**Lampiran 1. Analisa Tekstur Metode Texture Profile Analyzer (TPA) (Indiarto et all, 2012)**

Tujuan : Untuk mengetahui profil tekstur permen jelly tomat.

Alat : Texture Analyzer.

Bahan : Sampel 1 x 1 cm .

Prosedur Kerja :

1. Alat dihubungkan ke stop kontak.

2. Saklar di belakang alat dinyalakan.

3. Tombol “start” ditekan untuk memindahkan meja kerja alat ke bagian bawah.

4. Alat di atur sesuai dengan jenis sampel.

5. Probe di pasang, lalu atur sampel mendekati probe.

6. Alat di atur ketinggian meja setinggi 5 mm, speed compression 1 s dan returning speed 1 mm/s.

7. Diklik next.

8. Tombol “start” di tekan untuk pengujian.

9. Hasil pengujian terbaca di catat. Parameter yang diamati hardness.

**Lampiran 2. Analisis Warna dengan*Colour Reader* (Yuwono dan Susanto, 1998)**

Tujuan : mengetahui warna fisik dari permen jelly tomat.

Alat : plastik bening, kertas putih, *colour reader.*

Bahan : permen jelly tomat

Metode : *colour reader.*

Prosedur uji :

1. *Hand refractometer* disiapkan, kemudian dikalibrasi.
2. Sampel ditempatkan dalam plastik bening.
3. *Hand refractometer* diletakkan pada permukaan sampel yang telah diberi alas kertas putih.
4. Tombol pembacaan diatur pada L\*, a\*, b\* lalu tombol target.
5. Hasil pembacaan dicatat.

**Lampiran 3. Kadar Air Metode Oven Kering (AOAC, 2007)**

Tujuan : Untuk mengetahui kadar air pada permen jelly tomat.

Alat : Cawan, penjepit, oven, desikator dan timbangan analitik.

Bahan : Permen jelly tomat.

Prosedur uji:

1. Cawan porselin yang akan digunakan, dikeringkan terlebih dahulu selama 1 jam pada suhu 105°C.

2. Cawan yang telah dikeringkan, lalu didinginkan dalam desikator selama 30 menit dan di timbang hingga beratnya tetap.

3. Sampel yang akan dianalisa ditimbang sebanyak 2 gr dalam cawan tersebut, kemudian dikeringkan dalam oven pada suhu 100-105oC selama 5 jam atau sampai mencapai beratnya tetap (konstan).

4. Beratnya tetap. Kadar air di hitung dengan rumus :

Kadar air (%) = x 100%

Keterangan :

A : berat cawan kosong (gram)

B : berat cawan + sampel (gram)

C : berat cawan + sampel setelah pengeringan (gram)

**Lampiran 4. Data dan Analisa Ragam serta BNJ 5% Kadar Air Permen Jelly Tomat.**

1. Data Analisa Kadar Air Permen Jelly Tomat.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | | | | Total | Rerata |
| 1 | 2 | 3 | 4 |
| TN1 | 22,37 | 25,89 | 27,07 | 21,32 | 96,65 | 24,16 |
| TN2 | 24,96 | 21,37 | 17,89 | 22,34 | 86,56 | 21,64 |
| TN3 | 20,58 | 15,06 | 18,24 | 18,84 | 72,72 | 18,18 |
| TN4 | 16,32 | 19,09 | 17,30 | 20,64 | 73,35 | 18,34 |
| TN5 | 20,90 | 15,52 | 17,60 | 16,62 | 70,64 | 17,66 |
| Total | 105,13 | 96,93 | 98,10 | 99,76 | 399,92 |  |

1. Analisis Ragam

* Faktor Koreksi (FK)

=

= 7996,8

* Jumlah Kuadrat (JK)

= (22,37² + 25,89² + 27,07² + …. + 16,62²) – 7996,8

= 217,76



(105,13² + 96,93² + 98,10² + 99,76²)

7996,8

5

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= 7,88



= – 7996,8

= 126,27

*JKgalat = JKtotal – JKkelompok – JKperlakuan*

*=* 217,76 *–* 7,88 *–* 126,27

*=* 83,61

* Kuadrat Tengah (KT)



* F Hitung

1. Table *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SK** | **DB** | **JK** | **KT** | **F Hit** | **F Tabel** | | **Keterangan** |
| **0,05** | **0,01** |
| Kelompok | 3 | 7,8816 | 2,6272 | 0,3771 | 3,4903 | 5,9525 | tn |
| Perlakuan | 4 | 126,2713 | 31,5678 | 4,5309 | 3,2592 | 5,4120 | \* |
| Galat/Sisa | 12 | 83,6074 | 6,9673 |  |  |  |  |
| Total | 19 | 217,7603 |  |  |  |  |  |

Keterangan :

\* (nyata)

\*\* (sangat nyata)

tn (tidak nyata)

1. Uji BNJ 5%

= 4,51 *x*

= 5,95

**Lampiran 5. Data dan Analisa ragam serta BNJ 5% Tekstur Permen Jelly Tomat**

1. Data Analisa Tekstur Permen Jelly Tomat.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | | | | Total | Rerata |
| 1 | 2 | 3 | 4 |
| TN1 | 50,36 | 50,50 | 48,86 | 48,42 | 198,14 | 49,54 |
| TN2 | 50,33 | 50,45 | 50,56 | 50,62 | 201,96 | 50,49 |
| TN3 | 41,72 | 50,37 | 50,25 | 50,41 | 192,75 | 48,19 |
| TN4 | 49,94 | 50,24 | 45,74 | 45,74 | 191,66 | 47,92 |
| TN5 | 47,34 | 50,28 | 50,26 | 39,60 | 187,48 | 46,87 |
| Total | 239,69 | 251,84 | 245,67 | 234,79 | 971,99 |  |

1. Analisis Ragam

* Faktor Koreksi (FK)

=

= 47238,2

* Jumlah Kuadrat (JK)

= (50,36² + 50,50² + 48,86² + …. + 39,60²) – 47238,2

****= 186,62

(239,69² + 251,84² + 245,67² + 234,79²)

47238,2

5

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****= 32,73

= – 47238,2

= 32,31

*JKgalat = JKtotal – JKkelompok – JKperlakuan*

*=* 186,62 – 32,73 – 32,31

*=* 121,58

* Kuadrat Tengah (KT)
* F Hitung

1. Table *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SK** | **DB** | **JK** | **KT** | **F Hit** | **F Tabel** | | **Keterangan** |
| **0,05** | **0,01** |
| Kelompok | 3 | 32,7269 | 10,9090 | 1,0767 | 3,4903 | 5,9525 | tn |
| Perlakuan | 4 | 32,3144 | 8,0786 | 0,7974 | 3,2592 | 5,4120 | tn |
| Galat | 12 | 121,5795 | 10,1316 |  |  |  |  |
| Total | 19 | 186,6209 |  |  |  |  |  |

Keterangan : \* (nyata)

\*\* (sangat nyata)

tn (tidak nyata)

**Lampiran 6. Data dan Analisis Ragam serta BNJ 5% Profil Warna Permen Jelly Tomat.**

1. Hasil analisis nilai *Lightness*
2. Data Nilai *Lightness* Permen Jelly Tomat.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | | | | Total | Rerata |
| 1 | 2 | 3 | 4 |
| TN1 | 31,42 | 36,36 | 29,22 | 33,11 | 130,11 | 32,53 |
| TN2 | 34,65 | 29,28 | 28,50 | 28,33 | 120,76 | 30,19 |
| TN3 | 30,24 | 32,62 | 29,93 | 30,12 | 122,91 | 30,73 |
| TN4 | 33,20 | 32,68 | 28,89 | 28,89 | 123,66 | 30,92 |
| TN5 | 28,32 | 30,72 | 33,16 | 28,54 | 120,74 | 30,19 |
| Total | 157,83 | 161,66 | 149,7 | 148,99 | 618,18 |  |

1. Analisis Ragam

* Faktor Koreksi (FK)

=

= 19107,3

* Jumlah Kuadrat (JK)

= (31,42² + 36,36² + 29,22² + …. + 28,54²) – 19107,3

****= 105,69

(157,83² + 161,66² + 149,7² + 148,99²)

19107,3

5

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****= 23,15

= – 19107,3

= 14,77

*JKgalat = Jktotal – Jkkelompok – Jkperlakuan*

*=* 105,69 – 23,15 – 14,77

*=* 67,76

* Kuadrat Tengah (KT)



* F Hitung

1. Table *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SK** | **DB** | **JK** | **KT** | **F Hit** | **F Tabel** | | **Keterangan** |
| **0,05** | **0,01** |
| Kelompok | 3 | 23,1493 | 7,7164 | 1,3665 | 3,4903 | 5,9525 | tn |
| Perlakuan | 4 | 14,7746 | 3,6937 | 0,6541 | 3,2592 | 5,4120 | tn |
| Galat/Sisa | 12 | 67,7627 | 5,6469 |  |  |  |  |
| Total | 19 | 105,6866 |  |  |  |  |  |

Keterangan : \* (nyata)

\*\* (sangat nyata)

tn (tidak nyata)

1. Hasil analisis nilai Redness
   * + 1. Data Nilai *Redness* Permen Jelly Tomat.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | | | | Total | Rerata |
| 1 | 2 | 3 | 4 |
| TN1 | 2,77 | 9,09 | 3,54 | 3,17 | 18,57 | 4,64 |
| TN2 | 3,39 | 3,20 | 1,53 | 1,29 | 9,41 | 2,35 |
| TN3 | 3,95 | 3,82 | 3,71 | 4,10 | 15,58 | 3,90 |
| TN4 | 3,48 | 4,54 | 3,45 | 2,64 | 14,11 | 3,53 |
| TN5 | 2,11 | 6,18 | 5,10 | 2,10 | 15,49 | 3,87 |
| Total | 15,7 | 26,83 | 17,33 | 13,3 | 73,16 |  |

* + - 1. Analisis Ragam.
* Faktor Koreksi (FK)

=

= 267,61

* Jumlah Kuadrat (JK)

= (2,77² + 9,09² + 3,54² + …. + 2,10²) – 267,61

****= 56,43

(15,70² + 26,83² + 17,33² + 13,30²)

267,61

5

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****= 21,09

= – 267,61

= 11,17

*JKgalat = Jktotal – Jkkelompok – Jkperlakuan*

*=* 59,43 *–* 21,09 *–* 11,17

*=* 24,16

* Kuadrat Tengah (KT)



* F Hitung
  + - 1. Table *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SK** | **DB** | **JK** | **KT** | **F Hit** | **F Tabel** | | **Keterangan** |
| **0,05** | **0,01** |
| Kelompok | 3 | 21,0923 | 7,0308 | 3,4916 | 3,4903 | 5,9525 | \* |
| Perlakuan | 4 | 11,1711 | 2,7928 | 1,3869 | 3,2592 | 5,4120 | tn |
| Galat/Sisa | 12 | 24,1635 | 2,0136 |  |  |  |  |
| Total | 19 | 56,4269 |  |  |  |  |  |

Keterangan : \* (nyata)

\*\* (sangat nyata)

tn (tidak nyata)

1. Hasil analisis nilai Yellowness
   * + 1. Data Nilai *Yellowness* Permen Jelly Tomat.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | | | | Total | Rerata |
| 1 | 2 | 3 | 4 |
| TN1 | 3,45 | 4,74 | 10,32 | 3,69 | 22,20 | 5,55 |
| TN2 | 6,08 | 6,46 | 10,62 | 11,74 | 34,90 | 8,73 |
| TN3 | 4,82 | 3,56 | 6,28 | 5,43 | 20,09 | 5,02 |
| TN4 | 2,82 | 4,10 | 2,82 | 7,80 | 17,54 | 4,39 |
| TN5 | 11,67 | 6,40 | 4,26 | 8,96 | 31,29 | 7,82 |
| Total | 28,84 | 25,26 | 34,30 | 37,62 | 126,02 |  |

* + - 1. Analisis Ragam
* Faktor Koreksi (FK)

=

= 794,05

* Jumlah Kuadrat (JK)

= (3,45² + 4,74² + 10,32² + …. + 8,96²) – 794,05

****= 163,71

(28,84² + 25,26² + 34,30² + 37,62²)

794,05

5

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****= 18,26

= – 794,05

= 56,24

*JKgalat = Jktotal – Jkkelompok – Jkperlakuan*

*=* 163,71 *–* 18,26 *–* 56,24

*=* 89,21

* Kuadrat Tengah (KT)



* F Hitung
  + - 1. Table *Analysis of Variance* (ANOVA)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SK** | **DB** | **JK** | **KT** | **F Hit** | **F Tabel** | | **Keterangan** |
| **0,05** | **0,01** |
| Kelompok | 3 | 18,2615 | 6,0872 | 0,8188 | 3,4903 | 5,9525 | tn |
| Perlakuan | 4 | 56,2414 | 14,0604 | 1,8914 | 3,2592 | 5,4120 | tn |
| Galat/Sisa | 12 | 89,2059 | 7,4338 |  |  |  |  |
| Total | 19 | 163,7088 |  |  |  |  |  |

Keterangan : \* (nyata)

\*\* (sangat nyata)

tn (tidak nyata)