

## LAMPIRAN

### Lampiran 1. Lembar Persetujuan Sebagai Panelis

#### LEMBAR PERSETUJUAN PANELIS (INFORMED CONSENT)

Saya yang bertanda tangan dibawah ini :

Nama :

Umur :

No.Handphone :

Fakultas/ Jurusan :

Menyatakan bersedia menjadi panelis penelitian dari :

Nama : Rhatri Dwi Anggraeni

NIM : 2014 – 32 – 126

Judul : **“Pengembangan Produk Cookies Menggunakan Bahan Pangan Lokal Dengan Klaim Tinggi Protein, Kalsium, dan Besi Untuk Anak Usia Sekolah”**

Saya telah mendapatkan penjelasan dari penelitian mengenai tujuan penelitian ini. Saya mengerti bahwa penelitian ini tidak akan membahayakan diri saya. Identitas dan jawaban yang akan saya berikan akan dijaga kerahasiannya dan hanya diperlukan sebagai bahan penelitian.

Demikian surat pernyataan ini saya tandatangani secara sadar dan tanpa ada paksaan dari pihak manapun.

Jakarta,.....

Panelis

( )

## Lampiran 2. Formulir Organoleptik Uji Hedonik dan Mutu Hedonik

## FORMULIR PENILAIAN UJI HEDONIK

Nama :

Tanggal Pengujian : / /

Produk : *Cookies*

Kode Sampel

Dihadapan saudara disajikan beberapa sampel *Cookies*. Saudara diminta menilai berdasarkan aspek rasa, warna, aroma, dan tekstur dari *Cookies* dengan memberikan deskripsi sensori yang aktual terhadap produk yang telah disediakan sesuai dengan kode sampel. Sebelum dan sesudah mencicipi *Cookies*, saudara diminta untuk meminum air mineral terlebih dahulu sebelum memberi penilaian. Atas kerjasamanya saya ucapkan terimakasih.

✓ **Rasa**

\_\_\_\_\_

Tidak Suka Sangat Suka

✓ **Warna**

\_\_\_\_\_

Tidak Suka Sangat Suka

✓ **Aroma**

\_\_\_\_\_

Tidak Suka Sangat Suka

✓ **Tekstur**

\_\_\_\_\_

Tidak Suka Sangat Suka

Lanjutan

**FORMULIR PENILAIAN UJI MUTU HEDONIK**

Nama :

Tanggal Pengujian : / /

Produk : *Cookies*

Kode Sampel

Dihadapan saudara disajikan beberapa sampel *Cookies*. Saudara diminta menilai berdasarkan aspek rasa, warna, aroma, dan tekstur dari *Cookies* dengan memberikan deskripsi sensori yang aktual terhadap produk yang telah disediakan sesuai dengan kode sampel. Sebelum dan sesudah mencicipi *Cookies*, saudara diminta untuk meminum air mineral terlebih dahulu sebelum memberi penilaian. Atas kerjasamanya saya ucapkan terimakasih.

✓ **Rasa**

Manis Gurih

✓ **Warna**

Kuning Coklat

✓ **Aroma**

Amis Tidak Amis

✓ **Tekstur**

Tidak Renyah Renyah

**Lampiran 3. Perhitungan Informasi Nilai Gizi****Perhitungan Label Informasi Nilai Gizi****Cookies per 50 g**

|              |              |
|--------------|--------------|
| Energi total | : 66,89 kkal |
| Protein      | : 12,11 g    |
| Lemak        | : 23,89 g    |
| Karbohidrat  | : 30,89 g    |
| Zat Besi     | : 2,78 mg    |
| Kalsium      | : 12,51 mg   |

**Kalori dalam 50 g Cookies**

|                           |                                  |
|---------------------------|----------------------------------|
| Jumlah kalori protein     | : $12,11 \times 4 = 48,44$ kkal  |
| Jumlah kalori karbohidrat | : $30,89 \times 4 = 123,56$ kkal |
| Jumlah kalori lemak       | : $23,89 \times 9 = 215,01$ kkal |
| Total kalori              | : 387,01 kkal                    |

**AKG (2100) Cookies**

|             |  |
|-------------|--|
| Kalori      | : $(66,89/2100) \times 100\% = 3,1\%$  |
| Protein     | : $(12,11/56) \times 100\% = 21,62\%$  |
| Karbohidrat | : $(30,89/289) \times 100\% = 10,68\%$ |
| Lemak       | : $(23,89/70) \times 100\% = 34,12\%$  |
| Zat besi    | : $(2,78/13) \times 100\% = 21,38\%$   |
| Kalsium     | : $(12,51/1200) \times 100\% = 1,04\%$ |

Lampiran 4. Label Informasi Nilai Gizi dan Biaya Produksi *Cookies*

| <b>INFORMASI NILAI GIZI</b>   |          |                   |
|---|----------|-------------------|
| Takaran saji 1 bks  | :        | 50 g              |
| Jumlah sajian Per kemasan   | :        | 1                 |
| <b>JUMLAH PER SAJIAN</b>  |          |                   |
| <b>Energi Total</b>   | :        | <b>66,89 kkal</b> |
|   |          | <b>%AKG*</b>      |
| <b>Lemak Total</b>  | 23,89 g  | 34,12%            |
| <b>Karbohidrat Total</b>  | 30,89 g  | 10,68%            |
| <b>Protein</b>  | 12,11 g  | 21,62%            |
| <b>Zat Besi</b>   | 2,78 mg  | 21,38%            |
| <b>Kalsium</b>  | 12,51 mg | 1,04%             |
| *Persen AKG berdasarkan kebutuhan energi 2100 kkal. Kebutuhan energi anda mungkin lebih tinggi atau lebih rendah. |          |                   |

Perkiraan Biaya Produksi *Cookies* Dalam Formula F3

| Bahan                             | Harga       | Penggunaan | Biaya       |
|-----------------------------------|-------------|------------|-------------|
| Kacang Merah                      | 15000/ ½kg  | 50 g       | Rp. 1500,-  |
| Ikan Teri                         | 20000 / ½kg | 75 g       | Rp. 3000,-  |
| ISP Powder                        | 52000/ kg   | 25 g       | Rp. 1300,-  |
| Tepung Terigu                     | 10000/kg    | 50 g       | Rp. 500,-   |
| Telur Ayam                        | 15000/ ½kg  | 20 g       | Rp. 600,-   |
| Gula halus                        | 5000/bks    | 30 g       | Rp. 600,-   |
| Margarin                          | 6500/bks    | 25 g       | Rp. 1000,-  |
| Baking Powder                     | 6000/btl    | 1,5 g      | Rp. 200,-   |
| Vanilla Ekstrak                   | 5000/btl    | 1,5 g      | Rp. 300,-   |
| Kemasan Plastik                   | 1000/pcs    | 1 pcs      | Rp. 1000,-  |
| Stiker                            | 2000/stiker | 1pcs       | Rp. 2000,-  |
| <b>Total Harga (100g Cookies)</b> |             |            | Rp. 12000,- |
| <b>Harga Per Kemasan (50g)</b>    |             |            | Rp. 6000,-  |

**Lampiran 5. Dokumentasi Penelitian  
Proses Penilaian Penelis Semi Terlatih**



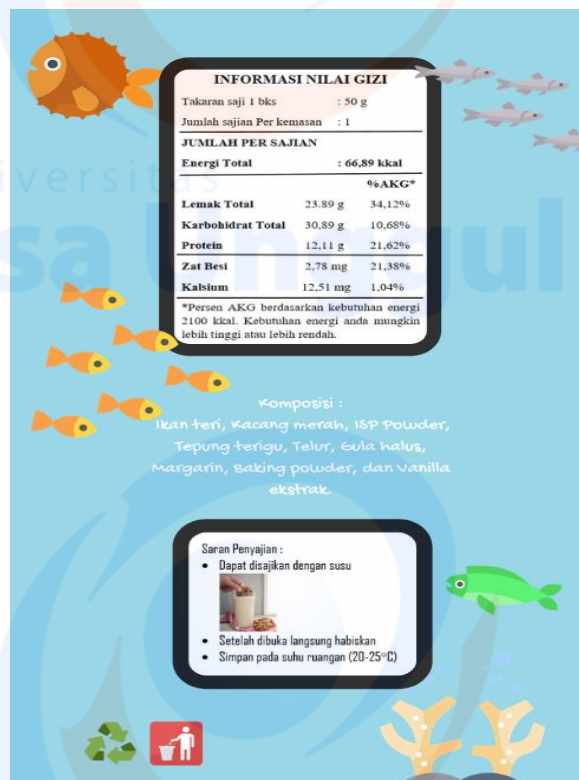
**Proses Produksi Cookies**



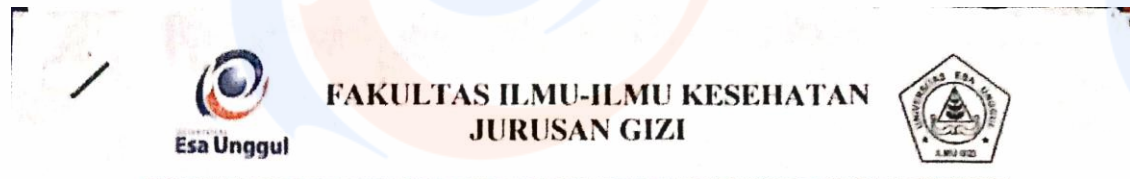
**Proses Penelitian Analisis Zat Gizi**



Lampiran 6. Desain Kemasan



**Lampiran 7. Surat Izin Penggunaan Laboratorium**



Jakarta, 10 September 2019

Perihal : Surat Perizinan

Lampiran :

Dengan hormat,

Sehubungan dengan penyusunan skripsi saya dalam bidang Teknologi Pangan. Saya selaku mahasiswa Ilmu Gizi Universitas Esa Unggul bermaksud untuk meminta izin kepada Bapak/Ibu untuk menggunakan Laboratorium Kuliner dan Laboratorium Uji Organoleptik Universitas Esa Unggul Bekasi yang akan dilaksanakan pada :

Hari/tanggal : 12 September 2019

Pukul : 13.00 - 17.00

Berikut nama mahasiswa dan peminjaman alat yang akan digunakan (Terlampir). Demikian Surat Perizinan ini saya sampaikan. Atas perhatian dan kerjasamanya saya ucapkan terima kasih.

Hormat saya,  
Mahasiswa Gizi

0812-88871004  
Rhatri Dwi Anggraeni

NIM. 201432126

Menyetujui,  
Ka. Prodi Gizi

Dudung Angkasa, S.Gz., M.Gizi, RD

NIP. 211120439

Mengetahui,  
Ka. Laboratorium UEU

Yonatan Eden, M.Sc

*Tolong ya Pak*





**FAKULTAS ILMU-ILMU KESEHATAN  
JURUSAN GIZI**



Jakarta, 12 September 2019

Perihal : Surat Perizinan  
Lampiran :

Dengan hormat,

Sehubungan dengan penyusunan skripsi saya dalam bidang Teknologi Pangan. Saya selaku mahasiswa Ilmu Gizi Universitas Esa Unggul bermaksud untuk meminta izin kepada Bapak untuk menggunakan Laboratorium Kimia Universitas Esa Unggul Kebun Jeruk yang akan dilaksanakan pada :

Hari/tanggal : Jum'at – Sabtu/ 13 - 14 September 2019

Pukul : 09.00 - Selesai

Berikut nama mahasiswa dan peminjaman alat yang akan digunakan (Terlampir). Demikian Surat Perizinan ini saya sampaikan. Atas perhatian dan kerjasamanya saya ucapkan terima kasih.

Hormat saya,  
Mahasiswa Gizi

0812 888 71004  
**Rhatri Dwi Anggraeni**

NIM. 201432126

Menyetujui,  
Ka. Prodi Gizi



**Dudung Angkasa, S.Gz., M.Gizi, RD**

NIP. 211120439

Mengetahui,  
Ka. Laboratorium UEU

**Yonatan Eden, M.Sc**

Lampiran 8. Surat Keterangan Lolos Kaji Etik



**DEWAN PENEGAKAN KODE ETIK UNIVERSITAS ESA UNGGUL  
KOMISI ETIK PENELITIAN**  
Jl. Arjuna Utara No.9 Kebon Jeruk Jakarta Barat 11510  
Telp. 021-5674223 email: dpke@esaunggul.ac.id

Nomor : 0492-19.474/DPKE-KEP/FINAL-EA/UEU/XI/2019

**KETERANGAN LOLOS KAJI ETIK**  
**ETHICAL APPROVAL**

Komisi Etik Penelitian Universitas Esa Unggul dalam upaya melindungi hak asasi dan kesejahteraan subyek penelitian kesehatan, telah mengkaji dengan teliti protokol berjudul:

**PENGEMBANGAN PRODUK COOKIES MENGGUNAKAN BAHAN PANGAN LOKAL DENGAN  
KLAIM TINGGI PROTEIN, KALSIMUM, DAN BESI UNTUK ANAK USIA SEKOLAH**

Peneliti Utama : Rhatri Dwi Anggraeni  
Pembimbing : Dudung Angkasa, S.Gz., M.Gizi, RD  
Nama Institusi : Universitas Esa Unggul  
dan telah menyetujui protokol tersebut di atas.

Jakarta, 8 November 2019

Ketua



Dr. Rokiah Kusumapradja, SKM., MHA

- *Ethical approval* berlaku satu tahun dari tanggal persetujuan.
- Peneliti berkewajiban
  1. Menjaga kerahasiaan identitas subyek penelitian
  2. Memberitahukan status penelitian apabila:
    - a. Setelah masa berlakunya keterangan lolos kaji etik, penelitian masih belum selesai, dalam hal ini *ethical approval* harus diperpanjang
    - b. Penelitian berhenti di tengah jalan
  3. Melaporkan kejadian serius yang tidak diinginkan (*serious adverse events*).
  4. Peneliti tidak boleh melakukan tindakan apapun pada subyek sebelum penelitian lolos kaji etik dan *informed consent*.

## Lampiran 9. Hasil Statistik Uji Hedonik

|         |       | Descriptives |       |                |            |                                  |             |         |         |
|---------|-------|--------------|-------|----------------|------------|----------------------------------|-------------|---------|---------|
|         |       | N            | Mean  | Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | Minimum | Maximum |
|         |       |              |       |                |            | Lower Bound                      | Upper Bound |         |         |
| Rasa    | F0    | 30           | 83,17 | 12,365         | 2,258      | 78,55                            | 87,78       | 58      | 100     |
|         | F1    | 30           | 56,10 | 18,672         | 3,409      | 49,13                            | 63,07       | 15      | 86      |
|         | F2    | 30           | 62,30 | 19,756         | 3,607      | 54,92                            | 69,68       | 25      | 95      |
|         | F3    | 30           | 62,13 | 20,746         | 3,788      | 54,39                            | 69,88       | 25      | 95      |
|         | Total | 120          | 65,93 | 20,699         | 1,890      | 62,18                            | 69,67       | 15      | 100     |
| Warna   | F0    | 30           | 86,77 | 10,030         | 1,831      | 83,02                            | 90,51       | 59      | 100     |
|         | F1    | 30           | 69,30 | 15,211         | 2,777      | 63,62                            | 74,98       | 25      | 90      |
|         | F2    | 30           | 71,27 | 17,130         | 3,128      | 64,87                            | 77,66       | 28      | 91      |
|         | F3    | 30           | 71,70 | 15,468         | 2,824      | 65,92                            | 77,48       | 33      | 95      |
|         | Total | 120          | 74,76 | 16,125         | 1,472      | 71,84                            | 77,67       | 25      | 100     |
| Aroma   | F0    | 30           | 85,07 | 10,309         | 1,882      | 81,22                            | 88,92       | 60      | 99      |
|         | F1    | 30           | 59,03 | 17,379         | 3,173      | 52,54                            | 65,52       | 19      | 87      |
|         | F2    | 30           | 61,73 | 17,201         | 3,140      | 55,31                            | 68,16       | 28      | 91      |
|         | F3    | 30           | 60,90 | 18,635         | 3,402      | 53,94                            | 67,86       | 27      | 95      |
|         | Total | 120          | 66,68 | 19,256         | 1,758      | 63,20                            | 70,16       | 19      | 99      |
| Tekstur | F0    | 30           | 66,17 | 19,219         | 3,509      | 58,99                            | 73,34       | 34      | 95      |
|         | F1    | 30           | 66,33 | 17,825         | 3,254      | 59,68                            | 72,99       | 25      | 95      |
|         | F2    | 30           | 74,43 | 16,421         | 2,998      | 68,30                            | 80,56       | 31      | 95      |
|         | F3    | 30           | 64,17 | 14,617         | 2,669      | 58,71                            | 69,62       | 35      | 90      |
|         | Total | 120          | 67,78 | 17,345         | 1,583      | 64,64                            | 70,91       | 25      | 95      |

**ANOVA**

|         |                | Sum of Squares | df  | Mean Square | F      | Sig. |
|---------|----------------|----------------|-----|-------------|--------|------|
| Rasa    | Between Groups | 12639,692      | 3   | 4213,231    | 12,746 | ,000 |
|         | Within Groups  | 38344,633      | 116 | 330,557     |        |      |
|         | Total          | 50984,325      | 119 |             |        |      |
| Warna   | Between Groups | 5866,158       | 3   | 1955,386    | 9,046  | ,000 |
|         | Within Groups  | 25075,833      | 116 | 216,171     |        |      |
|         | Total          | 30941,992      | 119 |             |        |      |
| Aroma   | Between Groups | 13632,567      | 3   | 4544,189    | 17,288 | ,000 |
|         | Within Groups  | 30491,400      | 116 | 262,857     |        |      |
|         | Total          | 44123,967      | 119 |             |        |      |
| Tekstur | Between Groups | 1860,558       | 3   | 620,186     | 2,120  | ,102 |
|         | Within Groups  | 33942,367      | 116 | 292,607     |        |      |
|         | Total          | 35802,925      | 119 |             |        |      |

**Post Hoc Tests  
Homogeneous Subsets**

**Rasa**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |       |
|---------|----|-------------------------|-------|
|         |    | 1                       | 2     |
| F1      | 30 | 56,10                   |       |
| F3      | 30 | 62,13                   |       |
| F2      | 30 | 62,30                   |       |
| F0      | 30 |                         | 83,17 |
| Sig.    |    | ,217                    | 1,000 |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 30,000.

**Warna**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |       |
|---------|----|-------------------------|-------|
|         |    | 1                       | 2     |
| F1      | 30 | 69,30                   |       |
| F2      | 30 | 71,27                   |       |
| F3      | 30 | 71,70                   |       |
| F0      | 30 |                         | 86,77 |
| Sig.    |    | ,556                    | 1,000 |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 30,000.

**Tekstur**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |       |
|---------|----|-------------------------|-------|
|         |    | 1                       | 2     |
| F3      | 30 | 64,17                   |       |
| F0      | 30 | 66,17                   | 66,17 |
| F1      | 30 | 66,33                   | 66,33 |
| F2      | 30 |                         | 74,43 |
| Sig.    |    | ,648                    | ,079  |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 30,000.

**Aroma**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |       |
|---------|----|-------------------------|-------|
|         |    | 1                       | 2     |
| F1      | 30 | 59,03                   |       |
| F3      | 30 | 60,90                   |       |
| F2      | 30 | 61,73                   |       |
| F0      | 30 |                         | 85,07 |
| Sig.    |    | ,548                    | 1,000 |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 30,000.

## Lampiran 10. Hasil Statistik Uji Mutu Hedonik

|         |       | Descriptives |       |                |            |                                  |             |         |         |  |
|---------|-------|--------------|-------|----------------|------------|----------------------------------|-------------|---------|---------|--|
|         |       | N            | Mean  | Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | Minimum | Maximum |  |
|         |       |              |       |                |            | Lower Bound                      | Upper Bound |         |         |  |
| Rasa    | F0    | 30           | 42,13 | 19,963         | 3,645      | 34,68                            | 49,59       | 10      | 99      |  |
|         | F1    | 30           | 69,63 | 18,404         | 3,360      | 62,76                            | 76,51       | 15      | 94      |  |
|         | F2    | 30           | 77,93 | 15,514         | 2,832      | 72,14                            | 83,73       | 20      | 95      |  |
|         | F3    | 30           | 77,33 | 14,344         | 2,619      | 71,98                            | 82,69       | 50      | 97      |  |
|         | Total | 120          | 66,76 | 22,430         | 2,048      | 62,70                            | 70,81       | 10      | 99      |  |
| Warna   | F0    | 30           | 36,80 | 17,818         | 3,253      | 30,15                            | 43,45       | 10      | 75      |  |
|         | F1    | 30           | 74,40 | 16,439         | 3,001      | 68,26                            | 80,54       | 23      | 95      |  |
|         | F2    | 30           | 74,00 | 14,222         | 2,597      | 68,69                            | 79,31       | 41      | 98      |  |
|         | F3    | 30           | 82,23 | 17,782         | 3,246      | 75,59                            | 88,87       | 10      | 97      |  |
|         | Total | 120          | 66,86 | 24,169         | 2,206      | 62,49                            | 71,23       | 10      | 98      |  |
| Aroma   | F0    | 30           | 75,30 | 26,874         | 4,907      | 65,27                            | 85,33       | 10      | 99      |  |
|         | F1    | 30           | 49,70 | 21,474         | 3,921      | 41,68                            | 57,72       | 15      | 90      |  |
|         | F2    | 30           | 50,83 | 20,780         | 3,794      | 43,07                            | 58,59       | 5       | 95      |  |
|         | F3    | 30           | 50,17 | 20,971         | 3,829      | 42,34                            | 58,00       | 23      | 87      |  |
|         | Total | 120          | 56,50 | 24,895         | 2,273      | 52,00                            | 61,00       | 5       | 99      |  |
| Tekstur | F0    | 30           | 73,73 | 24,493         | 4,472      | 64,59                            | 82,88       | 10      | 97      |  |
|         | F1    | 30           | 67,33 | 18,218         | 3,326      | 60,53                            | 74,14       | 15      | 100     |  |
|         | F2    | 30           | 75,67 | 15,392         | 2,810      | 69,92                            | 81,41       | 36      | 95      |  |
|         | F3    | 30           | 73,23 | 14,576         | 2,661      | 67,79                            | 78,68       | 25      | 93      |  |
|         | Total | 120          | 72,49 | 18,611         | 1,699      | 69,13                            | 75,86       | 10      | 100     |  |

**ANOVA**

|         |                | Sum of Squares | df  | Mean Square | F      | Sig. |
|---------|----------------|----------------|-----|-------------|--------|------|
| Rasa    | Between Groups | 25541,025      | 3   | 8513,675    | 28,770 | ,000 |
|         | Within Groups  | 34326,967      | 116 | 295,922     |        |      |
|         | Total          | 59867,992      | 119 |             |        |      |
| Warna   | Between Groups | 37433,225      | 3   | 12477,742   | 45,120 | ,000 |
|         | Within Groups  | 32079,367      | 116 | 276,546     |        |      |
|         | Total          | 69512,592      | 119 |             |        |      |
| Aroma   | Between Groups | 14157,067      | 3   | 4719,022    | 9,186  | ,000 |
|         | Within Groups  | 59592,933      | 116 | 513,732     |        |      |
|         | Total          | 73750,000      | 119 |             |        |      |
| Tekstur | Between Groups | 1163,425       | 3   | 387,808     | 1,123  | ,343 |
|         | Within Groups  | 40054,567      | 116 | 345,298     |        |      |
|         | Total          | 41217,992      | 119 |             |        |      |

**Post Hoc Tests  
Homogeneous Subsets**

**Rasa**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |       |
|---------|----|-------------------------|-------|
|         |    | 1                       | 2     |
| F0      | 30 | 42,13                   |       |
| F1      | 30 |                         | 69,63 |
| F3      | 30 |                         | 77,33 |
| F2      | 30 |                         | 77,93 |
| Sig.    |    | 1,000                   | ,079  |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 30,000.

**Warna**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |       |
|---------|----|-------------------------|-------|
|         |    | 1                       | 2     |
| F0      | 30 | 36,80                   |       |
| F2      | 30 |                         | 74,00 |
| F1      | 30 |                         | 74,40 |
| F3      | 30 |                         | 82,23 |
| Sig.    |    | 1,000                   | ,072  |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 30,000.

**Aroma**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |       |
|---------|----|-------------------------|-------|
|         |    | 1                       | 2     |
| F1      | 30 | 49,70                   |       |
| F3      | 30 | 50,17                   |       |
| F2      | 30 | 50,83                   |       |
| F0      | 30 |                         | 75,30 |
| Sig.    |    | ,857                    | 1,000 |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 30,000.

**Tekstur**

Duncan<sup>a</sup>

| Formula | N  | Subset for alpha = 0.05 |
|---------|----|-------------------------|
|         |    | 1                       |
| F1      | 30 | 67,33                   |
| F3      | 30 | 73,23                   |
| F0      | 30 | 73,73                   |
| F2      | 30 | 75,67                   |
| Sig.    |    | ,116                    |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 30,000.



## Lampiran 11. Hasil Statistik Zat Gizi

## Oneway

## Descriptives

|        |       | N | Mean     | Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | Minimum | Maximum |
|--------|-------|---|----------|----------------|------------|----------------------------------|-------------|---------|---------|
|        |       |   |          |                |            | Lower Bound                      | Upper Bound |         |         |
| Air    | F0    | 2 | ,7950    | ,57276         | ,40500     | -4,3510                          | 5,9410      | ,39     | 1,20    |
|        | F1    | 2 | 17,8800  | 1,15966        | ,82000     | 7,4609                           | 28,2991     | 17,06   | 18,70   |
|        | F2    | 2 | 17,9150  | ,21920         | ,15500     | 15,9455                          | 19,8845     | 17,76   | 18,07   |
|        | F3    | 2 | 9,4200   | ,19799         | ,14000     | 7,6411                           | 11,1989     | 9,28    | 9,56    |
|        | Total | 8 | 11,5025  | 7,59060        | 2,68368    | 5,1566                           | 17,8484     | ,39     | 18,70   |
| Abu    | F0    | 2 | 3,9550   | ,58690         | ,41500     | -1,3181                          | 9,2281      | 3,54    | 4,37    |
|        | F1    | 2 | 9,6250   | ,72832         | ,51500     | 3,0813                           | 16,1687     | 9,11    | 10,14   |
|        | F2    | 2 | 11,7400  | 2,77186        | 1,96000    | -13,1642                         | 36,6442     | 9,78    | 13,70   |
|        | F3    | 2 | 15,6050  | 2,38295        | 1,68500    | -5,8050                          | 37,0150     | 13,92   | 17,29   |
|        | Total | 8 | 10,2313  | 4,72170        | 1,66937    | 6,2838                           | 14,1787     | 3,54    | 17,29   |
| Serat  | F0    | 2 | 19,7950  | 2,29810        | 1,62500    | -,8526                           | 40,4426     | 18,17   | 21,42   |
|        | F1    | 2 | 61,3100  | 1,55563        | 1,10000    | 47,3332                          | 75,2868     | 60,21   | 62,41   |
|        | F2    | 2 | 30,0300  | ,25456         | ,18000     | 27,7429                          | 32,3171     | 29,85   | 30,21   |
|        | F3    | 2 | 27,3400  | 1,71120        | 1,21000    | 11,9655                          | 42,7145     | 26,13   | 28,55   |
|        | Total | 8 | 34,6188  | 17,00042       | 6,01056    | 20,4060                          | 48,8315     | 18,17   | 62,41   |
| Energi | F0    | 2 | 132,3650 | 4,44770        | 3,14500    | 92,4040                          | 172,3260    | 129,22  | 135,51  |
|        | F1    | 2 | 188,8850 | 3,04763        | 2,15500    | 161,5031                         | 216,2669    | 186,73  | 191,04  |
|        | F2    | 2 | 218,2800 | 2,27688        | 1,61000    | 197,8230                         | 238,7370    | 216,67  | 219,89  |
|        | F3    | 2 | 225,6200 | 4,28507        | 3,03000    | 187,1202                         | 264,1198    | 222,59  | 228,65  |
|        | Total | 8 | 191,2875 | 39,32014       | 13,90177   | 158,4150                         | 224,1600    | 129,22  | 228,65  |

|             |       |   |         |          |         |         |          |       |       |
|-------------|-------|---|---------|----------|---------|---------|----------|-------|-------|
| Lemak       | F0    | 2 | 10,2650 | ,71418   | ,50500  | 3,8484  | 16,6816  | 9,76  | 10,77 |
|             | F1    | 2 | 26,3050 | ,21920   | ,15500  | 24,3355 | 28,2745  | 26,15 | 26,46 |
|             | F2    | 2 | 38,4150 | 1,29401  | ,91500  | 26,7888 | 50,0412  | 37,50 | 39,33 |
|             | F3    | 2 | 47,7950 | ,92631   | ,65500  | 39,4724 | 56,1176  | 47,14 | 48,45 |
|             | Total | 8 | 30,6950 | 15,02579 | 5,31242 | 18,1331 | 43,2569  | 9,76  | 48,45 |
| Protein     | F0    | 2 | ,4050   | ,03536   | ,02500  | ,0873   | ,7227    | ,38   | ,43   |
|             | F1    | 2 | 5,1100  | ,15556   | ,11000  | 3,7123  | 6,5077   | 5,00  | 5,22  |
|             | F2    | 2 | 5,6900  | ,15556   | ,11000  | 4,2923  | 7,0877   | 5,58  | 5,80  |
|             | F3    | 2 | 6,0550  | ,07778   | ,05500  | 5,3562  | 6,7538   | 6,00  | 6,11  |
|             | Total | 8 | 4,3150  | 2,44167  | ,86326  | 2,2737  | 6,3563   | ,38   | 6,11  |
| Karbohidrat | F0    | 2 | 92,7450 | 4,15072  | 2,93500 | 55,4523 | 130,0377 | 89,81 | 95,68 |
|             | F1    | 2 | 56,7400 | 1,25865  | ,89000  | 45,4315 | 68,0485  | 55,85 | 57,63 |
|             | F2    | 2 | 62,6450 | ,41719   | ,29500  | 58,8967 | 66,3933  | 62,35 | 62,94 |
|             | F3    | 2 | 61,7850 | 1,23744  | ,87500  | 50,6671 | 72,9029  | 60,91 | 62,66 |
|             | Total | 8 | 68,4788 | 15,26665 | 5,39758 | 55,7155 | 81,2420  | 55,85 | 95,68 |

## ANOVA

|             |                | Sum of Squares | df | Mean Square | F       | Sig. |
|-------------|----------------|----------------|----|-------------|---------|------|
| Air         | Between Groups | 401,560        | 3  | 133,853     | 304,195 | ,000 |
|             | Within Groups  | 1,760          | 4  | ,440        |         |      |
|             | Total          | 403,320        | 7  |             |         |      |
| Abu         | Between Groups | 141,825        | 3  | 47,275      | 13,283  | ,015 |
|             | Within Groups  | 14,237         | 4  | 3,559       |         |      |
|             | Total          | 156,061        | 7  |             |         |      |
| Serat       | Between Groups | 2012,406       | 3  | 670,802     | 250,902 | ,000 |
|             | Within Groups  | 10,694         | 4  | 2,674       |         |      |
|             | Total          | 2023,101       | 7  |             |         |      |
| Energi      | Between Groups | 10769,897      | 3  | 3589,966    | 272,918 | ,000 |
|             | Within Groups  | 52,616         | 4  | 13,154      |         |      |
|             | Total          | 10822,513      | 7  |             |         |      |
| Lemak       | Between Groups | 1577,331       | 3  | 525,777     | 680,485 | ,000 |
|             | Within Groups  | 3,091          | 4  | ,773        |         |      |
|             | Total          | 1580,421       | 7  |             |         |      |
| Protein     | Between Groups | 41,677         | 3  | 13,892      | 997,647 | ,000 |
|             | Within Groups  | ,056           | 4  | ,014        |         |      |
|             | Total          | 41,732         | 7  |             |         |      |
| Karbohidrat | Between Groups | 1610,976       | 3  | 536,992     | 104,687 | ,000 |
|             | Within Groups  | 20,518         | 4  | 5,129       |         |      |
|             | Total          | 1631,494       | 7  |             |         |      |

**Post Hoc Tests  
Homogeneous Subsets**

**Air**

Duncan<sup>a</sup>

| Formulasi | N | Subset for alpha = 0.05 |        |         |
|-----------|---|-------------------------|--------|---------|
|           |   | 1                       | 2      | 3       |
| F0        | 2 | ,7950                   |        |         |
| F3        | 2 |                         | 9,4200 |         |
| F1        | 2 |                         |        | 17,8800 |
| F2        | 2 |                         |        | 17,9150 |
| Sig.      |   | 1,000                   | 1,000  | ,960    |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 2,000.

**Abu**

Duncan<sup>a</sup>

| Formulasi | N | Subset for alpha = 0.05 |         |         |
|-----------|---|-------------------------|---------|---------|
|           |   | 1                       | 2       | 3       |
| F0        | 2 | 3,9550                  |         |         |
| F1        | 2 |                         | 9,6250  |         |
| F2        | 2 |                         | 11,7400 | 11,7400 |
| F3        | 2 |                         |         | 15,6050 |
| Sig.      |   | 1,000                   | ,325    | ,110    |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 2,000.

**Serat**

Duncan<sup>a</sup>

| Formulasi | N | Subset for alpha = 0.05 |         |         |
|-----------|---|-------------------------|---------|---------|
|           |   | 1                       | 2       | 3       |
| F0        | 2 | 19,7950                 |         |         |
| F3        | 2 |                         | 27,3400 |         |
| F2        | 2 |                         | 30,0300 |         |
| F1        | 2 |                         |         | 61,3100 |
| Sig.      |   | 1,000                   | ,175    | 1,000   |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 2,000.

**Energi**

Duncan<sup>a</sup>

| Formulasi | N | Subset for alpha = 0.05 |          |          |
|-----------|---|-------------------------|----------|----------|
|           |   | 1                       | 2        | 3        |
| F0        | 2 | 132,3650                |          |          |
| F1        | 2 |                         | 188,8850 |          |
| F2        | 2 |                         |          | 218,2800 |
| F3        | 2 |                         |          | 225,6200 |
| Sig.      |   | 1,000                   | 1,000    | ,113     |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 2,000.

**Lemak**

Duncan<sup>a</sup>

| Formulasi | N | Subset for alpha = 0.05 |         |         |         |
|-----------|---|-------------------------|---------|---------|---------|
|           |   | 1                       | 2       | 3       | 4       |
| F0        | 2 | 10,2650                 |         |         |         |
| F1        | 2 |                         | 26,3050 |         |         |
| F2        | 2 |                         |         | 38,4150 |         |
| F3        | 2 |                         |         |         | 47,7950 |
| Sig.      |   | 1,000                   | 1,000   | 1,000   | 1,000   |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 2,000.

**Protein**

Duncan<sup>a</sup>

| Formulasi | N | Subset for alpha = 0.05 |        |        |        |
|-----------|---|-------------------------|--------|--------|--------|
|           |   | 1                       | 2      | 3      | 4      |
| F0        | 2 | ,4050                   |        |        |        |
| F1        | 2 |                         | 5,1100 |        |        |
| F2        | 2 |                         |        | 5,6900 |        |
| F3        | 2 |                         |        |        | 6,0550 |
| Sig.      |   | 1,000                   | 1,000  | 1,000  | 1,000  |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 2,000.

**Karbohidrat**

Duncan<sup>a</sup>

| Formulasi | N | Subset for alpha = 0.05 |         |
|-----------|---|-------------------------|---------|
|           |   | 1                       | 2       |
| F1        | 2 | 56,7400                 |         |
| F3        | 2 | 61,7850                 |         |
| F2        | 2 | 62,6450                 |         |
| F0        | 2 |                         | 92,7450 |
| Sig.      |   | ,063                    | 1,000   |

Means for groups in homogeneous subsets are displayed.  
a. Uses Harmonic Mean Sample Size = 2,000.

## Lampiran 12. Hasil Statistik Uji Zat Besi Dan Kalsium

## Oneway

## Descriptives

|         |       | N | Mean    | Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | Minimum | Maximum |
|---------|-------|---|---------|----------------|------------|----------------------------------|-------------|---------|---------|
|         |       |   |         |                |            | Lower Bound                      | Upper Bound |         |         |
| Kalsium | F0    | 2 | 1,2850  | ,00707         | ,00500     | 1,2215                           | 1,3485      | 1,28    | 1,29    |
|         | F1    | 2 | 8,3450  | ,00707         | ,00500     | 8,2815                           | 8,4085      | 8,34    | 8,35    |
|         | F2    | 2 | 11,1250 | ,00707         | ,00500     | 11,0615                          | 11,1885     | 11,12   | 11,13   |
|         | F3    | 2 | 25,0250 | ,00707         | ,00500     | 24,9615                          | 25,0885     | 25,02   | 25,03   |
|         | Total | 8 | 11,4450 | 9,21729        | 3,25880    | 3,7392                           | 19,1508     | 1,28    | 25,03   |
| Fe      | F0    | 2 | 1,2850  | ,00707         | ,00500     | 1,2215                           | 1,3485      | 1,28    | 1,29    |
|         | F1    | 2 | 2,7850  | ,00707         | ,00500     | 2,7215                           | 2,8485      | 2,78    | 2,79    |
|         | F2    | 2 | 2,3050  | ,00707         | ,00500     | 2,2415                           | 2,3685      | 2,30    | 2,31    |
|         | F3    | 2 | 5,5650  | ,00707         | ,00500     | 5,5015                           | 5,6285      | 5,56    | 5,57    |
|         | Total | 8 | 2,9850  | 1,69444        | ,59907     | 1,5684                           | 4,4016      | 1,28    | 5,57    |

## ANOVA

|         |                | Sum of Squares | df | Mean Square | F           | Sig. |
|---------|----------------|----------------|----|-------------|-------------|------|
| Kalsium | Between Groups | 594,709        | 3  | 198,236     | 3964725,333 | ,000 |
|         | Within Groups  | ,000           | 4  | ,000        |             |      |
|         | Total          | 594,709        | 7  |             |             |      |
| Fe      | Between Groups | 20,098         | 3  | 6,699       | 133984,000  | ,000 |
|         | Within Groups  | ,000           | 4  | ,000        |             |      |
|         | Total          | 20,098         | 7  |             |             |      |

**Post Hoc Tests  
Homogeneous Subsets**

**Kalsium**

Duncan<sup>a</sup>

| Formula | N | Subset for alpha = 0.05 |        |         |         |
|---------|---|-------------------------|--------|---------|---------|
|         |   | 1                       | 2      | 3       | 4       |
| F0      | 2 | 1,2850                  |        |         |         |
| F1      | 2 |                         | 8,3450 |         |         |
| F2      | 2 |                         |        | 11,1250 |         |
| F3      | 2 |                         |        |         | 25,0250 |
| Sig.    |   | 1,000                   | 1,000  | 1,000   | 1,000   |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

**Fe**

Duncan<sup>a</sup>

| Formula | N | Subset for alpha = 0.05 |        |        |        |
|---------|---|-------------------------|--------|--------|--------|
|         |   | 1                       | 2      | 3      | 4      |
| F0      | 2 | 1,2850                  |        |        |        |
| F2      | 2 |                         | 2,3050 |        |        |
| F1      | 2 |                         |        | 2,7850 |        |
| F3      | 2 |                         |        |        | 5,5650 |
| Sig.    |   | 1,000                   | 1,000  | 1,000  | 1,000  |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.