**Lampiran 5. Analisis kadar air**

% kadar air = $\frac{Berat awal-berat akhir}{Berat awal}$ X 100 %

**Perhitungan hari ke 7:**

1. Berat awal = 1,5 gram

Berat akhir = 0,89 gram

Berat cawan = 29,88 gram

Berat cawan + berat ikan = 31,38 gram (awal)

Berat cawan + berat ikan = 30,49 gram (akhir)

% kadar air = $\frac{1,5 -0,89}{1,5}$ X 100 % = 40,67%

1. Berat awal = 1,50 gram

Berat akhir = 0,92 gram

Berat cawan = 29,88 gram

Berat cawan + berat ikan = 31,38 gram (awal)

Berat cawan + berat ikan = 30,46 gram (akhir)

% kadar air = $\frac{1,5 -0,92}{1,5}$ X 100 % = 38,67%

 (3) Berat awal = 1,50 gram

Berat akhir = 0,92 gram

Berat cawan = 29,88 gram

Berat cawan + berat ikan = 31,38 gram (awal)

Berat cawan + berat ikan = 30,46 gram (akhir)

% kadar air = $\frac{1,5 -0,92}{1,5}$ X 100 % = 38,67%

**Perhitungan hari ke 8:**

1. Berat awal = 1,50 gram

Berat akhir = 0,94 gram

Berat cawan = 22,43 gram

Berat cawan + berat ikan = 23,95 gram (awal)

Berat cawan + berat ikan = 23,07 gram (akhir)

% kadar air = $\frac{1,50 -0,93}{1,50}$ X 100 % = 37,33%

1. Berat awal = 1,50 gram

Berat akhir = 0,95 gram

Berat cawan = 22,43 gram

Berat cawan + berat ikan = 23,95 gram (awal)

Berat cawan + berat ikan = 23,06 gram (akhir)

% kadar air = $\frac{1,50 -0,95}{1,52}$ X 100 % = 36,67%

 (3) Berat awal = 1,50 gram

Berat akhir = 0,95 gram

Berat cawan = 22,43 gram

Berat cawan + berat ikan = 23,95 gram (awal)

Berat cawan + berat ikan = 23,06 gram (akhir)

% kadar air = $\frac{1,50 -0,95}{1,52}$ X 100 % = 36,67%

**Perhitungan hari ke 9:**

1. Berat awal = 1,5 gram

Berat akhir = 0,97 gram

Berat cawan = 26,85 gram

Berat cawan + berat ikan = 28,35 gram (awal)

Berat cawan + berat ikan = 27,50 gram (akhir)

% kadar air = $\frac{1,5 -0,87}{1,5}$ X 100 % = 35,33%

1. Berat awal = 1,50 gram

Berat akhir = 0,98 gram

Berat cawan = 26,85

Berat cawan + berat ikan = 28,35 gram (awal)

Berat cawan + berat ikan = 34,67 gram (akhir)

% kadar air = $\frac{1,5 -0,98}{1,5}$ X 100 % = 34,67%

 (3) Berat awal = 1,50 gram

Berat akhir = 0,98 gram

Berat cawan = 26,85 gram

Berat cawan + berat ikan = 28,35 gram (awal)

Berat cawan + berat ikan = 27,45 gram (akhir)

% kadar air = $\frac{1,5 -0,98}{1,5}$ X 100 % = 34,67%

**Tabel 6. Uji Organoleptik warna bekasam ikan lele sangkuriang sebelum digoreng**

|  |  |  |  |
| --- | --- | --- | --- |
| **PANELIS** | **KODE SAMPEL**  | **JUMLAH** | **RATA RATA** |
| **Formula 1** | **Formula 2** | **Formula 3** |
| **DA** | **DT** | **DA** | **DT** | **DA** | **DT** | **DA** | **DT** | **DA** | **DT** |
| 1 | 6 | 2.55 | 5 | 2.35 | 3 | 1.87 | 14 | 6.77 | 4.67 | 2.26 |
| 2 | 3 | 1.87 | 4 | 2.12 | 2 | 1.58 | 9 | 5.57 | 3.00 | 1.86 |
| 3 | 3 | 1.87 | 5 | 2.35 | 5 | 2.35 | 13 | 6.56 | 4.33 | 2.19 |
| 4 | 3 | 1.87 | 3 | 1.87 | 4 | 2.12 | 10 | 5.86 | 3.33 | 1.95 |
| 5 | 5 | 2.35 | 3 | 1.87 | 3 | 1.87 | 11 | 6.09 | 3.67 | 2.03 |
| 6 | 3 | 1.87 | 4 | 2.12 | 3 | 1.87 | 10 | 5.86 | 3.33 | 1.95 |
| 7 | 4 | 2.12 | 3 | 1.87 | 3 | 1.87 | 10 | 5.86 | 3.33 | 1.95 |
| 8 | 3 | 1.87 | 5 | 2.35 | 5 | 2.35 | 13 | 6.56 | 4.33 | 2.19 |
| 9 | 3 | 1.87 | 4 | 2.12 | 3 | 1.87 | 10 | 5.86 | 3.33 | 1.95 |
| 10 | 3 | 1.87 | 3 | 1.87 | 3 | 1.87 | 9 | 5.61 | 3.00 | 1.87 |
| 11 | 5 | 2.35 | 4 | 2.12 | 2 | 1.58 | 11 | 6.05 | 3.67 | 2.02 |
| 12 | 4 | 2.12 | 5 | 2.35 | 4 | 2.12 | 13 | 6.59 | 4.33 | 2.20 |
| 13 | 4 | 2.12 | 4 | 2.12 | 4 | 2.12 | 12 | 6.36 | 4.00 | 2.12 |
| 14 | 4 | 2.12 | 3 | 1.87 | 2 | 1.58 | 9 | 5.57 | 3.00 | 1.86 |
| 15 | 5 | 2.35 | 6 | 2.55 | 4 | 2.12 | 15 | 7.02 | 5.00 | 2.34 |
| **JUMLAH** | 58 | 31.17 | 61 | 31.89 | 50 |  29.14  | 169 |  92.20  |  56.33  |  30.73  |
| **RATA** | 3.87 | 2.08 | 4.07 | 2.13 | 3.33 | 1.94 | 11.27 | 6.15 | 3.76 | 2.05 |

**Tabel 6.1 data tabel anava uji organoleptic warna**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sumber Variansi** | **Derajat Bebas (db)**  | **Jumlah Kuadrat (jk)** | **Rata-rata jumlah kuadrat (rjk)** | **F Hitung** | **F Tabel** |
| **5%** | **1%** |
| **Sampel** | 2 | 0.270 | 0.135 | 2.876 tn | 3.34 | 5.45 |
| **Panelis** | 14 | 1.001 | 0.071 | 1.521 tn |   |   |
| **Galat** | 28 | 1.316 | 0.047 |   |  |  |
| **Total** | 44 | 2.587 |  |  |  |  |

**Tabel 7. Uji organoleptik tekstur bekasam ikan lele sangkuriang sebelum digoreng**

|  |  |  |  |
| --- | --- | --- | --- |
| **PANELIS** | **KODE SAMPEL**  | **JUMLAH** | **RATA RATA** |
| **Formula 1** | **Formula 2** | **Formula 3** |
| **DA** | **DT** | **DA** | **DT** | **DA** | **DT** | **DA** | **DT** | **DA** | **DT** |
| 1 | 5 | 2.35 | 5 | 2.35 | 5 | 2.35 | 15 | 7.04 | 5.00 | 2.35 |
| 2 | 3 | 1.87 | 3 | 1.87 | 3 | 1.87 | 9 | 5.61 | 3.00 | 1.87 |
| 3 | 5 | 2.35 | 6 | 2.55 | 3 | 1.87 | 14 | 6.77 | 4.67 | 2.26 |
| 4 | 3 | 1.87 | 3 | 1.87 | 4 | 2.12 | 10 | 5.86 | 3.33 | 1.95 |
| 5 | 4 | 2.12 | 4 | 2.12 | 4 | 2.12 | 12 | 6.36 | 4.00 | 2.12 |
| 6 | 4 | 2.12 | 4 | 2.12 | 3 | 1.87 | 11 | 6.11 | 3.67 | 2.04 |
| 7 | 4 | 2.12 | 5 | 2.35 | 4 | 2.12 | 13 | 6.59 | 4.33 | 2.20 |
| 8 | 4 | 2.12 | 3 | 1.87 | 5 | 2.35 | 12 | 6.34 | 4.00 | 2.11 |
| 9 | 4 | 2.12 | 4 | 2.12 | 5 | 2.35 | 13 | 6.59 | 4.33 | 2.20 |
| 10 | 4 | 2.12 | 3 | 1.87 | 5 | 2.35 | 12 | 6.34 | 4.00 | 2.11 |
| 11 | 4 | 2.12 | 4 | 2.12 | 3 | 1.87 | 11 | 6.11 | 3.67 | 2.04 |
| 12 | 4 | 2.12 | 3 | 1.87 | 3 | 1.87 | 10 | 5.86 | 3.33 | 1.95 |
| 13 | 4 | 2.12 | 4 | 2.12 | 3 | 1.87 | 11 | 6.11 | 3.67 | 2.04 |
| 14 | 4 | 2.12 | 3 | 1.87 | 3 | 1.87 | 10 | 5.86 | 3.33 | 1.95 |
| 15 | 4 | 2.12 | 4 | 2.12 | 4 | 2.12 | 12 | 6.36 | 4.00 | 2.12 |
| **JUMLAH** | 60 | 31.77 | 58 | 31.19 | 57 |  30.96  | 175 |  93.92  |  58.33  |  31.31  |
| **RATA** | 4.00 | 2.12 | 3.87 | 2.08 | 3.80 | 2.06 | 11.67 | 6.26 | 3.89 | 2.09 |

**Tabel 7.2 data tabel anava**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sumber Variansi** | **Derajat Bebas (db)**  | **Jumlah Kuadrat (jk)** | **Rata-rata jumlah kuadrat (rjk)** | **F Hitung** | **F Tabel** |
| **5%** | **1%** |
| **Sampel** | 2 | 0.023 | 0.011 | 0.420 tn | 3.34 | 5.45 |
| **Panelis** | 14 | 0.687 | 0.049 | 1.803 tn |   |   |
| **Galat** | 28 | 0.763 | 0.027 |   |  |  |
| **Total** | 44 | 1.473 |  |  |  |  |

**Tabel 8. Analisis kadar Protein (Kjeldahl)**

**Tabel 8.1. Analisis kadar protein (kjeldahl) ulangan ke 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Kode sample | Berat sample (g) | Vol. NaOH baku (ml) | Kadar Protein (%) |
| 1 | 30%, 10% | 1,053 | 19,10 | 21,8335 |
| 2 | 30%, 15% | 1,285 | 18,30 | 23,3966 |
| 3 | 30%, 20% | 1,154 | 18,40 | 25,2863 |
| 4 | 35%, 10% | 1,223 | 18,60 | 22,4137 |
| 5 | 35%, 15% | 1,176 | 18,50 | 24,0614 |
| 6 | 35%, 20% | 1,136 | 18,30 | 26,4654 |
| 7 | 40%, 10% | 1,144 | 18,70 | 23,1885 |
| 8 | 40%, 15% | 1,108 | 18,60 | 24,7400 |
| 9 | 40%, 20% | 1,117 | 18,40 | 26,1239 |
|  |  |  |  |  |

Contoh Perhitungan :

Pembakuan NaOH : - Berat H2C2O4.2H2O = 0,070 g

* BE H2C2O4.2H2O = 63,035
* Vol. Na Tio sulfat = 11,00mL

Normalitas NaOH = $\frac{0,070 X 1000}{63,035 X 11,00}$ = 0,1010 N

Berat Sample = 1,053 g

Faktor pengenceran = 100/10 = 10x

Vol. Titrasi blanko = 21,70 mL

Vol. Titrasi sample = 19,10 mL

Ar. Nitrogen = 14,008

Kadar Protein (%, b/b) = $\frac{10 x \left(21,70-19,10\right)x 0,1010x 14,008 x 6,25}{1,053 x 1000}x 100\%$

 = 21,8335%

**Tabel 8.2 Analisis kadar Protein (Kjeldahl) ulangan ke 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Kode sample | Berat sample (g) | Vol. NaOH baku (ml) | Kadar Protein (%) |
| 1 | 30%, 10% | 1,021 | 19,20 | 21,6547 |
| 2 | 30%, 15% | 1,123 | 18,70 | 23,6221 |
| 3 | 30%, 20% | 1,117 | 18,50 | 25,3323 |
| 4 | 35%, 10% | 1,158 | 18,70 | 22,9082 |
| 5 | 35%, 15% | 1,091 | 18,70 | 24,3150 |
| 6 | 35%, 20% | 1,104 | 18,40 | 26,4315 |
| 7 | 40%, 10% | 1,149 | 18,60 | 23,8572 |
| 8 | 40%, 15% | 1,187 | 18,40 | 24,5833 |
| 9 | 40%, 20% | 1,153 | 18,30 | 26,0752 |

Contoh Perhitungan :

Pembakuan NaOH : - Berat H2C2O4.2H2O = 0,070 g

* BE H2C2O4.2H2O = 63,035
* Vol. Na Tio sulfat = 11,00mL

Normalitas NaOH = $\frac{0,070 X 1000}{63,035 X 11,00}$ = 0,1010 N

Berat Sample = 1,021 g

Faktor pengenceran = 100/10 = 10x

Vol. Titrasi blanko = 21,70 mL

Vol. Titrasi sample = 19,20 mL

Ar. Nitrogen = 14,008

Kadar Protein (%, b/b) = $\frac{10 x \left(21,70-19,20\right)x 0,1010x 14,008 x 6,25}{1,021 x 1000}x 100\%$

 = 21,6547%

**Tabel 8.3 Analisis kadar Protein (Kjeldahl) ulangan ke 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Kode sample | Berat sample (g) | Vol. NaOH baku (ml) | Kadar Protein (%) |
| 1 | 30%, 10% | 1,035 | 19,30 | 20,5045 |
| 2 | 30%, 15% | 1,143 | 18,40 | 25,5297 |
| 3 | 30%, 20% | 1,127 | 18,30 | 26,6767 |
| 4 | 35%, 10% | 1,165 | 18,50 | 24,2885 |
| 5 | 35%, 15% | 1,097 | 18,40 | 26,6002 |
| 6 | 35%, 20% | 1,113 | 18,20 | 27,8068 |
| 7 | 40%, 10% | 1,152 | 18,30 | 26,0978 |
| 8 | 40%, 15% | 1,189 | 18,50 | 23,7983 |
| 9 | 40%, 20% | 1,154 | 18,10 | 27,5851 |

Contoh Perhitungan :

Pembakuan NaOH : - Berat H2C2O4.2H2O = 0,070 g

* BE H2C2O4.2H2O = 63,035
* Vol. Na Tio sulfat = 11,00mL

Normalitas NaOH = $\frac{0,070 X 1000}{63,035 X 11,00}$ = 0,1010 N

Berat Sample = 1,021 g

Faktor pengenceran = 100/10 = 10x

Vol. Titrasi blanko = 21,70 mL

Vol. Titrasi sample = 19,30 mL

Ar. Nitrogen = 14,008

Kadar Protein (%, b/b) = $\frac{10 x \left(21,70-19,30\right)x 0,1010x 14,008 x 6,25}{1,035 x 1000}x 100$

 = 20,5045%

**Tabel 8.4 Hasil analisis kadar protein**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Faktor a | Faktor b  | Kelompok Ulangan | TotalPerlakuan | Rata-rata |
| 1 | 2 | 3 |
| a1  | b1 | 21.8335 | 21.6517 | 20.5045 | 63.9897 | 21.3299 |
| b2 | 23.3966 | 23.6221 | 25.5297 | 72.5484 | 24.1828 |
| b3 | 25.2863 | 25.3323 | 26.6767 | 77.2953 | 25.7651 |
|  |
| a2 | b1 | 22.4137 | 22.9082 | 24.2885 | 69.6104 | 23.2035 |
| b2 | 24.0614 | 24.3150 | 26.6002 | 74.9766 | 24.9922 |
| b3 | 26.4654 | 26.4315 | 27.8068 | 80.7037 | 26.9012 |
|  |
| a3 | b1 | 23.1885 | 23.8572 | 26.0978 | 73.1435 | 24.3812 |
| b2 | 24.7400 | 24.5833 | 23.7983 | 73.1216 | 24.3739 |
| b3 | 26.1239 | 26.0752 | 27.5851 | 79.7842 | 26.5947 |
| Total |   | 217.5093 | 218.7765 | 228.8876 | 665.1734 | 221.7245 |

**8.5 Perhitungan kadar protein**

Faktor koreksi (FK) = $\frac{(665,1734)2}{27}$ = 16.387,2464

Jumlah Kuadrat Total (JKT) = (21,8335)2+ (21,6517)2 + ….(27,5851)2 – 16.387,2464

 = 89,7611

Jumlah Kuadran Kelompok = $\frac{\left(217,5093\right)2+\left(218,7765\right)2+\left(228,8876\right)2}{9}$ – 16.387,2464 = 8,6409

Jumlah Kuadran (A) = $\frac{\left(63,9897+72,5484+772953\right)2+….+\left(73,1435+73,1216+79,7842\right)2}{9}$ – 16.387,2464 =10,4101

Jumlah kuadran (B) = $\frac{\left(63,9897+69,6104+73,1435\right)2+…. +\left(77,2953+80,7037+79,7842\right)2}{9}$ -16.387,2464

 = 53,719

Jumlah kuadran (AB) = $\frac{\left(63,9897\right)2+\left(72,5484\right)+…+\left(79,7842\right)2}{3}$ – 16.387,2464 - 10,4101- 53,719

 = 6,9443

JK Galat = 89,7611-8,6409-10,4101-53,719-6,9443 = 10,0468

**Tabel 8.6. Tabel Anava untuk analisis kadar protein**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ANAVA** |  |  |  |  |  |   |  |
| Sumber | db | JK | KT | F hitung | F Tabel |
| Keragaman | 5% |
| kelompok | 2 | 8.641 |   |   |   |   |
| perlakuan | 8 | 71.073 |   |   |   |   |
| Faktor A | 2 | 10.410 | 5.2051 | 8.289 | \*\* | 3.63 |
| Faktor B | 2 | 53.719 | 26.8595 | 42.776 | \*\* | 3.63 |
| Interaksi AXB | 4 | 6.944 | 1.7361 | 2.765 | tn | 3.01 |
| Galat | 16 | 10.047 | 0.6279 |   |  |   |
| Total | 26 |   |   |   |   |   |

**Tabel 8.7. Uji jarak Duncan bekasam ikan lele sangkuriang**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| UJI LANJUT DUNCAN FAKTOR A | Sy = | 0.264 |  |  |  |  |
| SSR | LSR | Rata-rata Perlakuan |   | Perlakuan |   |   |   |   | Taraf nyata |
| 5% | 5% | kode  | rata-rata | 1 |   | 2 |   | 3 | 5% |
|   |   | a1 | 23.759 |   |   |   |   |   | a |
| 3.00  |  0.792  | a2 | 25.032 | 1.273 | \*\* |   |   |   | bc |
| 3.15  |  0.832  | a3 | 25.117 | 1358 | \*\* | 0.085 | tn |   | c |

Uji Lanjut Duncan Faktor B Sy= 0,264

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SSR | LSR | Rata-rata Perlakuan |   | Perlakuan |   |   |   |   | Taraf nyata |
| 5% | 5% | kode  | rata-rata | 1 |   | 2 |   | 3 | 5% |
|   |   | b1 | 22.972 |   |   |   |   |   | a |
| 3.00  |  0.792  | b2 | 24.516 | 1.545 | \*\* |   |   |   | b |
| 3.15  | 0.832 | b3 | 26.420 | 3.449 | \*\* | 1.904 | \*\* |   | c |

**Tabel 9.Analisis kadar asam laktat bekasam ikan lele sangkuriang**

**Tabel 9.1 Analisis kadar asam laktat ulangan ke 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Kode sample | Berat sample (g) | Vol. NaOH baku (ml) | Kadar asam laktat (%) |
| 1 | 30%, 10% | 1,045 | 1,00 | 0,8699 |
| 2 | 30%, 15% | 1,185 | 0,90 | 0,6904 |
| 3 | 30%, 20% | 1,183 | 0,80 | 0,6147 |
| 4 | 35%, 10% | 1,190 | 0,90 | 0,6875 |
| 5 | 35%, 15% | 1,120 | 0,70 | 0,5681 |
| 6 | 35%, 20% | 1,183 | 0,60 | 0,4610 |
| 7 | 40%, 10% | 1,178 | 0,80 | 0,6173 |
| 8 | 40%, 15% | 1,205 | 0,60 | 0,4526 |
| 9 | 40%, 20% | 1,117 | 0,50 | 0,4069 |

Contoh Perhitungan :

Pembakuan NaOH : - Berat H2C2O4.2H2O = 0,070 g

* BE H2C2O4.2H2O = 63,035
* Vol. Na Tio sulfat = 11,00mL

Normalitas NaOH = $\frac{0,070 X 1000}{63,035 X 11,00}$ = 0,1010 N

Berat Sample = 1,045 g

Vol. Titrasi sample = 1,00 mL

BE asam laktat = 90

Kadar asam laktat (%, b/b) = $\frac{1,0 x 0,1010 x 90}{1,045 x 1000}x 100$

 = 0,8699

**Tabel 9.2 Analisis kadar asam laktat ulangan ke 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Kode sample | Berat sample (g) | Vol. NaOH baku (ml) | Kadar asam laktat (%) |
| 1 | 30%, 10% | 1,170 | 1,10 | 0,8546 |
| 2 | 30%, 15% | 1,162 | 0,90 | 0,7040 |
| 3 | 30%, 20% | 1,164 | 0,80 | 0,6247 |
| 4 | 35%, 10% | 1,152 | 0,90 | 0,7102 |
| 5 | 35%, 15% | 1,215 | 0,80 | 0,5985 |
| 6 | 35%, 20% | 1,150 | 0,65 | 0,5138 |
| 7 | 40%, 10% | 1,110 | 0,80 | 0,6551 |
| 8 | 40%, 15% | 1,096 | 0,70 | 0,5806 |
| 9 | 40%, 20% | 1,178 | 0,60 | 0,4630 |

Contoh Perhitungan :

Pembakuan NaOH : - Berat H2C2O4.2H2O = 0,070 g

* BE H2C2O4.2H2O = 63,035
* Vol. Na Tio sulfat = 11,00mL

Normalitas NaOH = $\frac{0,070 X 1000}{63,035 X 11,00}$ = 0,1010 N

Berat Sample = 1,170 g

Vol. Titrasi sample = 1,10 mL

BE asam laktat = 90

Kadar asam laktat (%, b/b) = $\frac{1,1 x 0,1010 x 90}{1,170 x 1000}x 100$

 = 0,8546

**Tabel 9.3 Analisis kadar asam laktat ulangan ke 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Kode sample | Berat sample (g) | Vol. NaOH baku (ml) | Kadar asam laktat (%) |
| 1 | 30%, 10% | 1,205 | 1,00 | 0,7544 |
| 2 | 30%, 15% | 1,278 | 0,90 | 0,6401 |
| 3 | 30%, 20% | 1,048 | 0,80 | 0,6939 |
| 4 | 35%, 10% | 1,185 | 0,90 | 0,6904 |
| 5 | 35%, 15% | 1,154 | 0,80 | 0,6302 |
| 6 | 35%, 20% | 1,085 | 0,70 | 0,5865 |
| 7 | 40%, 10% | 1,165 | 0,60 | 0,4682 |
| 8 | 40%, 15% | 1,235 | 0,50 | 0,3681 |
| 9 | 40%, 20% | 1,168 | 0,60 | 0,4670 |

Perhitungan :

Pembakuan NaOH : - Berat H2C2O4.2H2O = 0,070 g

* BE H2C2O4.2H2O = 63,035
* Vol. Na Tio sulfat = 11,00mL

Normalitas NaOH = $\frac{0,070 X 1000}{63,035 X 11,00}$ = 0,1010 N

Berat Sample = 1,205 g

Vol. Titrasi sample = 1,00 mL

BE asam laktat = 90

Kadar asam laktat (%, b/b) = $\frac{1,0 x 0,1010 x 90}{1,205 x 1000}x 100$

 = 0,7544

**Tabel 9.4 Hasil analisis kadar asam laktat**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Faktor a | Faktor b | Kelompok Ulangan | Total | Rata-rata |
|   |   | 1 | 2 | 3 | Perlakuan |
| a1 | b1 | 0.8699 | 0.8546 | 0.7544 | 2.4789 | 0.8263 |
|   | b2 | 0.6904 | 0.7040 | 0.6401 | 2.0345 | 0.6782 |
|   | b3 | 0.6147 | 0.6247 | 0.6939 | 1.9333 | 0.6444 |
|   |   |   |   |   |   |   |
| a2 | b1 | 0.6875 | 0.7102 | 0.6904 | 2.0881 | 0.6960 |
|   | b2 | 0.5681 | 0.5985 | 0.6302 | 1.7968 | 0.5989 |
|   | b3 | 0.4610 | 0.5138 | 0.5865 | 1.5613 | 0.5204 |
|   |   |   |   |   |   |   |
| a3 | b1 | 0.6173 | 0.6551 | 0.4682 | 1.7406 | 0.5802 |
|   | b2 | 0.4526 | 0.5806 | 0.3681 | 1.4013 | 0.4671 |
|   | b3 | 0.4069 | 0.4630 | 0.4670 | 1.3369 | 0.4456 |
| Total |   | 5.3684 | 5.7045 | 5.2988 | 16.3717 | 5.4572 |

**Lampiran 9.5 Perhitungan kadar asam laktat**

Faktor Koreksi (FK) =$\frac{\left(16,3717\right)2}{(3 x 3 x 3)}$ = 9,9271

Jumlah kuadran total (JKT) = (0,8699)2 + (0,8546)2 + …. + (0,4670)2 – 9,9271 = 0,4179

Jumlah kuadran kelompok (JKK) = (5,3684)2 + (5,7045)2 + (5,2988)2 – 9,9271 = 0,0105

Jumlah kuadran (A) = ( (2,4789+2,0345+1,9333)2 + (2,0881+1,7968+1,5613)2+ (1,7406+1,4013+1,3369)2 : 9 ) – 9,9271 = 0,2152

Jumlah Kuadran (B) = ( (2,4789+2,0881+1,7406)2 + (2,0345+1,7968+1,4013)2+ (1,9333+ 1,5613+ 1,3369)2 : 9 ) – 9,9271 = 0,1295

Jumlah kuadran (AB) = ( (2,4789)2 + (2,0345)2 + …. + (1,3369)2 : 3 ) – 9,9271 - 0,2152 -0,1295 = 0,0044

JK Galat = 0,4179 – 0,0105 – 0,2152 – 0,1295 – 0,0044 = 0,0583

**Tabel 9.6 Tabel Anava untuk analisis kadar asam laktat**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ANAVA** |  |  |  |  |  |   |  |
| Sumber | db | JK | KT | F hitung | F Tabel |
| Keragaman | 5% |
| kelompok | 2 | 0.0105 |   |   |   |   |
| perlakuan | 8 | 0.3491 |   |   |   |   |
| Faktor A | 2 | 0.2152 | 0.1076 | 29.548 | \*\* | 3.63 |
| Faktor B | 2 | 0.1295 | 0.0647 | 17.778 | \*\* | 3.63 |
| Interaksi AXB | 4 | 0.0045 | 0.0011 | 0.308 | tn | 3.01 |
| Galat | 16 | 0.0583 | 0.00364 |   |  |   |
| Total | 26 |   |   |   |   |   |

**Tabel 9.7 Uji jarak berganda Duncan Analisis kadar asam laktat**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| UJI LANJUT DUNCAN FAKTOR A | Sy = | 0.0201 |  |  |  |  |
| SSR | LSR | Rata-rata Perlakuan |   | Perlakuan |   |   |   |   | Taraf nyata |
| 5% | 5% | kode  | rata-rata | 1 |   | 2 |   | 3 | 5% |
|   |   | a3 | 0.498 |   |   |   |   |   | a |
| 3.00  |  0.0603  | a2 | 0.605 | 0.107 | \*\* |   |   |   | b |
| 3.15  |  0.0634  | a1 | 0.716 | 0.219 | \*\* | 0.111 | \*\* |   | c |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| UJI LANJUT DUNCAN FAKTOR B | Sy = | 0.0201 |  |  |  |
| SSR | LSR | Rata-rata Perlakuan | Perlakuan |   |   |   |   | Taraf nyata |
| 5% | 5% | kode  | rata-rata | 1 |   | 2 |   | 3 | 5% |
|   |   | b1 | 0.537 |   |   |   |   |   | a |
| 3.00  | 0.0603 | b2 | 0.581 | 0.045 | tn |   |   |   | a |
| 3.15  | 0.0634 | b3 | 0.701 | 0.164 | \*\* | 0.119 | \*\* |   | b |