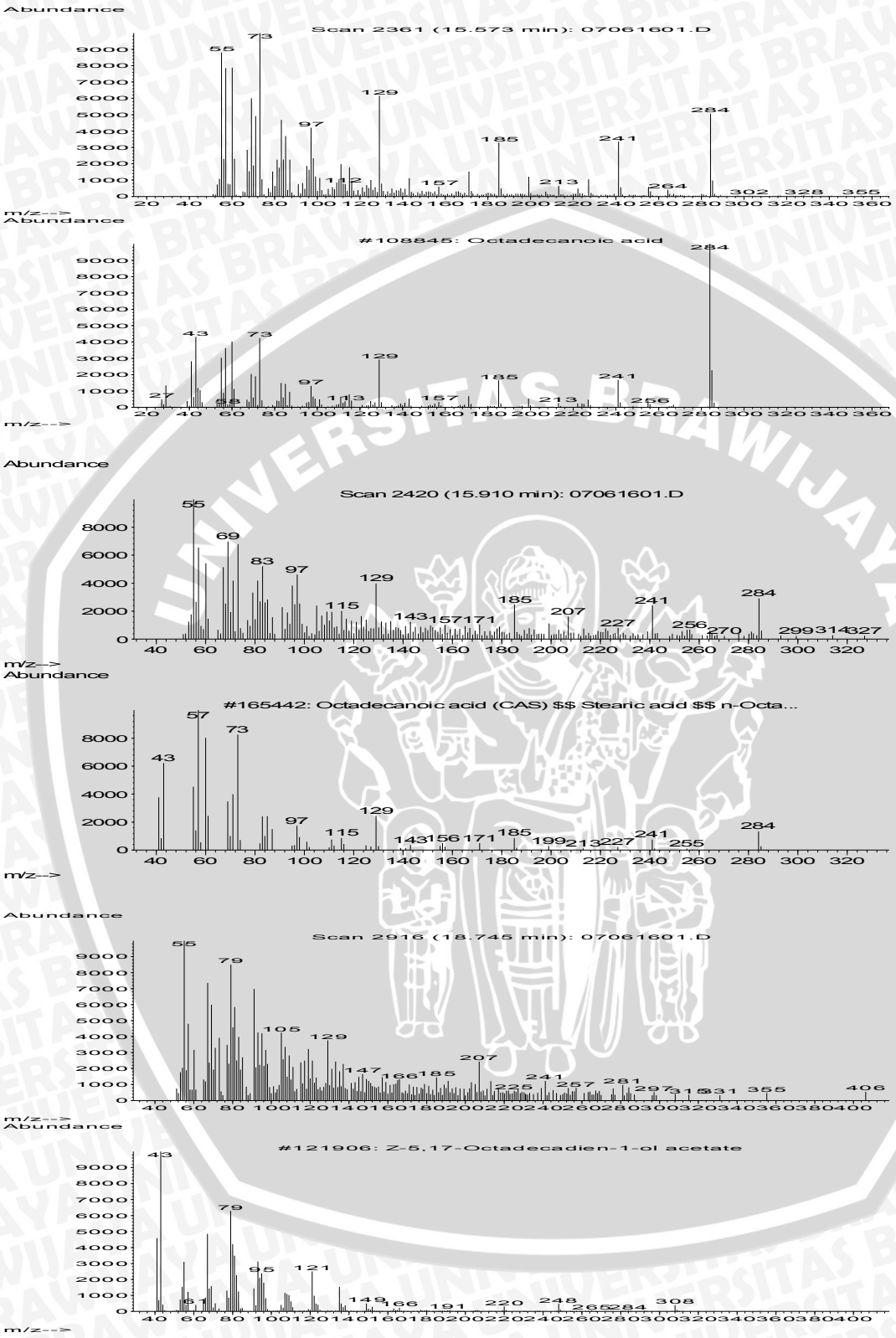



**Laboratorium PT. Gelora Djaja**



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Information from Data File:
File: C:\MSDCHEM\1\DATA\07061601.D
Operator: SRA
Date Acquired: 7 Jun 2016 13:22
Method File: M KENANGA
Sample Name: 24/16/193/MS Kenanga 100%
Misc Info: Dina S - Ponorogo
Vial Number: 8

Search Libraries: C:\Database\NIST02.L Minimum Quality: 85
C:\Database\Wiley275.L Minimum Quality: 85

Unknown Spectrum: Apex
Integration Events: Chemstation Integrator - autoint1.e

| Pk# | RT | Area% | Library/ID | Ref# | CAS# | Qual |
|---|---|---|---|---|---|---|
| 1 | 2.26 | 1.17 | C:\Database\Wiley275.L | | | |
| | | | BUTYRIC ACID-2-D1 | 3797 | 000000-00-0 | 45 |
| | | | 1,2,3-Propanetriol (CAS) $$ Gly... | 4512 | 000056-81-5 | 45 |
| | | | 1,2,3-Propanetriol (CAS) $$ Gly... | 4508 | 000056-81-5 | 39 |
| 2 | 2.38 | 0.67 | C:\Database\Wiley275.L | | | |
| | | | VALERALDEHYDE $$ N-PENTANAL $$ ... | 3492 | 000110-62-3 | 32 |
| | | | 1-Propanaminium, 2-[(aminocarbo... | 79899 | 000590-63-6 | 23 |
| | | | Pentanal (CAS) $$ n-Pentanal $$... | 3287 | 000110-62-3 | 23 |
| 3 | 2.64 | 0.64 | C:\Database\Wiley275.L | | | |
| | | | 2,5-Piperazinedione (CAS) $$ 2,... | 11571 | 000106-57-0 | 86 |
| | | | Glycine, anhydride (CAS) $$ Gly... | 21636 | 004202-74-8 | 78 |
| | | | N1,N1-Dimethyl-N2-n-propylforma... | 12037 | 000000-00-0 | 56 |
| 4 | 2.75 | 0.54 | C:\Database\Wiley275.L | | | |
| | | | 2,5-DIMETHYL-4-HYDROXY-3(2H)-FU... | 18956 | 003658-77-3 | 64 |
| | | | Thiophene, 2-methoxy-5-methyl- ... | 18923 | 031053-55-1 | 58 |
| | | | Furan, 2-methyl-5-(methylthio)-... | 18925 | 013678-59-6 | 53 |
| 5 | 2.92 | 3.35 | C:\Database\Wiley275.L | | | |
| | | | 2,4(1H,3H)-Pyrimidinedione, 5-m... | 17424 | 000065-71-4 | 56 |
| | | | 2,4(1H,3H)-Pyrimidinedione, 5-m... | 17422 | 000065-71-4 | 50 |
| | | | 1,2,3-Benzenetriol (CAS) $$ 1,2... | 17521 | 000087-66-1 | 50 |
| 6 | 3.43 | 0.54 | C:\Database\Wiley275.L | | | |
| | | | 3,4-Furandiol, tetrahydro-, tra... | 8159 | 022554-74-1 | 42 |
| | | | Xylitol (CAS) $$ Xylite $$ pent... | 36919 | 000087-99-0 | 32 |
| | | | 2,3,4,5-TETRAHYDROXYPENTANAL-(1) | 34925 | 000000-00-0 | 23 |

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| | | | | |
|---|---|---|---|---|
| 7 | 3.56 | 0.08 | C:\Database\Wiley275.L | |
| | | | 4H-Pyran-4-one, 2,3-dihydro-3,5... | 30618 028564-83-2 80 |
| | | | 2,3-DIHYDRO-3,5-DIHYDROXY-6-MET... | 30630 000000-00-0 59 |
| | | | 4H-Pyran-4-one, 2,3-dihydro-3,5... | 30617 028564-83-2 59 |
| 8 | 4.37 | 0.93 | C:\Database\NIST02.L | |
| | | | 2-Furancarboxaldehyde, 5-(hydro... | 10771 000067-47-0 91 |
| | | | 2-Furancarboxaldehyde, 5-(hydro... | 10770 000067-47-0 62 |
| | | | Bicyclo[3.3.1]nonan-1-ol | 17996 015158-56-2 43 |
| 9 | 5.62 | 0.56 | C:\Database\NIST02.L | |
| | | | Benzenepropanoic acid | 23323 000501-52-0 96 |
| | | | Benzenepropanoic acid | 23324 000501-52-0 95 |
| | | | Benzenepropanoic acid | 23322 000501-52-0 91 |
| 10 | 5.98 | 5.02 | C:\Database\Wiley275.L | |
| | | | Isothiazole, 3,5-dimethyl- (CAS... | 11325 024260-24-0 38 |
| | | | Cyclohexanone, 5-methyl-2-(1-me... | 40236 000491-07-6 38 |
| | | | 1,2-Butanediol, 1-(2-furyl)- (C... | 41869 004208-60-0 32 |
| 11 | 6.92 | 7.75 | C:\Database\Wiley275.L | |
| | | | Xanthosine (CAS) $$ Xanthine ri... | 164615 000146-80-5 40 |
| | | | Cyclohexanol, 4-methyl- (CAS) $... | 12321 000589-91-3 22 |
| | | | BUTYL 2-OXYPROPYL NITROSAMINE | 43545 000000-00-0 22 |
| 12 | 6.94 | 1.40 | C:\Database\Wiley275.L | |
| | | | TRANS-CYCLOPENTANE-1,3-DIOL-2,2... | 7651 056772-13-5 27 |
| | | | HEXANOL-4-D2 | 7740 053778-67-9 27 |
| | | | Cyclopentanol (CAS) $$ Hydroxyc... | 3428 000096-41-3 25 |
| 13 | 7.01 | 2.62 | C:\Database\Wiley275.L | |
| | | | HEXANOL-4-D2 | 7740 053778-67-9 35 |
| | | | Cyclopentanol (CAS) $$ Hydroxyc... | 3428 000096-41-3 25 |
| | | | 6,6-DIDEUTERO-NONEN-1-OL-3 | 29881 022381-85-7 25 |
| 14 | 7.03 | 0.81 | C:\Database\Wiley275.L | |
| | | | HEXANOL-4-D2 | 7740 053778-67-9 35 |
| | | | 6,6-DIDEUTERO-NONEN-1-OL-3 | 29881 022381-85-7 25 |
| | | | 1,2-Epithio-3-hexanol | 21802 000000-00-0 22 |
| 15 | 7.06 | 1.12 | C:\Database\Wiley275.L | |
| | | | HEXANOL-4-D2 | 7740 053778-67-9 35 |
| | | | Cyclopentanol (CAS) $$ Hydroxyc... | 3428 000096-41-3 25 |
| | | | 1,2-Epithio-3-hexanol | 21802 000000-00-0 22 |

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16 7.07 3.83 C:\Database\Wiley275.L
HEXANOL-4-D2 7740 053778-67-9 35
Cyclopentanol (CAS) $$ Hydroxyc... 3428 000096-41-3 25
6,6-DIDEUTERO-NONEN-1-OL-3 29881 022381-85-7 17

17 7.48 0.65 C:\Database\NIST02.L
Benzene, 1-(1,5-dimethyl-4-hexe... 57454 000644-30-4 95
Benzene, 1-(1,5-dimethyl-4-hexe... 57453 000644-30-4 86
Benzene, 1-(1,5-dimethyl-4-hexe... 57455 000644-30-4 81

18 7.62 0.34 C:\Database\Wiley275.L
.ALPHA.-ZINGIBERENE 89694 000495-60-3 91
1H-3a,7-Methanoazulene, 2,3,4,7... 89299 000469-61-4 60
1H-3a,7-Methanoazulene, 2,3,4,7... 89294 000469-61-4 60

19 7.86 0.22 C:\Database\Wiley275.L
Dodecanoic acid, methyl ester (... 99780 000111-82-0 95
Dodecanoic acid, methyl ester (... 99793 000111-82-0 91
Dodecanoic acid, methyl ester (... 99788 000111-82-0 86

20 7.99 0.19 C:\Database\NIST02.L
Cyclohexene, 3-(1,5-dimethyl-4-... 58781 020307-83-9 96
Cyclohexene, 3-(1,5-dimethyl-4-... 58776 020307-83-9 95
1,6,10-Dodecatriene, 7,11-dimet... 58731 028973-97-9 49

21 8.34 0.89 C:\Database\NIST02.L
Dodecanoic acid 56048 000143-07-7 95
Dodecanoic acid 56046 000143-07-7 90
Dodecanoic acid 56047 000143-07-7 78

22 8.81 0.61 C:\Database\Wiley275.L
beta-(N-methoxy-N-methylamino)-... 59603 082004-58-8 35
Benzene, ethynyl- (CAS) $$ Phen... 7898 000536-74-3 30
Benzene, ethynyl- (CAS) $$ Phen... 7904 000536-74-3 30

23 8.88 0.80 C:\Database\Wiley275.L
Benzene, ethynyl- (CAS) $$ Phen... 7902 000536-74-3 38
Benzene, ethynyl- (CAS) $$ Phen... 7901 000536-74-3 27
2H-Pyran, tetrahydro-2-[(1-meth... 45238 001927-57-7 27

24 8.94 0.51 C:\Database\Wiley275.L
beta-(N-methoxy-N-methylamino)-... 59603 082004-58-8 35
Benzene, ethynyl- (CAS) $$ Phen... 7901 000536-74-3 30
Benzene, ethynyl- (CAS) $$ Phen... 7900 000536-74-3 27

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25 9.25 0.74 C:\Database\Wiley275.L
D-Glucuronic acid (CAS) $$ Gluc... 77453 006556-12-3 32
3-Chloro-2-methoxy-6-methyltetr... 48427 068258-38-8 14
3,3,5,5-D4-CIS-1,2-CYCLOHEXANED... 13336 053897-44-2 12

26 9.34 0.42 C:\Database\Wiley275.L
3-ACETYLAMINOTHIENO(2,3-B)PYRID... 75620 026579-55-5 38
5-AMINO-INDANE $$ 5-AMINOINDAN 22576 000000-00-0 30
Benzaldehyde, ethenyl- (CAS) $$... 22101 043145-54-6 27

27 10.60 2.11 C:\Database\NIST02.L
Tetradecanoic acid 75072 000544-63-8 99
Tetradecanoic acid 75069 000544-63-8 96
Tetradecanoic acid 75071 000544-63-8 95

28 11.18 0.18 C:\Database\NIST02.L
Hexadecanal 82579 000629-80-1 94
Octadecanal 99447 000638-66-4 91
Oxirane, hexadecyl- 99460 007390-81-0 91

29 11.66 0.37 C:\Database\NIST02.L
Pentadecanoic acid 83686 001002-84-2 99
Pentadecanoic acid 83683 001002-84-2 94
1,2,3,4-Tetrahydro-3-methyl-9H-... 55588 014961-29-6 64

30 12.28 0.55 C:\Database\NIST02.L
Hexadecanoic acid, methyl ester 100704 000112-39-0 98
Hexadecanoic acid, methyl ester 100709 000112-39-0 98
Pentadecanoic acid, 14-methyl-,... 100724 005129-60-2 97

31 12.52 2.90 C:\Database\NIST02.L
Z-7-Hexadecenoic acid 90861 1000130-90-8 99
Hexadecenoic acid, Z-11- 90865 002416-20-8 99
13-Borabicyclo[7.3.0]tridecane,... 79886 1000156-41-7 70

32 12.73 23.31 C:\Database\NIST02.L
n-Hexadecanoic acid 92227 000057-10-3 95
n-Hexadecanoic acid 92226 000057-10-3 93
n-Hexadecanoic acid 92228 000057-10-3 91

33 13.04 0.06 C:\Database\NIST02.L
n-Hexadecanoic acid 92228 000057-10-3 98
1,2-Benzisothiazole, 3-(hexahyd... 96530 309735-29-3 91
n-Hexadecanoic acid 92226 000057-10-3 76

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34 13.42 0.87 C:\Database\Wiley275.L
9-Octadecenoic acid (Z)- (CAS) ... 163703 000112-80-1 70
Thiosulfuric acid (H2S2O3), S-(... 42909 002937-53-3 70
8-Acetyl-3,3-epoxymethano-6,6,7... 121785 091186-43-5 60

35 13.97 0.63 C:\Database\NIST02.L
Heptadecanoic acid 100679 000506-12-7 98
Heptadecanoic acid 100678 000506-12-7 97
Heptadecanoic acid 100677 000506-12-7 93

36 14.52 0.41 C:\Database\NIST02.L
9-Octadecenoic acid (Z)-, methy... 115454 000112-62-9 86
8-Octadecenoic acid, methyl est... 115456 026528-50-7 86
11-Octadecenoic acid, methyl ester 115447 052380-33-3 86

37 14.90 0.33 C:\Database\NIST02.L
Heptadecanoic acid, 14-methyl-,... 116688 002490-23-5 96
Heptadecanoic acid, 14-methyl-,... 116690 057274-45-0 96
Heptadecanoic acid, 16-methyl-,... 116689 005129-61-3 95

38 15.21 19.00 C:\Database\NIST02.L
Oleic Acid 107517 000112-80-1 99
9-Octadecenoic acid, (E)- 107524 000112-79-8 95
Oleic Acid 107518 000112-80-1 95

39 15.57 11.08 C:\Database\NIST02.L
Octadecanoic acid 108845 000057-11-4 95
Octadecanoic acid 108839 000057-11-4 91
Octadecanoic acid 108843 000057-11-4 90

40 15.91 0.05 C:\Database\Wiley275.L
Octadecanoic acid (CAS) $$ Stea... 165442 000057-11-4 89
Octadecanoic acid (CAS) $$ Stea... 165437 000057-11-4 89
Octadecanoic acid (CAS) $$ Stea... 165445 000057-11-4 56

41 18.44 0.36 C:\Database\Wiley275.L
4-Hexenoic acid, 3-methyl-2,6-d... 41670 056771-77-8 56
4-Hexenoic acid, 3-methyl-2,6-d... 41671 056771-77-8 56
Acetamide, N-methyl-N-[4-[4-met... 123725 000000-00-0 53

42 18.52 0.63 C:\Database\Wiley275.L
DILL ETHER 37971 000000-00-0 38
4(5)-acetyl-2-(2-propyl)-1H-imi... 37305 108512-03-4 35
Tetradecane, 1-bromo- (CAS) $$ ... 158272 000112-71-0 30

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43 18.75 0.26 C:\Database\NIST02.L
Z-5,17-Octadecadien-1-ol acetate 121906 1000131-06-9 98
(7R,8S)-cis-anti-cis-7,8-Epoxyt... 41301 073285-35-5 89
9,12,15-Octadecatrien-1-ol, (Z,... 96963 000506-44-5 86

44 18.91 0.48 C:\Database\Wiley275.L
.epsilon.-Muurolene $$ Naphthal... 89428 030021-46-6 60
Naphthalene, decahydro-1,6-bis(... 89411 054932-90-0 60
2-Naphthalenemethanol, 8-etheny... 89001 003877-79-0 56

Tue Jun 07 13:51:50 2016

Surabaya, 07 Juni 2016

Mengetahui,

Digitally signed by Mohamma d Holil

Dr. Mohammad Holil
*Factory Lab. Manager*

Penanggung jawab Pengujian,

Reo Dewa Kembara 2016.06.08 11:11:24 +07'00'

Reo Dewa Kembara, S.Si
*Factory Lab. Spv.*