Lampiran 1. Pembuatan larutan baku ibuprofen 1000 ppm

Data perhitungan akan dibuat 1000 ppm, maka :

$$\frac{1000\ \text{mg}}{1000\ \text{mL}} = \frac{10\ \text{mg}}{10\ \text{mL}}$$

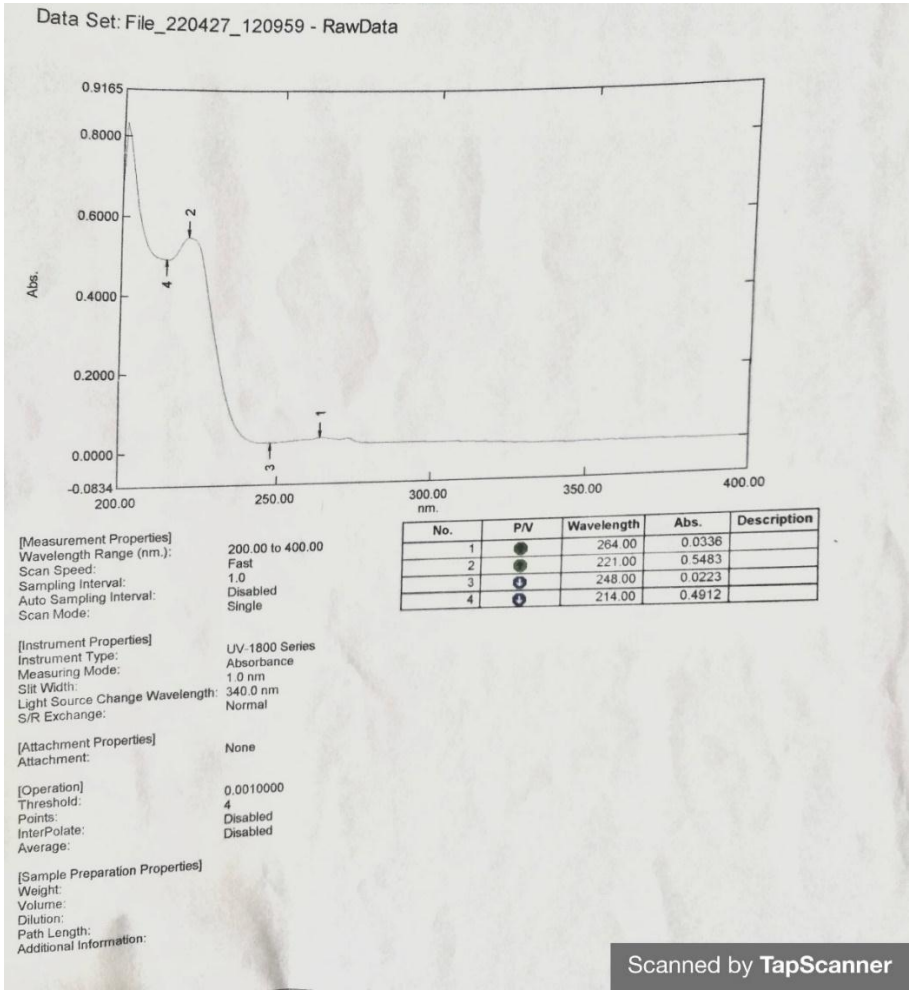
Data penimbangan :

Bobot kertas kosong = 0,2772 g
Berat kertas + zat = 0,2876 g
Berat kertas + sisa = 0,2774 g
Zat tertimbang = 0,0102 g

Bobot sampel = 0,0102 g ⟶ 10,2 mg setara dengan 10 mg

Jadi pembuatan larutan baku ibuprofen dengan menimbang 10,2 mg dimasukan ke dalam labu takar 10 mL ditambah methanol sampai tanda batas.

Lampiran 2. Data Panjang Gelombang Maksimum



No.	P/V	Wavelength	Abs.	Description
1		264.00	0.0336	
2		221.00	0.5483	
3		248.00	0.0223	
4		214.00	0.4912	

[Measurement Properties]
Wavelength Range (nm.): 200.00 to 400.00
Scan Speed: Fast
Sampling Interval: 1.0
Auto Sampling Interval: Disabled
Scan Mode: Single

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

[Operation]
Threshold: 0.0010000
Points: 4
InterPolate: Disabled
Average: Disabled

[Sample Preparation Properties]
Weight:
Volume:
Dilution:
Path Length:
Additional Information:

Panjang gelombang maksimum ibuprofen pada penelitian ini adalah 221 nm dengan absorbansi sebesar 0,5483.

Lampiran 3. Data Operating Time (OT)

waktu (menit)	absorbansi
0	0,541
1	0,541
2	0,542
3	0,544
4	0,546
5	0,547
6	0,548
7	0,548
8	0,55
9	0,551
10	0,551
11	0,552
12	0,552
13	0,554
14	0,554
15	0,555
16	0,556
17	0,557
18	0,558
19	0,559
20	0,561
21	0,561
22	0,562
23	0,563
24	0,564
25	0,564
26	0,565
27	0,566
28	0,566
29	0,567
30	0,568

waktu (menit)	absorbansi
31	0,568
32	0,569
33	0,57
34	0,572
35	0,572
36	0,573
37	0,573
38	0,573
39	0,574
40	0,574
41	0,575
42	0,576
43	0,576
44	0,577
45	0,577
46	0,578
47	0,578
48	0,579
49	0,58
50	0,58
51	0,582
52	0,582
53	0,583
54	0,583
55	0,583
56	0,585
57	0,585
58	0,586
59	0,586
60	0,588

Lampiran 4. Perhitungan pembuatan kurva kalibrasi

1. Konsentrasi 6 ppm

$V_1 . N_1$	$= V_2 . N_2$
V_1 . 100 ppm	= 10 mL . 6 ppm
V_1	= 0,6 mL

2. Konsentrasi 8 ppm

$V_1 . N_1$	$= V_2 . N_2$
V_1 . 100 ppm	= 10 mL . 8 ppm
V_1	= 0,8 mL

3. Konsentrasi 10 ppm

$V_1 . N_1$	$= V_2 . N_2$
V_1 . 100 ppm	= 10 mL . 10 ppm
V_1	= 1,0 mL

4. Konsentrasi 12 ppm

$V_1 . N_1$	$= V_2 . N_2$
V_1. 100 ppm	= 10 mL . 12 ppm
V_1	= 1,2 mL

5. Konsentrasi 14 ppm

$V_1 . N_1$	$= V_2 . N_2$
V_1. 100 ppm	= 10 mL . 14 ppm
V_1	= 1,4 mL

Lampiran 5. Data absorbansi kurva baku

Volume pipet (mL)	Labu takar (mL)	Konsentrasi (ppm)	Absorbansi (Abs)
0,6	10	6	0,322
0,8	10	8	0,435
1,0	10	10	0,554
1,2	10	12	0,645
1,4	10	14	0,741

Dari data kurva baku di atas didapatkan nilai a = 0,0154; b = 0,0524; r = 0,9969

Persamaan regresi linier : y = a + bx

y = 0,0154 + 0,0524x

Lampiran 6. Perhitungan penetapan kadar sampel

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{mg}{mL}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\ 100\%$$

Faktor pengenceran sampel

$$\text{Factor pengenceran} = \frac{\text{Volume labu takar}}{\text{volume sampel}}$$

$$\text{Factor pengenceran} = \frac{10}{2} = 5x$$

$$\text{Factor pengenceran} = \frac{10}{1} = 10x$$

Totalnya 5 x 10 = 50 kali

1. Sebelum penyimpanan

a. Sampel A1

y = a + bx

0,544 = 0,0154 + 0,0524 x

x = 0,5286/0,0524

x = 10,087 µg/mL

x = 0,010087 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{mg}{mL}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\ 100\%$$

$$= \frac{0{,}010087 \left(\frac{mg}{mL}\right) \text{x 50 x 100 mL}}{\text{50 mg}} \; x\ 100\%$$

$$= \frac{50{,}435 \text{ mg}}{\text{50 mg}} \; x\ 100\%$$

= 100,87 %

b. Sampel A2

y = a + bx

0,535 = 0,0154 + 0,0524 x

x = 0,5196/0,0524

x = 9,916 µg/mL

x = 0,009916 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{mg}{mL}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\ 100\%$$

$$= \frac{0{,}009916 \left(\frac{mg}{mL}\right) \text{x 50 x 100 mL}}{\text{50 mg}} \; x\ 100\%$$

$$= \frac{49{,}58 \text{ mg}}{\text{50 mg}} \; x\ 100\%$$

= 99,16 %

c. Sampel A3

y = a + bx

0,557 = 0,0154 + 0,0524 x

x = 0,5416/0,0524

x = 10,335 µg/mL

x = 0,010335 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010335 \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x 50 x 100 mL}}{\text{50 mg}} \; x \; 100\%$$

$$= \frac{51{,}675 \text{ mg}}{\text{50 mg}} \; x \; 100\%$$

= 103,35 %

d. Sampel A4

y = a + bx

0,553 = 0,0154 + 0,0524 x

x = 0,5376/0,0524

x = 10,259 µg/mL

x = 0,010259 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010259 \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x 50 x 100 mL}}{\text{50 mg}} \; x \; 100\%$$

$$= \frac{51{,}295 \text{ mg}}{\text{50 mg}} \; x \; 100\%$$

= 102,59 %

e. Sampel B1

y = a + bx

0,555 = 0,0154 + 0,0524 x

x = 0,5396/0,0524

x = 10,297 µg/mL

x = 0,010297 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010297 \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x 50 x 100 mL}}{\text{50 mg}} \; x \; 100\%$$

$$= \frac{51{,}485 \text{ mg}}{\text{50 mg}} \; x \; 100\%$$

= 102,97 %

f. Sampel B2

y = a + bx

0,573 = 0,0154 + 0,0524 x

x = 0,5576/0,0524

x = 10,641 µg/mL

x = 0,010641 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010641 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{53{,}205 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 106,41 %

g. Sampel B3

y = a + bx

0,578 = 0,0154 + 0,0524 x

x = 0,5626/0,0524

x = 10,736 µg/mL

x = 0,010736 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010736 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{53{,}68 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 107,36 %

h. Sampel B4

y = a + bx

0,551 = 0,0154 + 0,0524 x

x = 0,5356/0,0524

x = 10,221 µg/mL

x = 0,010221 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010221 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{51{,}105 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 102,21 %

i. Sampel C1

y = a + bx

0,546 = 0,0154 + 0,0524 x
x = 0,5306/0,0524
x = 10,125 µg/mL
x = 0,010125 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\; 100\%$$

$$= \frac{0{,}010125 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x\; 100\%$$

$$= \frac{50{,}625 \text{ mg}}{50 \text{ mg}} \; x\; 100\%$$

= 101,25 %

j. Sampel C2

y = a + bx
0,556 = 0,0154 + 0,0524 x
x = 0,5406/0,0524
x = 10,316 µg/mL
x = 0,010316 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\; 100\%$$

$$= \frac{0{,}010316 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x\; 100\%$$

$$= \frac{51{,}58 \text{ mg}}{50 \text{ mg}} \; x\; 100\%$$

= 103,16 %

k. Sampel C3

y = a + bx
0,567 = 0,0154 + 0,0524 x
x = 0,5516/0,0524
x = 10,526 µg/mL
x = 0,010526 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\; 100\%$$

$$= \frac{0{,}010526 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x\; 100\%$$

$$= \frac{52{,}63 \text{ mg}}{50 \text{ mg}} \; x\; 100\%$$

= 105,26 %

l. Sampel C4

y = a + bx

0,552 = 0,0154 + 0,0524 x

x = 0,5366/0,0524

x = 10,240 µg/mL

x = 0,010240 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\ 100\%$$

$$= \frac{0{,}010240 \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x 50 x 100 mL}}{\text{50 mg}} \; x\ 100\%$$

$$= \frac{51{,}2 \text{ mg}}{\text{50 mg}} \; x\ 100\%$$

= 102,4 %

Sampel	Absorbansi	% kadar
A1	0,544	100,87
A2	0,535	99,16
A3	0,557	103,35
A4	0,553	102,59
B1	0,555	102,97
B2	0,573	106,41
B3	0,578	107,36
B4	0,551	102,21
C1	0,546	101,25
C2	0,556	103,16
C3	0,567	105,26
C4	0,552	102,4

2. Setelah penyimpanan

a. Sampel A1

y = a + bx

0,437 = 0,0154 + 0,0524 x

x = 0,4216/0,0524

x = 8,045 µg/mL

x = 0,008045 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\; 100\%$$

$$= \frac{0{,}008045 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x\; 100\%$$

$$= \frac{40{,}225 \text{ mg}}{50 \text{ mg}} \; x\; 100\%$$

= 80,45 %

b. Sampel A2

y = a + bx

0,215 = 0,0154 + 0,0524 x

x = 0,1996/0,0524

x = 3,810 µg/mL

x = 0,003810 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\; 100\%$$

$$= \frac{0{,}003810 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x\; 100\%$$

$$= \frac{19{,}05 \text{ mg}}{50 \text{ mg}} \; x\; 100\%$$

= 38,1 %

c. Sampel A3

y = a + bx

0,155 = 0,0154 + 0,0524 x

x = 0,1396/0,0524

x = 2,664 µg/mL

x = 0,002664 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x\; 100\%$$

$$= \frac{0{,}002664 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x\; 100\%$$

$$= \frac{13{,}32 \text{ mg}}{50 \text{ mg}} \; x\; 100\%$$

= 26,64 %

d. Sampel A4

y = a + bx

0,105 = 0,0154 + 0,0524 x

x = 0,0896/0,0524

x = 1,710 µg/mL

x = 0,001710 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}001710 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{8{,}55 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 17,1 %

e. Sampel B1

y = a + bx

0,547 = 0,0154 + 0,0524 x

x = 0,5316/0,0524

x = 10,145 µg/mL

x = 0,010145 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010145 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{50{,}725 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 101,45 %

f. Sampel B2

y = a + bx

0,569 = 0,0154 + 0,0524 x

x = 0,5536/0,0524

x = 10,564 µg/mL

x = 0,010564mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010564 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{52{,}82 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 105,64 %

g. Sampel B3

y = a + bx
0,577 = 0,0154 + 0,0524 x
x = 0,5616/0,0524
x = 10,717 µg/mL
x = 0,010717 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}010717 \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x 50 x 100 mL}}{\text{50 mg}} \; x \; 100\%$$

$$= \frac{53{,}585 \text{ mg}}{\text{50 mg}} \; x \; 100\%$$

= 107,17 %

h. Sampel B4

y = a + bx
0,533 = 0,0154 + 0,0524 x
x = 0,5176/0,0524
x = 9,877 µg/mL
x = 0,009877 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}009877 \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x 50 x 100 mL}}{\text{50 mg}} \; x \; 100\%$$

$$= \frac{49{,}385 \text{ mg}}{\text{50 mg}} \; x \; 100\%$$

= 98,77 %

i. Sampel C1

y = a + bx
0,476 = 0,0154 + 0,0524 x
x = 0,4606/0,0524
x = 8,790 µg/mL
x = 0,008790 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}008790 \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x 50 x 100 mL}}{\text{50 mg}} \; x \; 100\%$$

$$= \frac{43{,}95 \text{ mg}}{\text{50 mg}} \; x \; 100\%$$

= 87,9 %

j. Sampel C2

y = a + bx

0,701 = 0,0154 + 0,0524 x

x = 0,6856/0,0524

x = 13,083 µg/mL

x = 0,013083 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}013083 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{65{,}415 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 130,83 %

k. Sampel C3

y = a + bx

0,257 = 0,0154 + 0,0524 x

x = 0,2416/0,0524

x = 4,610 µg/mL

x = 0,004610 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}004610 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{23{,}05 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 46,1 %

l. Sampel C4

y = a + bx

0,451 = 0,0154 + 0,0524 x

x = 0,4356/0,0524

x = 8,312 µg/mL

x = 0,008312 mg/mL

$$\% \text{ kadar} = \frac{\text{C regresi } \left(\frac{\text{mg}}{\text{mL}}\right) \text{ x FP x V}}{\text{Berat sampel}} \; x \; 100\%$$

$$= \frac{0{,}008312 \left(\frac{\text{mg}}{\text{mL}}\right) \text{x } 50 \text{ x } 100 \text{ mL}}{50 \text{ mg}} \; x \; 100\%$$

$$= \frac{41{,}56 \text{ mg}}{50 \text{ mg}} \; x \; 100\%$$

= 83,12 %

Sampel	Absorbansi	% kadar
A1	0,437	80,45

A2	0,215	38,1
A3	0,155	26,64
A4	0,105	17,1
B1	0,547	101,45
B2	0,569	105,64
B3	0,577	107,17
B4	0,533	98,77
C1	0,476	87,9
C2	0,701	130,83
C3	0,257	46,1
C4	0,451	83,12

Lampiran 7. Perhitungan bobot jenis

1. Sebelum penyimpanan

Kode A = Lemari pendingin
Kode B = Suhu ruang
Kode C = Oven
1 = Generik
2 = Bufect
3 = Proris
4 = Farsifen
W. pikno kosong = 12,2614 g → W1
W. pikno + aquades = 22,0094 g → W2
W. pikno + Sampel A1 = 23,2780 g
W. pikno + Sampel A2 = 24,0454 g
W. pikno + Sampel A3 = 23,1787 g
W. pikno + Sampel A4 = 22,4849 g
W. pikno + Sampel B1 = 23,3851 g
W. pikno + Sampel B2 = 24,0332 g
W. pikno + Sampel B3 = 23,1961 g
W. pikno + Sampel B4 = 22,4627 g
W. pikno + Sampel C1 = 23,3390 g
W. pikno + Sampel C2 = 24,0252 g
W. pikno + Sampel C3 = 23,1956 g
W. pikno + Sampel C4 = 22,4928 g

Rumus piknometer : $\rho = \frac{W3-W1}{W2-W1}$

a. $\rho = \frac{23,2780\ g-12,2614\ g}{22,0094\ g-12,2614\ g}$

$= \frac{11,0166\ g}{9,748\ g} = 1,1301$

b. $\rho = \frac{24,0454\ g-12,2614\ g}{22,0094\ g-12,2614\ g}$

$= \frac{11,784\ g}{9,748\ g} = 1,2088$

c. $\rho = \frac{23,1787\ g-12,2614\ g}{22,0094\ g-12,2614\ g}$

$= \frac{10,9173\ g}{9,748\ g} = 1,1199$

d. $\rho = \frac{22,4849\ g-12,2614\ g}{22,0094\ g-12,2614\ g}$

$= \frac{10,2235\ g}{9,748\ g} = 1,0487$

e. $\rho = \frac{23,3851\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{11,1237\ g}{9,748\ g} = 1,1411$

f. $\rho = \frac{24,0332\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{11,7718\ g}{9,748\ g} = 1,2076$

g. $\rho = \frac{23,1961\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{10,9347\ g}{9,748\ g} = 1,1217$

h. $\rho = \frac{22,4627\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{10,2013\ g}{9,748\ g} = 1,0465$

i. $\rho = \frac{23,3390\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{11,0776\ g}{9,748\ g} = 1,1363$

j. $\rho = \frac{24,0252\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{11,7638\ g}{9,748\ g} = 1,2067$

k. $\rho = \frac{23,1956\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{10,9342\ g}{9,748\ g} = 1,1216$

l. $\rho = \frac{22,4928\ g - 12,2614\ g}{22,0094\ g - 12,2614\ g}$

$= \frac{10,2314\ g}{9,748\ g} = 1,0495$

2. Setelah dilakukan penyimpanan

W. pikno kosong = 12,6569 g → W1
W. pikno + aquades = 22,5068 g → W2
W. pikno + Sampel A1 = 23,4403 g
W. pikno + Sampel A2 = 24,5152 g
W. pikno + Sampel A3 = 23,5642 g
W. pikno + Sampel A4 = 22,7787 g
W. pikno + Sampel B1 = 23,4678 g
W. pikno + Sampel B2 = 24,5048 g
W. pikno + Sampel B3 = 23,6445 g
W. pikno + Sampel B4 = 22,8562 g
W. pikno + Sampel C1 = 23,7606 g
W. pikno + Sampel C2 = 24,5393 g
W. pikno + Sampel C3 = 23,5868 g
W. pikno + Sampel C4 = 22,9200 g

Rumus piknometer : $\rho = \frac{W3-W1}{W2-W1}$

a. $\rho = \frac{23,4403\ g-12,6569\ g}{22,5068\ g-12,6569\ g}$

$= \frac{10,7834\ g}{9,8499\ g} = 1,0947$

b. $\rho = \frac{24,5152\ g-12,6569\ g}{22,5068\ g-12,6569\ g}$

$= \frac{11,8583\ g}{9,8499\ g} = 1,2039$

c. $\rho = \frac{23,5642\ g-12,6569\ g}{22,5068\ g-12,6569\ g}$

$= \frac{10,9073\ g}{9,8499\ g} = 1,1073$

d. $\rho = \frac{22,7787\ g-12,6569\ g}{22,5068\ g-12,6569\ g}$

$= \frac{10,1218\ g}{9,8499\ g} = 1,0276$

e. $\rho = \frac{23,4678\ g-12,6569\ g}{22,5068\ g-12,6569\ g}$

$= \frac{10,8109\ g}{9,8499\ g} = 1,0975$

f. $\rho = \frac{24,5048\ g-12,6569\ g}{22,5068\ g-12,6569\ g}$

$= \frac{11,8479\ g}{9,8499\ g} = 1,2028$

g. $\rho = \frac{23,6445\ g-12,6569\ g}{22,5068\ g-12,6569\ g}$

$= \frac{10,9876\ g}{9,8499\ g} = 1,1155$

h. $\rho = \frac{22,8562\ g - 12,6569\ g}{22,5068\ g - 12,6569\ g}$

$= \frac{10,1993\ g}{9,8499\ g} = 1,0354$

i. $\rho = \frac{23,7606\ g - 12,6569\ g}{22,5068\ g - 12,6569\ g}$

$= \frac{11,1037\ g}{9,8499\ g} = 1,1272$

j. $\rho = \frac{24,5393\ g - 12,6569\ g}{22,5068\ g - 12,6569\ g}$

$= \frac{11,8824\ g}{9,8499\ g} = 1,2063$

k. $\rho = \frac{23,5868\ g - 12,6569\ g}{22,5068\ g - 12,6569\ g}$

$= \frac{10,9299\ g}{9,8499\ g} = 1,1096$

l. $\rho = \frac{22,9200\ g - 12,6569\ g}{22,5068\ g - 12,6569\ g}$

$= \frac{10,2631\ g}{9,8499\ g} = 1,0419$

Lampiran 8. Sampel suspensi ibuprofen

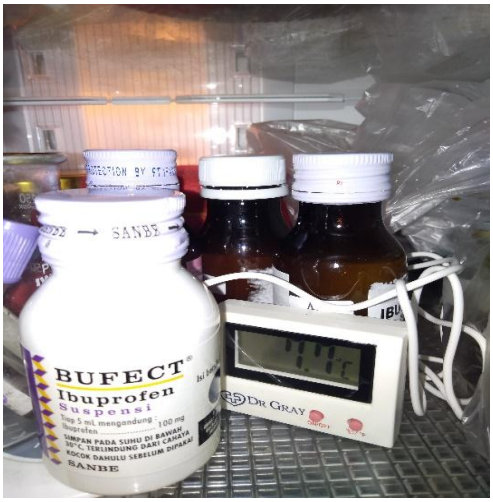

A1
A2
A3
A4

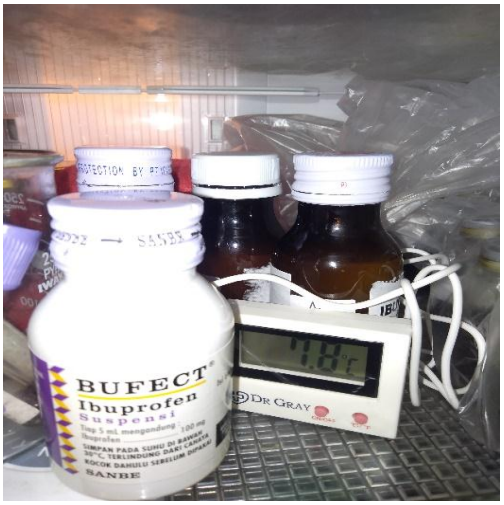

B1
B2
B3
B4


C1
C2
C3
C4

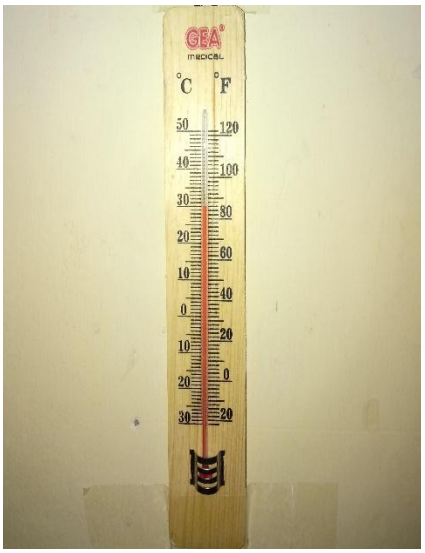
Lampiran 9. Penyimpanan sesuai tempat penyimpanan

1. Lemari pendingin





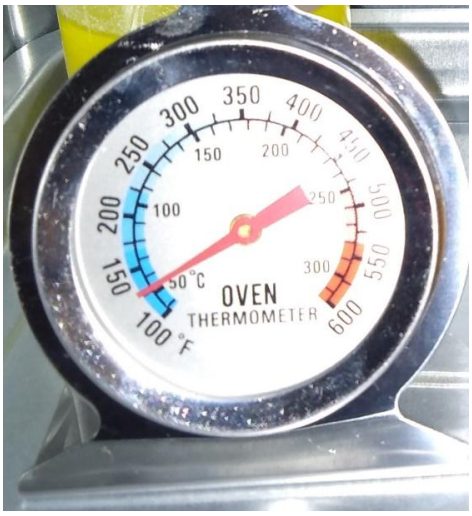
2. Ruangan



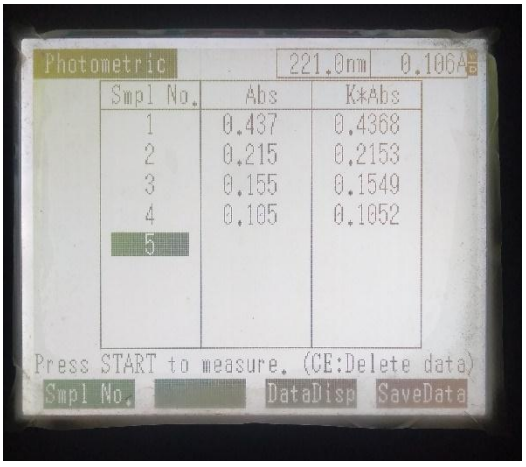
3. Oven

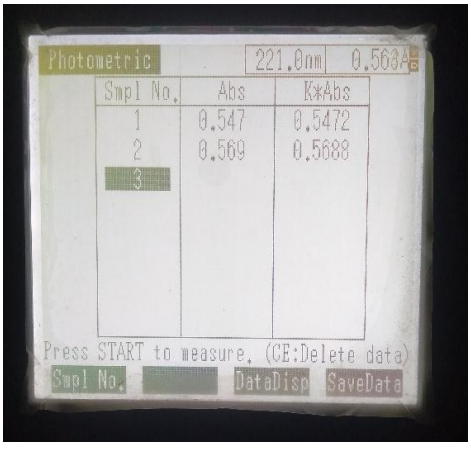

OVEN
THERMOMETER
C4
C3


POTATO
SWEET POTATO
FISH
CHICKEN WING
BREAD
CAKE
Gaabor
Temperature
TIME


OVEN
THERMOMETER
°C
°F

Lampiran 10. Uji kadar



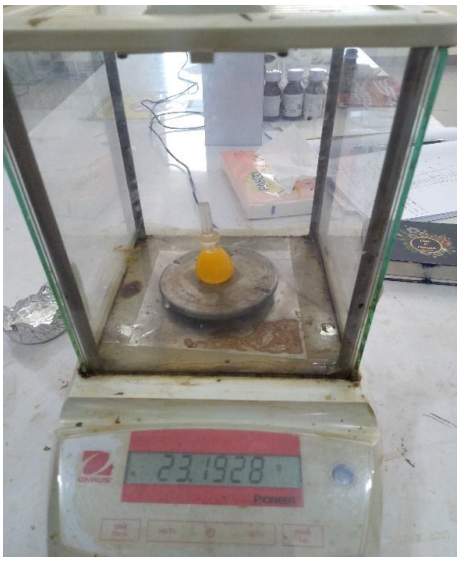



Photometric
221.0nm
0.450A
Smpl No.
Abs
K*Abs
1
0.577
0.5769
2
0.533
0.5325
3
0.476
0.4756
4
0.701
0.7015
5
0.257
0.2566
6
0.451
0.4506
7
Press START to measure. (CE:Delete data)
Smpl No.
DataDisp
SaveData

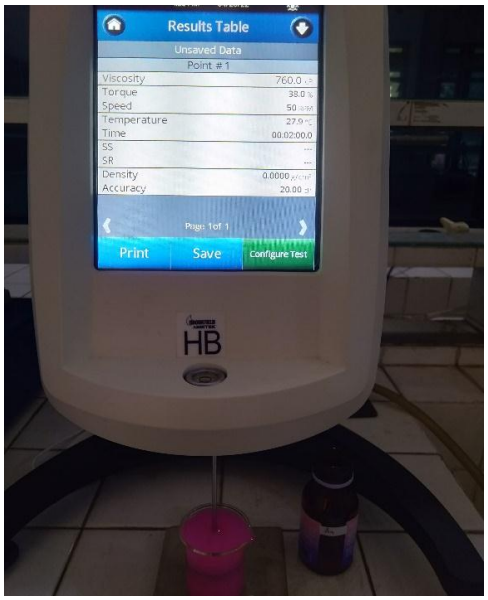

UV-1800
Scanned by TapScanner


6 µg/ml
8 µg/ml
10 µg/ml
12 µg/ml
14 µg/ml

Lampiran 11. Uji bobot jenis



Lampiran 12. Uji viskositas



Lampiran 13. Data suhu selama penyimpanan

1. Lemari pendingin

Tanggal	Suhu Pengamatan pada Suhu Lemari Pendingin	
	Pagi	Siang
27/04/2022		6,61°
09/05/2022	6,2°	6,5°
10/05/2022	6,5°	6,8°
11/05/2022	6,7°	7,9°
12/05/2022	6,2°	6,46°
13/05/2022	5,8°	6,1°
17/05/2022	5,9°	6,0°
18/05/2022	5,9°	6,1°
19/05/2022	5,9°	6,2°
20/05/2022	5,6°	5,9°
23/05/2022	7,2°	8,2°
24/05/2022	7,9°	7,9°
25/05/2022	7,4°	7,4°
27/05/2022	7,5°	7,9°

2. Ruangan

Tanggal	Suhu Pengamatan pada Suhu Ruangan		
	Pagi	Siang	Malam
27/04/2022			29°
28/04/2022	28°	30°	27°
29/04/2022	29°	30°	27°
30/04/2022	29°	31°	27°
01/05/2022	29°	30°	28°
02/05/2022	28°	30°	28°
03/05/2022	29°	30°	27°
04/05/2022	29°	30°	29°
05/05/2022	30°	31°	27°
06/05/2022	30°	31°	27°
07/05/2022	30°	31°	28°
08/05/2022	29°	30°	28°
09/05/2022	29°	30°	29°
10/05/2022	29°	30°	29°
11/05/2022	29°	31°	30°

12/05/2022	29°	30°	30°
13/05/2022	29°	31°	30°
14/05/2022	29°	30°	30°
15/05/2022	29°	30°	30°
16/05/2022	29°	31°	30°
17/05/2022	29°	30°	30°
18/05/2022	29°	30°	30°
19/05/2022	28°	29°	27°
20/05/2022	29°	29°	28°
21/05/2022	28°	28°	28°
22/05/2022	27°	28°	28°
23/05/2022	27°	29°	28°
24/05/2022	29°	29°	29°
25/05/2022	29°	30°	30°
26/05/2022	29°	30°	29°
27/05/2022	27°	29°	27°

3. Oven

Tanggal	Suhu Pengamatan pada Suhu Oven		
	Pagi	Siang	Malam
27/04/2022			60°
28/04/2022	53°	50°	50°
29/04/2022	50°	50°	50°
30/04/2022	50°	50°	50°
01/05/2022	50°	50°	50°
02/05/2022	50°	50°	50°
03/05/2022	50°	50°	50°
04/05/2022	50°	50°	50°
05/05/2022	50°	50°	50°
06/05/2022	50°	50°	50°
07/05/2022	50°	50°	50°
08/05/2022	50°	50°	50°
09/05/2022	50°	50°	50°
10/05/2022	50°	50°	50°
11/05/2022	50°	50°	50°
12/05/2022	50°	50°	50°
13/05/2022	50°	50°	50°
14/05/2022	50°	50°	50°

15/05/2022	50°	50°	50°
16/05/2022	50°	50°	50°
17/05/2022	50°	50°	50°
18/05/2022	50°	50°	50°
19/05/2022	50°	50°	50°
20/05/2022	50°	50°	50°
21/05/2022	50°	50°	50°
22/05/2022	50°	50°	50°
23/05/2022	50°	50°	50°
24/05/2022	50°	50°	50°
25/05/2022	50°	50°	50°
26/05/2022	50°	50°	50°
27/05/2022	50°	50°	50°

Lampiran 14. Data Hasil Analisis SPSS

1. Data Kadar

a. Uji normalitas

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	SUHU	Statistic	df	Sig.	Statistic	df	Sig.
SEBELUM	DINGIN	.221	4	.	.956	4	.754
	RUANGAN	.258	4	.	.881	4	.343
	PANAS	.216	4	.	.971	4	.849
SESUDAH	DINGIN	.285	4	.	.882	4	.347
	RUANGAN	.232	4	.	.943	4	.673
	PANAS	.240	4	.	.965	4	.812

a. Lilliefors Significance Correction

b. Uji homogenitas

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
SEBELUM	Based on Mean	1.615	2	9	.252
	Based on Median	1.487	2	9	.277
	Based on Median and with adjusted df	1.487	2	7.238	.288
	Based on trimmed mean	1.613	2	9	.252
SESUDAH	Based on Mean	1.670	2	9	.242
	Based on Median	1.325	2	9	.313
	Based on Median and with adjusted df	1.325	2	5.901	.335
	Based on trimmed mean	1.587	2	9	.257

c. Uji anova

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
SEBELUM	Between Groups	21.085	2	10.543	2.482	.139
	Within Groups	38.224	9	4.247		
	Total	59.310	11			
SESUDAH	Between Groups	8464.632	2	4232.316	6.353	.019
	Within Groups	5995.532	9	666.170		
	Total	14460.165	11			

d. Uji Turkey

SEBELUM

Tukey HSD[a]

SUHU	N	Subset for alpha = 0.05
		1
DINGIN	4	101.4925
PANAS	4	103.0175
RUANGAN	4	104.7375
Sig.		.120

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4.000.

SESUDAH

Tukey HSD[a]

SUHU	N	Subset for alpha = 0.05	
		1	2
DINGIN	4	40.5725	
PANAS	4	86.9875	86.9875
RUANGAN	4		103.2575
Sig.		.074	.659

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4.000.

e. Uji paired T-test

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SEBELUM	103.0825	12	2.32203	.67031
	SESUDAH	76.9392	12	36.25687	10.46646

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	SEBELUM & SESUDAH	12	.298	.346

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	SEBELUM - SESUDAH	26.14333	35.63301	10.28636	3.50320	48.78347	2.542	11	.027

Hasil uji menyatakan bahwa data terdistribusi normal dan homogen dengan nilai Sig >0,05, hasil uji dilanjutkan menggunakan anova yang menyatakan bahwa sediaan sebelum pegujian tidak memiliki perbedaan bermakna satu sama lain >0,05, namun pada setelah perlakuan dinyatakan bahwa ada perbedaan bermakna satu sama lain, maka uji dilanjutkan menggunakan post hoc turkey yang menyatakan bahwa sediaan pada suhu ruang memiliki hasil tertinggi dibanding metode lainnya, disusul perlakuan pada suhu panas, dan suhu dingin. Uji paired T-test untuk mengetahui perbedaan antara sebelum dan sesudah perlakuan menunjukkan bahwa Sig. <0,05 yang berarti ada perbedaan yang bermakna.

2. Data Bobot Jenis

a. Uji normalitas

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	SUHU	Statistic	df	Sig.	Statistic	df	Sig.
BOBOT_JENIS_SEBELUM	DINGIN	.230	4	.	.969	4	.835
	RUANGAN	.205	4	.	.985	4	.930
	PANAS	.207	4	.	.979	4	.898
BOBOT_JENIS_SESUDAH	DINGIN	.256	4	.	.959	4	.774
	RUANGAN	.234	4	.	.972	4	.855
	PANAS	.215	4	.	.981	4	.906

a. Lilliefors Significance Correction

b. Uji homogenitas dan anova

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
BOBOT_JENIS_SEBELUM	Based on Mean	.004	2	9	.996
	Based on Median	.004	2	9	.996
	Based on Median and with adjusted df	.004	2	8.976	.996
	Based on trimmed mean	.004	2	9	.996
BOBOT_JENIS_SESUDAH	Based on Mean	.003	2	9	.997
	Based on Median	.001	2	9	.999
	Based on Median and with adjusted df	.001	2	8.882	.999
	Based on trimmed mean	.002	2	9	.998

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
BOBOT_JENIS_SEBELUM	Between Groups	.000	2	.000	.001	.999
	Within Groups	.039	9	.004		
	Total	.039	11			
BOBOT_JENIS_SESUDAH	Between Groups	.000	2	.000	.035	.966
	Within Groups	.044	9	.005		
	Total	.044	11			

c. Post hoc turkey

BOBOT_JENIS_SEBELUM

Tukey HSD[a]

SUHU	N	Subset for alpha = 0.05 1
DINGIN	4	1.126875
PANAS	4	1.128525
RUANGAN	4	1.129225
Sig.		.999

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4.000.

BOBOT_JENIS_SESUDAH

Tukey HSD[a]

SUHU	N	Subset for alpha = 0.05 1
DINGIN	4	1.108375
RUANGAN	4	1.112800
PANAS	4	1.121250
Sig.		.963

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4.000.

d. Paired T-test

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BOBOT_JENIS_SEBELUM	1.128208	12	.0591932	.0170876
	BOBOT_JENIS_SESUDAH	1.114142	12	.0633987	.0183016

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	BOBOT_JENIS_SEBELUM & BOBOT_JENIS_SESUDAH	12	.980	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	BOBOT_JENIS_SEBELUM - BOBOT_JENIS_SESUDAH	.0140667	.0130630	.0037710	.0057668	.0223665	3.730	11	.003

Hasil uji menyatakan bahwa data terdistribusi normal dan homogen dengan nilai Sig >0,05, hasil uji dilanjutkan menggunakan anova yang menyatakan bahwa sediaan sebelum dan sesudah perlakuan tidak memiliki perbedaan bermakna satu sama lain >0,05, uji dilanjutkan menggunakan post hoc turkey yang menyatakan bahwa antar sediaan baik sebelum dan sesudah pengujian tidak ada perbedaan bermaka Sig. >0,05. Hal ini berarti hasil pada uji bobot jenis baik. Uji paired T-test untuk mengetahui perbedaan antara sebelum dan sesudah perlakuan menunjukkan bahwa Sig. <0,05 yang berarti ada perbedaan yang bermakna.

3. Data Viskositas

a. Uji normalitas

Tests of Normality

	SUHU	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
VISKOSITAS_SEBELUM	DINGIN	.355	4	.	.826	4	.158
	RUANGAN	.252	4	.	.916	4	.513
	PANAS	.215	4	.	.966	4	.819
VISKOSITAS_SESUDAH	DINGIN	.331	4	.	.801	4	.104
	RUANGAN	.226	4	.	.976	4	.880
	PANAS	.175	4	.	.985	4	.932

a. Lilliefors Significance Correction

b. Uji homogenitas dan anova

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
VISKOSITAS_SEBELUM	Based on Mean	2.040	2	9	.186
	Based on Median	1.633	2	9	.248
	Based on Median and with adjusted df	1.633	2	5.522	.277
	Based on trimmed mean	2.002	2	9	.191
VISKOSITAS_SESUDAH	Based on Mean	6.024	2	9	.022
	Based on Median	1.885	2	9	.207
	Based on Median and with adjusted df	1.885	2	3.089	.292
	Based on trimmed mean	4.920	2	9	.036

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
VISKOSITAS_SEBELUM	Between Groups	759.500	2	379.750	4.140	.053
	Within Groups	825.500	9	91.722		
	Total	1585.000	11			
VISKOSITAS_SESUDAH	Between Groups	75702.232	2	37851.116	6.333	.019
	Within Groups	53788.918	9	5976.546		
	Total	129491.149	11			

c. Post hoc turkey

VISKOSITAS_SEBELUM

Tukey HSD[a]

SUHU	N	Subset for alpha = 1	
PANAS	4	369.2500	
DINGIN	4	375.0000	375
RUANGAN	4		388
Sig.		.684	

Means for groups in homogeneous subsets displayed.

a. Uses Harmonic Mean Sample Size = 4.000.

VISKOSITAS_SESUDAH

Tukey HSD[a]

SUHU	N	Subset for alpha = 0.05 1	2
PANAS	4	322.5000	
RUANGAN	4	360.7500	360.7500
DINGIN	4		506.8250
Sig.		.770	.060

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4.000.

d. Paired T-test

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VISKOSITAS_SEBELUM	377.5000	12	12.00379	3.46519
	VISKOSITAS_SESUDAH	396.6917	12	108.49849	31.32082

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VISKOSITAS_SEBELUM & VISKOSITAS_SESUDAH	12	-.147	.650

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	VISKOSITAS_SEBELUM - VISKOSITAS_SESUDAH	-19.19167	110.89506	32.01265	-89.65102	51.26769	-.600	11	.561

Hasil uji menyatakan bahwa data terdistribusi normal dengan nilai Sig >0,05, namun pada homogenitas terdapat beberapa data yang tidak terdistribusi homogen, hasil uji dilanjutkan menggunakan anova yang menyatakan bahwa sediaan sebelum uji dan sesudah perlakuan memiliki perbedaan bermakna satu sama lain <0,05, uji dilanjutkan menggunakan post hoc turkey yang menyatakan bahwa antar sediaan baik sebelum dan sesudah pengujian ada perbedaan bermaka Sig. <0,05. Pada sebelum pengujian perlakuan pada suhu ruangan memiliki poin terbesar, disusul dengan suhu dingin, dan panas. Pada setelah perlakuan suhu dingin memiliki poin tertinggi disusul suhu ruang, dan panas. Uji paired T-test untuk mengetahui perbedaan antara sebelum dan sesudah perlakuan menunjukkan bahwa Sig. >0,05 yang berarti tidak ada perbedaan yang bermakna, sehingga perlakuan tidak memberikan perbedaan pada sebelum dan sesudah perlakuan.