**Lampiran 1**. Bagan Alir Proses Destruksi Basah

Sampel susu balita

kemasan

Ditimbang sebanyak 5 g

Dimasukan dalam erlenmeyer

Ditambahkan 50 ml HNO3 65%

Didiamkan selama 24 jam

Hasil destruksi

Hasil destruksi didinginkan.

Dilakukan pemanasan mula-mula dengan pemanasan yang rendah kemudian panas dinaikan secara perlahan-lahan

Pemanasan dihentikan bila larutan sampel berwarna kuning muda jernih

**Lampiran 2**. Bagan Alir Proses Pembuatan Larutan Sampel

Dimasukan kedalam labu tentukur 50 ml

Disaring dengan kertas saring Whatman No.42

Dimasukkan kedalam botol

Sampel yang telah di destruksi

Filtrat

Lallarutan sampel

Dibuang 10 % filtrat pertama untuk menjenuhkan kertas saring

Diencerkan dangan aqua demeniralisata hingga garis tanda

hHasil

**Lampiran 3.** Pembuatan kurva kalibrasi besi

Larutan standar besi

Dipipet 5 ml

Dimasukkan kedalam labu tentukur 50 ml

Di add kan dengan aqua demineralisata hingga batas tanda

LIB I

Di add kan dengan aqua demineralisata hingga batas tanda

Dilakukan analisis kuantitatif dengan spektrofotometri serapan atom pada λ 248,3 nm untuk Besi

Hasil

Dimasukkan kedalam labu tentukur 10 ml

Dipipet masing-masing 1,6ml, 3,2ml, 4,8ml, 6,4ml, 8ml

**Lampiran 4.** Pembuatan kurva kalibrasi kalsium

Larutan standar kalsium

Dipipet 0,1 ml

Dimasukkan kedalam labu tentukur 50 ml

Di add kan dengan aqua demineralisata hingga batas tanda

LIB I

Di add kan dengan aqua demineralisata hingga batas tanda

Dilakukan analisis kuantitatif dengan spektrofotometri serapan atom pada λ 422,7 nm untuk kalsium

Hasil

Dimasukkan kedalam labu tentukur 10 ml

Dipipet masing-masing 1ml, 2ml, 3ml, 4ml, 5ml

**Lampiran 5.** Penetapan Kadar Besi dan Kalsium Pada Sampel

Larutan Sampel

Dilakukan analisis kuantitatif dengan spektrofotometri serapan atom pada λ 248,3 nm untuk besi , 422,7 nm untuk kalsium

Hasil

**Lampiran 6**. Data Hasil Pengukuran Absorbansi Larutan Standar Besi

Data Hasil Pengukuran Absorbansi Larutan Standar Besi

|  |  |  |
| --- | --- | --- |
| No | Konsentrasi (µg/ml)  ( X ) | Absorbansi  ( Y ) |
| 1 | 1,6000 | 0,0542 |
| 2 | 3,2000 | 0,1310 |
| 3 | 4,8000 | 0,1973 |
| 4 | 6,4000 | 0,2529 |
| 5 | 8,0000 | 0,3066 |

**Lampiran 7**. Data Hasil Pengukuran Absorbansi Larutan Standar Kalsium

Data Hasil Pengukuran Absorbansi Larutan Standar kalsium

|  |  |  |
| --- | --- | --- |
| No | Konsentrasi (ng/ml)  ( X ) | Absorbansi  ( Y ) |
| 1 | 1,0000 | 0,0072 |
| 2 | 2,0000 | 0,0191 |
| 3 | 3,0000 | 0,0272 |
| 4 | 4,0000 | 0,0337 |
| 5 | 5,0000 | 0,0429 |

**Lampiran 8**. Perhitungan Persamaan Garis Regresi

1. Perhitungan Persamaan Garis Regresi besi

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NO | X | Y | XY | X2 | Y2 |
| 1 | 1,6000 | 0,0542 | 0,08672 | 2,56 | 0,00293764 |
| 2 | 3,2000 | 0,1310 | 0,4192 | 10,24 | 0,017161 |
| 3 | 4,8000 | 0,1973 | 0,94704 | 23,04 | 0,03892729 |
| 4 | 6,4000 | 0,2529 | 1,61856 | 40,96 | 0,06395841 |
| 5 | 8,0000 | 0,3066 | 2,4528 | 64 | 0,09400356 |
|  |  |  |  |  |  |
| ∑ | 24 | 0,942 | ∑ = 5,52432 | ∑ = 140,8 | ∑ =0,2169879 |
| Rata2 | 4,8 | = 0,1884 |

a = 

= 

= 0,03916875

 = a + b

b = − a

=0,1884 – (0,03916875) (4,8)

= 0,00039

Maka persamaan garis regresinya adalah: **Y =** 0,03916875x **+** 0,00039



= 

**Lampiran 8.** (Lanjutan )

= 

= 0,99696096

2. Perhitungan Persamaan Garis Regresi Kalsium

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | X | Y | XY | X2 | Y2 |
| 1. | 1,0000 | 0,0072 | 0.0072 | 1,0000 | 0,00005184 |
| 2. | 2,0000 | 0,0191 | 0,0382 | 4,0000 | 0,00036481 |
| 3. | 3,0000 | 0,0272 | 0,0816 | 9,0000 | 0,00073984 |
| 4. | 4,0000 | 0.0337 | 0,1348 | 16,0000 | 0,00113569 |
| 5. | 5,0000 | 0,0429 | 0,2145 | 25,0000 | 0,00184041 |
| ∑ | 15,0000  = 3,0000 | ∑Y = 0,1301  = 0,02602 | ∑ = 0,4763 | ∑ = 55 | ∑ = 0,00413259 |

a = 

= 

= 0,0086

 = a + b

b = − a

=0,02602– (0,0086) (3)

= 0,00022

Maka persamaan garis regresinya adalah: Y = 0,0086x + 0,00022



= 

**Lampiran 8** (lanjutan)

= 

= 0,994776221

**Lampiran 9.** Perhitungan Batas Deteksi (LOD) dan Batas Kuantitasi (LOQ)

1. Perhitungan Batas Deteksi dan Batas Kuantitasi Logam Besi

Y = 0,03916 X + 0,00022

Slope = 0,03916

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Konsentrasi  (µg/ml)  X | Absorbansi  Y | Yi | Y-Yi | (Y-Yi)2 |
| 1 | 1,6000 | 0,0542 | 0,06304 | -0,00884 | 0,000078145 |
| 2 | 3,2000 | 0,1310 | 0,12570 | 0,00530 | 0,000028090 |
| 3 | 4,8000 | 0,1973 | 0,18835 | 0,00895 | 0,000080102 |
| 4 | 6,4000 | 0,2529 | 0,25101 | 0,00189 | 0,000003572 |
| 5 | 8,0000 | 0,3066 | 0,31367 | -0,00707 | 0,000049984 |
| ∑ |  |  |  |  | 0,000239893 |

**=** 



**=** 0,00894

Batas Deteksi (LOD) = 

= 

= 0,68488 

Batas Kuantitasi (LOQ) = 

= 

= 2,28294 

**Lampiran 9. (Lanjutan)**

1. Perhitungan Batas Deteksi dan Batas Kuantitasi Logam Kalsium

Y = 0,0086 X + 0,00022

Slope = 0,0086

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Konsentrasi  (µg/ml)  X | Absorbansi  Y | Yi | Y-Yi | (Y-Yi)2 |
| 1 | 1,0000 | 0,0072 | 0,00882 | -0,00162 | 0,0000026244 |
| 2 | 2,0000 | 0,0191 | 0,01742 | 0,00168 | 0,0000028224 |
| 3 | 3,0000 | 0,0272 | 0.02602 | 0,00118 | 0,0000013924 |
| 4 | 4,0000 | 0.0337 | 0,03462 | -0,00092 | 0,0000008464 |
| 5 | 5,0000 | 0,0429 | 0,04322 | -0,00032 | 0,0000001024 |
| ∑ |  |  |  |  | 0,000007788 |

**=** 



**=** 0,00161121072489

Batas Deteksi (LOD) = 

= 

= 0,5621 

Batas Kuantitasi (LOQ) = 

= 

= 1,8735 

**Lampiran 10.** Hasil Analisis Kadar Besi Pada Susu Balita

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | * 1. Susu A  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Sampel | Berat sampel  (g) | Absorbansi  (A) | Konsentrasi  (µg/ml) | Kadar  (mg/100g) | | 1 | 5,0002 | 0,1639 | 4,1745 | 8,3486 | | 2 | 5,0004 | 0,1618 | 4,1208 | 8,2409 | | 3 | 5,0006 | 0,1557 | 3,9651 | 7,9292 | | 4 | 5,0004 | 0,1558 | 3,9677 | 7,9347 | | 5 | 5,0003 | 0,1558 | 3,9677 | 7,9349 | | 6 | 5,0007 | 0,1726 | 4,3966 | 8,7919 |  * 1. Susu B  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Sampel | Berat sampel  (g) | Absorbansi  (A) | Konsentrasi  (µg/ml) | Kadar  (mg/100g) | | 1 | 5,0007 | 0,1587 | 4,0417 | 8,0822 | | 2 | 5,0003 | 0,1518 | 3,8655 | 7,7305 | | 3 | 5,0004 | 0,1475 | 3,7558 | 7,5109 | | 4 | 5,0006 | 0,1550 | 3,9472 | 7,8934 | | 5 | 5,0004 | 0,1469 | 3,7404 | 7,4802 | | 6 | 5,0002 | 0,1550 | 3,9472 | 7,8940 |   **Lampiran 10. (Lanjutan)**   * 1. Susu C  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Sampel | Berat sampel  (g) | Absorbansi  (A) | Konsentrasi  (µg/ml) | Kadar  (mg/100g) | | 1 | 5,0003 | 0,1206 | 3,0690 | 6,1376 | | 2 | 5,0006 | 0,1169 | 2,9745 | 5,9482 | | 3 | 5,0002 | 0,1127 | 2,8673 | 5,7343 | | 4 | 5,0004 | 0,1171 | 2,9796 | 5,9587 | | 5 | 5,0007 | 0,1066 | 2,7116 | 5,4242 | | 6 | 5,0004 | 0,1109 | 2,8213 | 5,6421 |   **Lampiran 11.** Hasil Analisis Kadar Kalsium Pada Susu Balita   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | 1. Susu A  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Sampel | Berat sampel  (g) | Absorbansi  (A) | Konsentrasi  (µg/ml) | Kadar  (mg/100g) | | 1 | 5,0002 | 0,0294 | 3,3930 | 339,2864 | | 2 | 5,0004 | 0,0283 | 3,2651 | 326,4838 | | 3 | 5,0006 | 0,0278 | 3,2069 | 320,6515 | | 4 | 5,0004 | 0,0280 | 3,2303 | 322,9941 | | 5 | 5,0003 | 0,0288 | 3.3232 | 332,3000 | | 6 | 5,0007 | 0,0305 | 3,5209 | 352,0407 |  1. Susu B  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Sampel | Berat sampel  (g) | Absorbansi  (A) | Konsentrasi  (µg/ml) | Kadar  (mg/100g) | | 1 | 5,0007 | 0,0087 | 0,9860 | 98,5861 | | 2 | 5,0003 | 0,0081 | 0,9162 | 91,6145 | | 3 | 5,0004 | 0,0083 | 0,9395 | 93,9424 | | 4 | 5,0006 | 0,0093 | 1,0558 | 105,5673 | | 5 | 5,0004 | 0,0090 | 1,0209 | 102,0818 | | 6 | 5,0002 | 0,0088 | 0,9976 | 99,7560 |   **Lampiran 11** (Lanjutan)   1. Susu C  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Sampel | Berat sampel  (g) | Absorbansi  (A) | Konsentrasi  (µg/ml) | Kadar  (mg/100g) | | 1 | 5,0003 | 0,0377 | 4,3581 | 435,7838 | | 2 | 5,0006 | 0,0373 | 4,3116 | 431,1082 | | 3 | 5,0002 | 0,0374 | 4,3232 | 432,3027 | | 4 | 5,0004 | 0,0387 | 4,4744 | 447,4042 | | 5 | 5,0007 | 0,0396 | 4,5790 | 457,8359 | | 6 | 5,0004 | 0,0379 | 4,3813 | 438,0949 |   **Lampiran 12.** Contoh perhitungan kadar Besi pada Sampel susu Balita   1. Contoh Perhitungan Kadar Besi Pada Susu A   Berat sampel yang ditimbang = 5,0002 g  Absorbansi = 0,1639  Persamaan Regresi Y = 0,03916875X + 0,00039  X =  = 4,1745  Konsentrasi = 4,1745µg/ml  Kadar (µg/g) =  =  = 83,4866 µg/g  = 8,3486 mg/100g   1. Contoh Perhitungan Kadar Besi Pada Susu B   Berat sampel yang ditimbang = 5,0007 g  Absorbansi = 0,1586  Persamaan Regresi Y = 0,03916875X + 0,00039  X =  = 4,0417  Konsentrasi = 4,0417 µg/ml  Kadar (µg/g) =  =  = 80,8226 µg/g  = 8,0822 mg/100 g  **Lampiran 12.** (Lanjutan)   1. Contoh Perhitungan Kadar Besi Pada susu C   Berat sampel yang ditimbang = 5,0003 g  Absorbansi = 0,1206  Persamaan Regresi Y = 0,03916875X + 0,00039  X =  = 3,0690  Konsentrasi = 3,0690 µg/ml  Kadar (µg/g) =  =  = 61,3763 µg/g  = 6,1376 mg/1  **Lampiran 13.** Contoh perhitungan kadar Kalsium pada Sampel susu Balita   1. Contoh Perhitungan Kadar Kalsium Pada Susu A   Berat sampel yang ditimbang = 5,0002 g  Absorbansi = 0,0294  Persamaan Regresi Y = 0,0086 x + 0,00022  X =  = 3,3930  Konsentrasi = 3,3930 µg/ml  Kadar (µg/g) =  =  = 3392,8642 µg/g  = 339,2864 mg/100g   1. Contoh Perhitungan Kadar Kalsium Pada Susu B   Berat sampel yang ditimbang = 5,0007 g  Absorbansi = 0,0087  Persamaan Regresi Y = 0,0086 x + 0,00022  X =  = 0,9860  Konsentrasi = 0,9860 µg/ml  Kadar (µg/g) =  =  = 985,8619 µg/g  = 98,5861 mg/100 g  **Lampiran 13.** (Lanjutan)   1. Contoh Perhitungan Kadar Kalsium Pada Susu C   Berat sampel yang ditimbang = 5,0003 g  Absorbansi = 0,0377  Persamaan Regresi Y = 0,0086 x + 0,00022  X =  = 4,3581  Konsentrasi = 4,3581 µg/ml  Kadar (µg/g) =  =  = 4357,8385 µg/g  = 435,7838 mg/100 g  **Lampiran 14. .**Perhitungan Statistik Kadar Besi dalam Sampel Susu Balita   1. Susu A  |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 8,3486 | 0,1519 | 0,02307361 | | 2. | 8,2409 | 0,0442 | 0,00195364 | | 3. | 7,9292 | -0,2675 | 0,07155625 | | 4. | 7,9347 | -0,262 | 0,068644 | | 5. | 7,9349 | -0,2618 | 0,06853924 | | 6. | 8,7919 | 0,5952 | 0,35426304 | | n=6 | **∑** X **=** 49,1802  **=** 8,1967 | | ∑ = 0,58802978 |   SD =  =  = 0,3429  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 5, n=6 diperoleh nilai t tabel = α/2, dk = 4,0321 Data diterima jika thitung < t tabel  thitung=  thitung 1 = = 1,0850  thitung 2 = = 0,3157  thitung 3 = = 1,9108  thitung 4 = = 1,8700  thitung 5 = = 1,8700  thitung 6 = = 4,2516 (Ditolak)  **Lampiran 14**. (Lanjutan)  Data ke- 6 ditolak, oleh karena itu perhitungan diulangi dengan cara yang  sama tanpa mengikut sertakan data ke- 6   |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 8,3486 | 0,271 | 0,073441 | | 2. | 8,2409 | 0,1633 | 0,026666689 | | 3. | 7,9292 | -0,1484 | 0,02202256 | | 4. | 7,9347 | -0,1429 | 0,02042041 | | 5. | 7,9349 | -0,1427 | 0,02036329 | | n=6 | **∑** X **=** 40,3883  **=** 8,0776 | | ∑ = 0,16291415 |   SD =  =  = 0,2018  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 4, n=5 diperoleh nilai t tabel = α/2, dk = 4,6041 Data diterima jika thitung < t tabel  thitung=  thitung 1 = =3,2893  thitung 2 = = 1,9820  thitung 3 = = 1,8012  thitung 4 = = 1,7344  thitung 5 = = 1,7320  Semua data dapat diterima karena thitung < t table, maka kadar sebenarnya adalah  µ = ± (t (α/2,dk) X SD /  µ = 8,0776 mg/100g ± (4,6041X 0,2018 /)  µ = 8,0776 ± 0,4155 mg/100g  **Lampiran 14**. (Lanjutan)   1. Susu B  |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 8,0822 | 0,317 | 0,100489 | | 2. | 7,7305 | -0,0347 | 0,00120409 | | 3. | 7,5109 | -0,2543 | 0,06466849 | | 4. | 7,8934 | 0,1282 | 0,01643524 | | 5. | 7,4802 | -0,285 | 0,081225 | | 6. | 7,8940 | 0,1288 | 0,01658944 | | n=6 | **∑** X **=** 46,5912  **=** 7,7652 | | ∑ = 0,28057116 |   SD =  =  = 0,2368  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 5, n=6 diperoleh nilai t tabel = α/2, dk = 4,0321 Data diterima jika thitung < t tabel  thitung=  thitung 1 = = 3,2789  thitung 2 = = 0,3589  thitung 3 = = 2,6304  thitung 4 = = 1,3260  thitung 5 = = 2,9479  thitung 6 = = 1,3322  Semua data dapat diterima karena thitung < t table, maka kadar sebenarnya adalah  µ = ± (t (α/2,dk) X SD /  µ = 7,7652 mg/100g ± (4,0321 /)  µ = 7,7652 ± 0,3898 mg/100g  **Lampiran 14.** (Lanjutan)   1. Susu C  |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 6,1376 | 0.3304 | 0,10916416 | | 2. | 5,9482 | 0,141 | 0,019881 | | 3. | 5,7343 | -0,0729 | 0,00531441 | | 4. | 5,9587 | -0.1515 | 0,02295225 | | 5. | 5,4224 | -0,3848 | 0,14807104 | | 6. | 5,6421 | -0,1651 | 0,02725801 | | n=6 | **∑** X **=** 34,8433  **=** 5,8072 | | ∑ = 0,33264087 |   SD =  =  = 0,2579  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 5, n=6 diperoleh nilai t tabel = α/2, dk = 4,0321 Data diterima jika thitung < t tabel  thitung=  thitung 1 = = 3,1379  thitung 2 = = 1,3391  thitung 3 = = 0,6923  thitung 4 = = 1,4388  thitung 5 = = 3,6546  thitung 6 = = 1,5680  Semua data dapat diterima karena thitung < t tabel, maka kadar sebenarnya adalah  µ = ± (t (α/2,dk) X SD /  µ = 5,8072 mg/100g ± (4,03210,2579/)  µ = 5,8072 mg ± 0,4245mg/100g  **Lampiran 15.** Perhitungan Statistik Kalsium dalam Sampel Susu Balita   1. Susu A  |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 339,2864 | 6,8937 | 47,52309969 | | 2. | 326,4838 | -5,9089 | 34,91509921 | | 3. | 320,6515 | -11,7412 | 137,85577744 | | 4. | 322,9941 | -9,3986 | 88,33368196 | | 5. | 332,3000 | -0,0927 | 0,00859329 | | 6. | 352,6407 | 20,248 | 409,981504 | | n=6 | **∑** X **=** 1994,3556  **=** 332,3927 | | ∑ = 718,61775559 |   SD =  =  = 11,9884  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 5, n=6 diperoleh nilai t tabel = α/2, dk = 4,0321 Data diterima jika thitung < t tabel  33thitung=  thitung 1 = = 1,4087  thitung 2 = = 1,2072  thitung 3 = = 2,3988  thitung 4 = = 1,9202  thitung 5 = = 0,0189  thitung 6 = = 4,1369 (Ditolak)  **Lampiran 15.** (Lanjutan)  Data ke- 6 ditolak, oleh karena itu perhitungan diulangi dengan cara yang  sama tanpa mengikut sertakan data ke- 6   |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 339,2864 | 10,9433 | 119,75581489 | | 2. | 326,4838 | -1,8593 | 3,45699649 | | 3. | 320,6515 | -7,6916 | 59,16071056 | | 4. | 322,9941 | -5,349 | 28,611801 | | 5. | 332,3000 | 3,9569 | 15,65705761 | | n=6 | **∑** X **=** 1641,7158  **=** 328,3431 | | ∑ = 226,642447 |   SD =  =  = 7,5273  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 4, n=5 diperoleh nilai t tabel = α/2, dk = 4,6041 Data diterima jika thitung < t tabel  thitung=  thitung 1 = = 3,5609  thitung 2 = = 0,6050  thitung 3 = = 2,5028  thitung 4 = = 1,7405  thitung 5 = = 1,2875  Semua data dapat diterima karena thitung < t table, maka kadar sebenarnya adalah  µ = ± (t (α/2,dk) X SD /  µ = 328,3431mg/100g ± (4,6041 /)  µ = 328,3431± 15,4993 mg/100g  **Lampiran 15.** (Lanjutan)   1. Susu B  |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 98,5861 | -0,1385 | 0,01918225 | | 2. | 91,6145 | -7,1101 | 50,55352201 | | 3. | 105,5673 | -4,7822 | 22,86943684 | | 4. | 102,8818 | 6,8427 | 46,82254329 | | 5. | 99,7560 | 4,1572 | 17,28231124 | | 6. | 99,7560 | 1,0314 | 1,06378596 | | n=6 | **∑** X **=** 592,3481  **=** 98,7246 | | ∑ = 138,61078219 |   SD =  =  = 5,2651  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 5, n=6 diperoleh nilai t tabel = α/2, dk = 4,0321 Data diterima jika thitung <ttabel  thitung=  thitung 1 = = 0,0644  thitung 2 = = 3,3077  thitung 3 = = 2,2247  thitung 4 = = 3,1833  thitung 5 = = 1,9340  thitung 6 = = 0,4798  Semua data dapat diterima karena thitung < t table, maka kadar sebenarnya adalah  µ = ± (t (α/2,dk) X SD /  µ = 98,7246mg/100g ± (4,03215,2651/)  µ = 98,7246± 8,6669 mg/100g  **Lampiran 15.** (Lanjutan)   1. Susu C  |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 435,7838 | -4,6378 | 21,50918884 | | 2. | 431,1081 | -9,3134 | 86,73941956 | | 3. | 432,3027 | -8,1189 | 65,91653721 | | 4. | 447,4042 | 6,9826 | 48,75670276 | | 5. | 457,8359 | 17,4143 | 303,25784449 | | 6. | 438,0949 | -2,3267 | 5,41353289 | | n=6 | **∑** X **=** 2,642,5297  **=** 440,4216 | | ∑ = 531,593226 |   SD =  =  = 10,3110  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 5, n=6 diperoleh nilai t tabel = α/2, dk = 4,0321 Data diterima jika thitung <ttabel  thitung=  thitung 1 = = 1,1017  thitung 2 = = 2,2124  thitung 3 = = 1,9286  thitung 4 = = 1,6587  thitung 5 = = 4,1368 (Ditolak)  thitung 6 = = 0,5527  **Lampiran 15.** (Lanjutan)  Data ke- 5 ditolak, oleh karena itu perhitungan diulangi dengan cara yang  sama tanpa mengikut sertakan data ke- 5   |  |  |  |  | | --- | --- | --- | --- | | No. | Kadar  (X)mg/100 g | X **-** |  | | 1. | 435,7838 | 1,1549 | 1,33379401 | | 2. | 431,1082 | 5,8305 | 33,99473025 | | 3. | 432,3027 | 4,636 | 21,492496 | | 4. | 447,4042 | 10,4655 | 109,52669025 | | 6. | 438.0949 | 1,1562 | 1,33679844 | | n=6 | **∑** X **=** 2,187,6938  **=** 436,9387 | | ∑ = 167,684509 |   SD =  =  = 6,4746  Pada interval kepercayaan 99% dengan nilai α = 0,01, dk = 5, n=6 diperoleh nilai t tabel = α/2, dk = 4,0321 Data diterima jika thitung <ttabel  thitung=  thitung 1 = = 0,4369  thitung 2 = = 2,2057  thitung 3 = = 1,7538  thitung 4 = = 3,9592  thitung 6 = = 3,9592  Semua data dapat diterima karena thitung < t table, maka kadar sebenarnya adalah  µ =± (t (α/2,dk) X SD /  µ = 436,9327mg/100g ± (4,60416,4746/)  µ = 436,9327±13,3316 mg/100  **Lampiran 16.** Rekapitulasi Data Kadar Besi pada Susu Balita   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Mineral | Sampel | N0 | Absorbansi | Konsentrasi | Kadar | |  | (A) | (µg/ml) | (mg/100g) | | BESI | SUSU A | 1 | 0,1639 | 4,1745 | 8,3486 | | 2 | 0,1618 | 4,1208 | 8,2409 | | 3 | 0,1557 | 3,9651 | 7,9292 | | 4 | 0,1558 | 3,9677 | 7,9347 | | 5 | 0,1558 | 3,9677 | 7,9349 | | 6 | 0,1726 | 4,3966 | 8,7919 | | RATA-RATA |  |  |  | 8,1967 | | SD |  |  |  | 0,3429 | | KADAR SEBENARNYA |  |  |  | 8,0776± 0,4155 | | SUSU B | 1 | 0,1587 | 4,0417 | 8,0822 | | 2 | 0,1518 | 3,8655 | 7,7305 | | 3 | 0,1475 | 3,7558 | 7,5109 | | 4 | 0,1550 | 3,9472 | 7,8934 | | 5 | 0,1469 | 3,7404 | 7,4802 | | 6 | 0,1550 | 3,9472 | 7,8940 | | RATA-RATA |  |  |  | 7,7652 | | SD |  |  |  | 0,2368 | | KADAR  SEBENARNYA |  |  |  | 7,7652± 0,3898 | | SUSU C | 1 | 0,1206 | 3,0690 | 6,1376 | | 2 | 0,1169 | 2,9745 | 5,9482 | | 3 | 0,1127 | 2,8673 | 5,7343 | | 4 | 0,1171 | 2,9796 | 5,9587 | | 5 | 0,1066 | 2,7116 | 5,4242 | | 6 | 0,1109 | 2,8213 | 5,6421 | | RATA-RATA |  |  |  | 5,8072 | | SD |  |  |  | 0,2579 | | KADAR  SEBENARNYA |  |  |  | 5,8072± 0,4245 |   **Lampiran 17.** Rekapitulasi Data Kadar Kalsium pada Susu Balita   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Mineral | Sampel | N0 | Absorbansi | Konsentrasi | Kadar | |  | (A) | (µg/ml) | (mg/100g) | | KALSIUM | SUSU A | 1 | 0,0294 | 3,3930 | 339,2864 | | 2 | 0,0283 | 3,2651 | 326,4838 | | 3 | 0,0278 | 3,2069 | 320,6515 | | 4 | 0,0280 | 3,2303 | 322,9941 | | 5 | 0,0288 | 3.3232 | 332,3000 | | 6 | 0,0305 | 3,5209 | 352,0407 | | RATA-RATA |  |  |  | 332,3927 | | SD |  |  |  | 11,9884 | | KADAR SEBENARNYA |  |  |  | 328,3431±15,4993 | | SUSU B | 1 | 0,0087 | 0,9860 | 98,5861 | | 2 | 0,0081 | 0,9162 | 91,6145 | | 3 | 0,0083 | 0,9395 | 93,9424 | | 4 | 0,0093 | 1,0558 | 105,5673 | | 5 | 0,0090 | 1,0209 | 102,0818 | | 6 | 0,0088 | 0,9976 | 99,7560 | | RATA-RATA |  |  |  | 98,7246 | | SD |  |  |  | 5,2651 | | KADAR  SEBENARNYA |  |  |  | 98,7246±8,669 | | SUSU C | 1 | 0,0377 | 4,3581 | 435,7838 | | 2 | 0,0373 | 4,3116 | 431,1082 | | 3 | 0,0374 | 4,3232 | 432,3027 | | 4 | 0,0387 | 4,4744 | 447,4042 | | 5 | 0,0396 | 4,5790 | 457,8359 | | 6 | 0,0379 | 4,3813 | 438,0949 | | RATA-RATA |  |  |  | 440,4216 | | SD |  |  |  | 10,3110 | | KADAR  SEBENARNYA |  |  |  | 436,9387±13,3316 |   C:\Users\MY COMPUTER\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\IMG-20180516-WA0012.jpg**Lampiran 18**. Alat yang digunakan saat penelitian  Alat Spektrofotometer Serapan Atom  C:\Users\MY COMPUTER\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\IMG-20180518-WA0005.jpg  Neraca Analitik  C:\Users\ASUS\AppData\Local\Microsoft\Windows\INetCache\Content.Word\IMG_20190210_205520.jpg  Sampel susu Balita  IMG_20190218_114717  Sampel sebelum didestruksi  IMG_20190219_092754  Sampel hasil destruksi basah + aquademineralisata  **Lampiran 19**. Tabel Distribusi t | |

