**Lampiran 7. Data dan Analisis Ragam Serta BNJ 5% Kadar Air Minuman Serbuk Instan Belimbing Wuluh**

1. Data Kadar Air Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 7.16 | 7.48 | 7.51 | 22.15 | 7.38 |
| S1M2 | 6.54 | 6.48 | 5.65 | 18.67 | 6.22 |
| S1M3 | 4.48 | 5.11 | 4.86 | 14.45 | 4.82 |
| S2M1 | 8.73 | 9.43 | 7.28 | 25.44 | 8.48 |
| S2M2 | 6.1 | 6.39 | 7.03 | 19.52 | 6.51 |
| S2M3 | 4.49 | 6 | 6.75 | 17.24 | 5.75 |
| S3M1 | 7.99 | 7.52 | 6.18 | 21.69 | 7.23 |
| S3M2 | 5.57 | 5.3 | 5.36 | 16.23 | 5.41 |
| S3M3 | 6.29 | 7.15 | 6.35 | 19.79 | 6.60 |
| **Total** | 57.35 | 60.86 | 56.97 | 175.18 |  |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 22.15 | 18.67 | 14.45 | 55.27 | 6.14 |
| S2 | 25.44 | 19.52 | 17.24 | 62.20 | 6.91 |
| S3 | 21.69 | 16.23 | 19.79 | 57.71 | 6.41 |
| **Total** | 69.28 | 54.42 | 51.48 | 175.18 |  |
| **Rata-Rata** | 7.70 | 6.05 | 5.72 |  |  |

1. **Analisa Ragam**

* Faktor Koreksi (FK)

= 1136.5938

* Jumlah kuadrat



**=** (7.16² + 7.48² + 7.51² + …. + 6.35²) – 1136.5938

 = 38.27

1136.5938

3

.

3

56.97²)

+

60.86²

+

(57.35²





= 1.02

1136.5938

3

14.45² + … + 19.79²)

+

18.67²

+

(22.15²







= 29.7



1136.5938

3

.

3

57.71²)

+

62.20²

+

(55.27²





= 2.75



1136.5938

3

.

3

51.48²)

54.42²

+

(69.28²







= 20.23



= 38.27 – 1.02 – 29.72

= 6.74

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 1.02 | 0.51 | 1.09 | 3.63 | 6.23 | tn |
| Perlakuan | 8 | 29.72 | 3.72 | 7.90 | 2.59 | 3.89 | \*\* |
| S | 2 | 2.75 | 1.37 | 2.92 | 3.63 | 6.23 | tn |
| M | 2 | 20.23 | 10.12 | 21.52 | 3.63 | 6.23 | \*\* |
| SM | 4 | 6.74 | 1.69 | 3.59 | 3.01 | 4.77 | \* |
| Galat/sisa | 16 | 7.52 | 0.47 |  |  |  |  |
| Total | 26 | 38.27 | 1.47 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

3

0.16

,

3.65

*x*



= 0.79

**Lampiran 8. Data dan Analisis Ragam Serta BNJ 5% Vitamin C Minuman Serbuk Instan Belimbing Wuluh**

2. Data Vitamin C Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 0.16 | 0.17 | 0.16 | 0.49 | 0.16 |
| S1M2 | 0.11 | 0.13 | 0.15 | 0.39 | 0.13 |
| S1M3 | 0.16 | 0.15 | 0.17 | 0.48 | 0.16 |
| S2M1 | 0.13 | 0.14 | 0.15 | 0.42 | 0.14 |
| S2M2 | 0.16 | 0.12 | 0.14 | 0.42 | 0.14 |
| S2M3 | 0.11 | 0.16 | 0.17 | 0.44 | 0.15 |
| S3M1 | 0.11 | 0.12 | 0.1 | 0.33 | 0.11 |
| S3M2 | 0.13 | 0.15 | 0.17 | 0.45 | 0.15 |
| S3M3 | 0.23 | 0.2 | 0.26 | 0.69 | 0.23 |
| **Total** | 1.30 | 1.34 | 1.47 | 4.11 |  |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 0.49 | 0.39 | 0.48 | 1.36 | 0.15 |
| S2 | 0.42 | 0.42 | 0.44 | 1.28 | 0.14 |
| S3 | 0.33 | 0.45 | 0.69 | 1.47 | 0.16 |
| **Total** | 1.24 | 1.26 | 1.61 | 4.11 |  |
| **Rata-Rata** | 0.14 | 0.14 | 0.18 |  |  |

**Analisa Ragam**

* Faktor Koreksi (FK)

= 0.625633

* Jumlah kuadrat



**=** (0.16² + 0.17² + 0.16² + …. + 0.26²) – 0.625633

 = 0.03

0.625633

3

.

3

1.47²)

+

1.34²

+

(1.30²





= 0.0018

0.625633

3

0.48² + … + 0.69²)

+

0.39²

+

(0.49²







= 0.03



0.625633

3

.

3

1.47²)

+

1.28²

+

(1.36²





= 0.0020



0.625633

3

.

3

1.61²)

1.26²

+

(1.24²







= 0.01



= 0.03 – 0.0018 – 0.03

= 6.74

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 0.0018 | 0.00088 | 2.71 | 3.63 | 6.23 | tn |
| Perlakuan | 8 | 0.03 | 0.00332 | 10.25 | 2.59 | 3.89 | \*\* |
| S | 2 | 0.0020 | 0.00101 | 3.12 | 3.63 | 6.23 | tn |
| M | 2 | 0.01 | 0.00481 | 14.87 | 3.63 | 6.23 | \*\* |
| SM | 4 | 0.01 | 0.00372 | 11.50 | 3.01 | 4.77 | \*\* |
| Galat/sisa | 16 | 0.01 | 0.00032 |  |  |  |  |
| Total | 26 | 0.03 | 0.00129 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

3

0.00032

,

3.65

*x*



= 0.0005

**Lampiran 9. Data dan Analisis Ragam Serta BNJ 5% Kelarutan Minuman Serbuk Instan Belimbing Wuluh**

1. Data Kelarutan Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 54.86 | 53.27 | 44.13 | 152.25 | 50.75 |
| S1M2 | 72.30 | 49.01 | 66.66 | 187.96 | 62.65 |
| S1M3 | 74.70 | 53.34 | 64.29 | 192.34 | 64.11 |
| S2M1 | 51.16 | 57.65 | 63.29 | 172.10 | 57.37 |
| S2M2 | 47.83 | 58.43 | 72.39 | 178.65 | 59.55 |
| S2M3 | 52.96 | 50.02 | 59.83 | 162.81 | 54.27 |
| S3M1 | 43.67 | 46.84 | 55.24 | 145.74 | 48.58 |
| S3M2 | 62.04 | 70.90 | 59.30 | 192.24 | 64.08 |
| S3M3 | 58.38 | 72.36 | 73.19 | 203.93 | 67.98 |
| **Total** | 517.90 | 511.80 | 558.33 | 1588.02 | 58.82 |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 152.25 | 187.96 | 192.34 | 532.55 | 59.17 |
| S2 | 172.10 | 178.65 | 162.81 | 513.55 | 57.06 |
| S3 | 145.74 | 192.24 | 203.93 | 541.91 | 60.21 |
| **Total** | 470.10 | 558.85 | 559.07 | 1588.02 |  |
| **Rata-Rata** | 52.23 | 62.09 | 62.12 |  |  |

**Analisa Ragam**

* Faktor Koreksi (FK)

= 93400.1905

* Jumlah kuadrat



**=** (54.86² + 53.27² + 44.13² + …. + 73.19²) – 93400.1905

 = 2344.47

93400.1905

3

.

3

559.07²)

+

511.80²

+

(517.90²





= 142.11

93400.1905

3

192.34² + … + 203.93²)

+

187.96²

+

(152.25²







= 1042.50



93400.1905

3

.

3

542.91²)

+

523.55²

+

(532.55²





= 46.40



93400.1905

3

.

3

559.07²)

558.85²

+

(470.10²







= 584.96



= 2344.47 – 142.11 – 1042.50

= 411.13

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 142.11 | 71.05 | 0.98 | 3.63 | 6.23 | tn |
| Perlakuan | 8 | 1042.50 | 130.31 | 1.80 | 2.59 | 3.89 | tn |
| S | 2 | 46.40 | 23.20 | 0.32 | 3.63 | 6.23 | tn |
| M | 2 | 584.96 | 292.48 | 4.03 | 3.63 | 6.23 | \* |
| SM | 4 | 411.13 | 102.78 | 1.42 | 3.01 | 4.77 | tn |
| Galat/sisa | 16 | 1159.86 | 72.49 |  |  |  |  |
| Total | 26 | 2344.47 | 90.17 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

9

72.49

,

3.65

*x*



= 10.36

**Lampiran 10. Data dan Analisis Ragam Serta BNJ 5% Warna L\* Minuman Serbuk Instan Belimbing Wuluh**

1. Data Warna L\* Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 84.98 | 83.18 | 83.89 | 252.05 | 84.02 |
| S1M2 | 84.85 | 87.92 | 88.99 | 261.76 | 87.25 |
| S1M3 | 88.14 | 85.07 | 85.79 | 259.00 | 86.33 |
| S2M1 | 81.09 | 74.19 | 85.52 | 240.80 | 80.27 |
| S2M2 | 84.99 | 85.87 | 84.13 | 254.99 | 85.00 |
| S2M3 | 88.01 | 85.32 | 89.48 | 262.81 | 87.60 |
| S3M1 | 78.5 | 84.38 | 83.49 | 246.37 | 82.12 |
| S3M2 | 84.7 | 80.69 | 85.47 | 250.86 | 83.62 |
| S3M3 | 87.57 | 85.48 | 88.79 | 261.84 | 87.28 |
| **Total** | 762.83 | 752.10 | 775.55 | 2290.48 |  |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 252.05 | 261.76 | 259.00 | 772.81 | 85.87 |
| S2 | 240.80 | 254.99 | 262.81 | 758.60 | 84.29 |
| S3 | 246.37 | 250.86 | 261.84 | 759.07 | 84.34 |
| **Total** | 739.22 | 767.61 | 783.65 | 2290.48 |  |
| **Rata-Rata** | 82.14 | 85.29 | 87.07 |  |  |

**Analisa Ragam**

* Faktor Koreksi (FK)

= 194307.3567

* Jumlah kuadrat



**=** (84.98² + 83.18² + 83.89² + …. + 88.79²) – 194307.3567

 = 286.91

194307.3567

3

.

3

775.55²)

+

752.10²

+

(762.83²





= 30.62

194307.3567

3

259.00² + … + 261.84²)

+

261.76²

+

(252.05²







= 156.39



194307.3567

3

.

3

759.07²)

+

758.60²

+

(772.81²





= 14.48



194307.3567

3

.

3

783.65²)

767.61²

+

(739.22²







= 112.49



= 286.91– 30.62 – 156.39

= 411.13

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 30.62 | 15.31 | 2.45 | 3.63 | 6.23 | tn |
| Perlakuan | 8 | 156.39 | 19.55 | 3.13 | 2.59 | 3.89 | \* |
| S | 2 | 14.48 | 7.24 | 1.16 | 3.63 | 6.23 | tn |
| M | 2 | 112.49 | 56.25 | 9.01 | 3.63 | 6.23 | \*\* |
| SM | 4 | 29.42 | 7.35 | 1.18 | 3.01 | 4.77 | tn |
| Galat/sisa | 16 | 99.90 | 6.24 |  |  |  |  |
| Total | 26 | 286.91 | 11.03 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

9

6.24

,

3.65

*x*



= 3.04

**Lampiran 11. Data dan Analisis Ragam Serta BNJ 5% Warna a\* Minuman Serbuk Instan Belimbing Wuluh**

1. Data Warna a\* Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 6.22 | 5.87 | 5.71 | 17.80 | 5.93 |
| S1M2 | 5.31 | 4.27 | 2.27 | 11.85 | 3.95 |
| S1M3 | 3.39 | 6.14 | 3.43 | 12.96 | 4.32 |
| S2M1 | 5.52 | 6.23 | 5.27 | 17.02 | 5.67 |
| S2M2 | 4.28 | 5.44 | 3.71 | 13.43 | 4.48 |
| S2M3 | 4.59 | 5.16 | 2.98 | 12.73 | 4.24 |
| S3M1 | 6.27 | 5.08 | 6.23 | 17.58 | 5.86 |
| S3M2 | 5.17 | 7.07 | 5.43 | 17.67 | 5.89 |
| S3M3 | 4.03 | 4.03 | 2.77 | 10.83 | 3.61 |
| **Total** | 44.78 | 49.29 | 37.80 | 131.87 |  |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 17.80 | 11.85 | 12.96 | 42.61 | 4.73 |
| S2 | 17.02 | 13.43 | 12.73 | 43.18 | 4.80 |
| S3 | 17.58 | 17.67 | 10.83 | 46.08 | 5.12 |
| **Total** | 52.40 | 42.95 | 36.52 | 131.87 |  |
| **Rata-Rata** | 5.82 | 4.77 | 4.06 |  |  |

**Analisa Ragam**

* Faktor Koreksi (FK)

= 644.06

* Jumlah kuadrat



**=** (6.22² + 5.87² + 5.71² + …. + 2.77²) – 644.06

 = 39.82

644.06

3

.

3

37.70²)

+

49.29²

+

(44.78²





= 7.45

644.06

3

12.96² + … + 10.83²)

+

11.85²

+

(17.80²







= 21.24



644.06

3

.

3

46.08²)

+

43.18²

+

(42.61²





= 0.77



644.06

3

.

3

36.52²)

42.95²

+

(52.40²







= 14.18



= 39.82– 7.45 – 21.24

= 6.29

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 7.45 | 3.72 | 5.35 | 3.63 | 6.23 | \* |
| Perlakuan | 8 | 21.24 | 2.65 | 3.81 | 2.59 | 3.89 | \* |
| S | 2 | 0.77 | 0.38 | 0.55 | 3.63 | 6.23 | tn |
| M | 2 | 14.18 | 7.09 | 10.19 | 3.63 | 6.23 | \*\* |
| SM | 4 | 6.29 | 1.57 | 2.26 | 3.01 | 4.77 | tn |
| Galat/sisa | 16 | 11.13 | 0.70 |  |  |  |  |
| Total | 26 | 39.82 | 1.53 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

9

6.70

,

3.65

*x*



= 1.01

**Lampiran 12. Data dan Analisis Ragam Serta BNJ 5% Warna b\* Minuman Serbuk Instan Belimbing Wuluh**

1. Data Warna b\* Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 21.12 | 20.09 | 19.14 | 60.35 | 20.12 |
| S1M2 | 18.32 | 15.51 | 15.62 | 49.45 | 16.48 |
| S1M3 | 16.11 | 17.93 | 15.48 | 49.52 | 16.51 |
| S2M1 | 19.25 | 19.86 | 19.45 | 58.56 | 19.52 |
| S2M2 | 18.79 | 19.3 | 17.02 | 55.11 | 18.37 |
| S2M3 | 17.98 | 18.72 | 14.89 | 51.59 | 17.20 |
| S3M1 | 20.69 | 18.62 | 21.35 | 60.66 | 20.22 |
| S3M2 | 18.26 | 19.99 | 19.22 | 57.47 | 19.16 |
| S3M3 | 16.13 | 15.26 | 12.6 | 43.99 | 14.66 |
| **Total** | 166.65 | 165.28 | 154.77 | 486.70 |  |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 60.35 | 49.45 | 49.52 | 159.32 | 17.70 |
| S2 | 58.56 | 55.11 | 51.59 | 165.26 | 18.36 |
| S3 | 60.66 | 57.47 | 43.99 | 162.12 | 18.01 |
| **Total** | 179.57 | 162.03 | 145.10 | 486.70 |  |
| **Rata-Rata** | 19.95 | 18.00 | 16.12 |  |  |

**Analisa Ragam**

* Faktor Koreksi (FK)

= 8773.21815

* Jumlah kuadrat



**=** (21.12² + 20.09² + 19.14² + …. + 12.6²) – 8773.21815

 = 122.39

8773.21815

3

.

3

154.77²)

+

165.28²

+

(166.65²





= 9.39

8773.21815

3

49.52² + … + 43.99²)

+

49.45²

+

(60.35²







= 88.49



8773.21815

3

.

3

162.12²)

+

165.26²

+

(159.32²





= 1.96



8773.21815

3

.

3

145.10²)

162.03²

+

(179.57²







= 66.02



= 122.39– 9.39 – 88.49

= 20.51

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 9.39 | 4.69 | 3.06 | 3.63 | 6.23 | tn |
| Perlakuan | 8 | 88.49 | 11.06 | 7.22 | 2.59 | 3.89 | \*\* |
| S | 2 | 1.96 | 0.98 | 0.64 | 3.63 | 6.23 | tn |
| M | 2 | 66.02 | 33.01 | 21.54 | 3.63 | 6.23 | \*\* |
| SM | 4 | 20.51 | 5.13 | 3.35 | 3.01 | 4.77 | \* |
| Galat/sisa | 16 | 24.51 | 1.53 |  |  |  |  |
| Total | 26 | 122.39 | 4.71 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

3

1.53

,

3.65

*x*



= 2.57

**Lampiran 13. Data dan Analisis Ragam Serta BNJ 5% Gula Reduksi Minuman Serbuk Instan Belimbing Wuluh**

1. Data Gula Reduksi Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 1.319 | 1.161 | 1.951 | 4.43 | 1.48 |
| S1M2 | 1.319 | 1.161 | 0.924 | 3.40 | 1.13 |
| S1M3 | 0.766 | 3.294 | 0.845 | 4.91 | 1.64 |
| S2M1 | 7.243 | 7.875 | 6.137 | 21.26 | 7.09 |
| S2M2 | 6.295 | 8.270 | 6.927 | 21.49 | 7.16 |
| S2M3 | 1.003 | 1.003 | 0.766 | 2.77 | 0.92 |
| S3M1 | 0.766 | 1.398 | 0.608 | 2.77 | 0.92 |
| S3M2 | 0.529 | 0.766 | 0.845 | 2.14 | 0.71 |
| S3M3 | 1.003 | 1.003 | 0.608 | 2.61 | 0.87 |
| **Total** | 20.24 | 25.93 | 19.61 | 65.79 |  |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 4.43 | 3.40 | 4.91 | 12.74 | 1.42 |
| S2 | 21.26 | 21.49 | 2.77 | 45.52 | 5.06 |
| S3 | 2.77 | 2.14 | 2.61 | 7.53 | 0.84 |
| **Total** | 28.46 | 27.04 | 10.29 | 65.79 |  |
| **Rata-Rata** | 3.16 | 3.00 | 1.14 |  |  |

**Analisa Ragam**

* Faktor Koreksi (FK)

= 160.30776

* Jumlah kuadrat



**=** (1.319² + 1.161² + 1.951² + …. + 1.608²) – 160.30776

 = 180.32

160.30776

3

.

3

19.61²)

+

25.93²

+

(20.24²





= 2.69

160.30776

3

4.91² + … + 2.61²)

+

3.40²

+

(4.43²







= 171.64



160.30776

3

.

3

7.53²)

+

45.52²

+

(12.74²





= 94.27



160.30776

3

.

3

10.29²)

27.04²

+

(28.46²







= 22.68



= 180.32– 2.69 – 171.64

= 54.68

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 2.69 | 1.35 | 3.59 | 3.63 | 6.23 | tn |
| Perlakuan | 8 | 171.64 | 21.45 | 57.28 | 2.59 | 3.89 | \*\* |
| S | 2 | 94.27 | 47.13 | 125.83 | 3.63 | 6.23 | \*\* |
| M | 2 | 22.68 | 11.34 | 30.28 | 3.63 | 6.23 | \*\* |
| SM | 4 | 54.68 | 13.67 | 36.50 | 3.01 | 4.77 | \*\* |
| Galat/sisa | 16 | 5.99 | 0.37 |  |  |  |  |
| Total | 26 | 180.32 | 6.94 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

3

0.37

,

3.65

*x*



= 0.63

**Lampiran 14. Data dan Analisis Ragam Serta BNJ 5% Rendemen Minuman Serbuk Instan Belimbing Wuluh**

1. Data Rendemen Minuman Serbuk Instan Belimbing Wuluh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Ulanngan** | | | **Total** | **Rata-Rata** |
| **I** | **II** | **III** |
| S1M1 | 18.78 | 19.48 | 19.5 | 57.76 | 19.25 |
| S1M2 | 21.01 | 20.88 | 20.67 | 62.56 | 20.85 |
| S1M3 | 22.76 | 22.02 | 22.87 | 67.65 | 22.55 |
| S2M1 | 19.06 | 20.17 | 20.57 | 59.80 | 19.93 |
| S2M2 | 23.42 | 23.46 | 24.76 | 71.64 | 23.88 |
| S2M3 | 27.12 | 22.41 | 26.38 | 75.91 | 25.30 |
| S3M1 | 21.01 | 22.53 | 23.32 | 66.86 | 22.29 |
| S3M2 | 24.18 | 26.75 | 26.5 | 77.43 | 25.81 |
| S3M3 | 30.11 | 29 | 28.54 | 87.65 | 29.22 |
| **Total** | 207.45 | 206.70 | 213.11 | 627.26 |  |

Tabel 2 Arah

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Faktor S** | **Faktor M** | | | **Total** | **Rata-Rata** |
| **M1** | **M2** | **M3** |
| S1 | 57.76 | 62.56 | 67.65 | 187.97 | 20.89 |
| S2 | 59.80 | 71.64 | 75.91 | 207.35 | 23.04 |
| S3 | 66.86 | 77.43 | 87.65 | 231.94 | 25.77 |
| **Total** | 184.42 | 211.63 | 231.21 | 627.26 |  |
| **Rata-Rata** | 20.49 | 23.51 | 25.69 |  |  |

**Analisa Ragam**

* Faktor Koreksi (FK)

= 14572.411

* Jumlah kuadrat



**=** (18.78² + 19.48² + 19.5² + …. + 28.54²) – 14572.411

 = 266.82

14572.411

3

.

3

1213.11²)

+

206.70²

+

(207.45²





= 2.73

14572.411

3

67.65² + … + 87.65²)

+

62.56²

+

(57.76²







= 242.70



14572.411

3

.

3

231.94²)

+

207.35²

+

(187.97²





= 107.91



14572.411

3

.

3

231.21²)

211.63²

+

(184.42²







= 122.71



= 266.82– 2.73 – 242.70

= 12.08

* Kuadrat tengah (KT)



* F Hitung



Tabel *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SK | DB | JK | KT | F Hit | F Tab | | KET |
| 0.05 | 0.01 |
| Kelompok | 2 | 2.73 | 1.36 | 1.02 | 3.63 | 6.23 | tn |
| Perlakuan | 8 | 242.70 | 30.34 | 22.70 | 2.59 | 3.89 | \*\* |
| S | 2 | 107.91 | 53.96 | 40.37 | 3.63 | 6.23 | \*\* |
| M | 2 | 122.71 | 61.35 | 45.90 | 3.63 | 6.23 | \*\* |
| SM | 4 | 12.08 | 3.02 | 2.26 | 3.01 | 4.77 | tn |
| Galat/sisa | 16 | 21.39 | 1.34 |  |  |  |  |
| Total | 26 | 266.82 | 10.26 |  |  |  |  |

Keterangan: \* (Nyata)

\*\* (Sangat Nyata)

**Uji BNJ 5%**

****

9

1.34

,

3.65

*x*



= 1.41