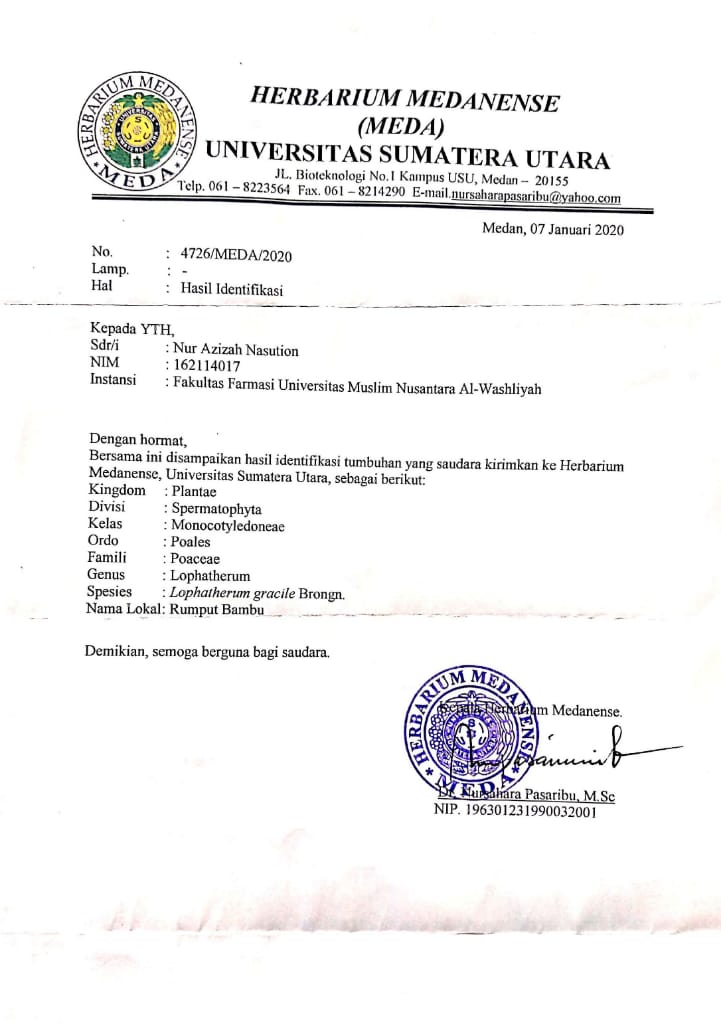
**Lampiran 1.** Hasil Determinasi Tumbuhan



**Lampiran 2.** Rekomendasi Persetujuan Etik Penelitian Kesehatan



**Lampiran 3.** Bagan Alir Pembuatan Simplisia

Herba Rumput Bambu 5 kg

Dibersihkan

Dicuci bersih

Ditiriskan

Berat basah 5 kg

Dikeringkan dilemari pengering

Disortasi kering

Berat kering 1,1 kg

Dihaluskan dengan menggunakan blender

Serbuk simplisia ekstrak herba rumput bambu 500 g

**Lampiran 4.** Bagan Alir Pembuatan Ekstrak Etanol Herba Rumput Bambu

Serbuk Simplisia 500 g

Dimasukkan dalam bejana

Dituangkan dengan 75 bagian etanol 96%

Ditutup dan dibiarkan selama 5 hari sambil diaduk-aduk sesekali

Setelah 5 hari maserat diserkai dan ampasnya diperas

Maserat I

Ampas

Dicuci dengan 25 bagian etanol 96%

Dimasukkan kedalam bejana tertutup, dibiarkan selama 2 hari dan disaring

Maserat II

Maserat I + Maserat II

Dipekatkan dengan *Rotary Evaporator*

Ekstrak Etanol Kental 60 g

**Lampiran 5.** Bagan Alir Skrining Fitokimia dan Karakterisasi

Serbuk Simplisia Herba Rumput Bambu

Serbuk Simplisia Herba Rumput Bambu

Serbuk Simplisia Herba Rumput Bambu

Dimaserasi menggunakan pelarut etanol 96%

Skrining Fitokimia

Karakterisasi

Ekstrak Etanol Herba Rumput Bambu

1.Pemeriksaan Alkaloida

2.Pemeriksaan Flavonoida

3. Pemeriksaan Tanin

4.Pemeriksaan Saponin

5.Pemeriksaan Steroida

/Triterpenoida

1.Makroskopik

2.Mikroskopik

3.Penetapan Kadar Air

4.Penetapan Kadar Sari Larut Air

5.Penetapan Kadar Sari Larut Etanol

6.Penetapan Kadar Abu Total

7.Penetapan Kadar Abu Tidak Larut dalam Asam

1.Pemeriksaan Alkaloida

2.Pemeriksaan Flavonoida

3. Pemeriksaan Tanin

4.Pemeriksaan Saponin

5.Pemeriksaan Steroida/Triterpenoida

Uji Farmakologi

**Lampiran 6.** Bagan Alir Analgetik

Mencit

Diaklimatisasi selama 1-2 minggu

Dipuasakan selama 18-24 jam

Ditimbang berat badan

Dikelompokkan secara acak menjadi 5 kelompok masing-masing kelompok 5 ekor mencit

Diinduksi dengan Asam Asetat 0,5% hewan secara intraperitoneal

Mencit Nyeri

Dihitung jumlah geliat tiap 5 menit sampai menit ke 10

Setelah 10 menit diamati, setiap kelompok setiap kelompok diberi perlakuan secara peroral :

Kel 1 : CMC 0,5%

Kel 2 : Methampiron

Kel 3 : EEHRB 250 mg/kgBB

Kel 4 : EEHRB 500 mg/kgBB

Kel 5 : EEHRB 750 mg/kgBB

Diamati geliatnya dan dihitung jumlah geliat tiap 5 menit sampai menit ke 60

Jumlah Geliat

**Lampiran 7.** Serbuk Simplisia Herba Rumput Bambu



Serbuk Simplisia Herba Rumput Bambu

**Lampiran 8.** Mikroskopik Herba Rumput Bambu *(lophatherum gracile)*



parenkim

Serabut

Trikoma(rambut)

**Lampiran 9.** Maserasi dan Ekstrak Etanol Herba Rumput Bambu



Ekstraksi Cara Maserasi Herba Rumput Bambu



Ekstrak Etanol Herba Rumput Bambu

**Lampiran 10.** Alat Rotary Evaporator dan Alat Azeotrop



Alat Rotary Evaporator



Alat Azeotrop (Penetapan Kadar Air)

**Lampiran 11** Perlakuan dengan Mencit





**Geliat Mencit**

****

Metampiron (Antalgin) 2% (Kontrol Positif)

**Lampiran 12.** Tabel Konversi Dosis dan Tabel Volume Maksimum lambung pada hewan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mencit**  **20 g** | **Tikus**  **200 g** | **Marmut**  **400 g** | **Kelinci**  **1,5 Kg** | **Kera**  **4 Kg** | **Anjing**  **12 Kg** | **Manusia**  **70 Kg** |
| Mencit  20 g | 1,0 | 7,0 | 12,25 | 27,80 | 64,10 | 124,3 | 787,9 |
| Tikus  200 g | 0,14 | 1,0 | 1,74 | 3,90 | 9,20 | 17,80 | 56,0 |
| Marmut  400 g | 0,08 | 0,57 | 1,0 | 2,25 | 5,20 | 10,20 | 31,50 |
| Kelinci  1,5 Kg | 0,04 | 0,25 | 0,44 | 1,0 | 2,40 | 4,50 | 14,20 |
| Kera  4 Kg | 0,016 | 0,11 | 0,19 | 0,92 | 0,1 | 1,9 | 6,1 |
| Anjing  12 Kg | 0,008 | 0,6 | 0,10 | 0,42 | 0,52 | 1,0 | 3,10 |
| Manusia  70 Kg | 0,0026 | 0,018 | 0,031 | 0,07 | 0,16 | 0,32 | 1,0 |

Tabel Volume Maksimum lambung pada hewan (ml)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Jenis Hewan Uji** | **Volume maksimum (ml) sesuai jalur pemberian** | | | | |
| i.v | i.m | i.p | s.c | p.o |
| Mencit(20-30 g) | 0,05 | 0,05 | 1,0 | 0,5-1,0 | 1,0 |
| Tikus(200 g) | 0,1 | 0,1 | 2-5 | 2-5 | 5,0 |
| Hamster(50 g) | 0,1 | 0,1 | 1-2 | 2,5 | 2,5 |
| Marmut (250 g) | 0,25 | 0,25 | 2-5 | 5,0 | 10,0 |
| Kelinci ( 3 kg) | 0,5 | 0,5 | 10-20 | 5-10 | 20.0 |
| Kucing (3 kg) | 1,0 | 1,0 | 10-20 | 5-10 | 50,0 |
| Anjing (5 kg) | 5,0 | 5,0 | 20-50 | 10,0 | 100,0 |

**Lampiran 13.** Perhitungan Dosis

**1.** Perhitungan Konversi Dosis Metampiron

Dosis terapi Metampiron pada manusia adalah 500 mg

Dosis sekali minum : 500 mg

Dosis tiga kali minum : 1500 mg

Konversi dosis manusia (70 kg) ke mencit (20 g) : 0,0026

Dosis antalgin pada mencit : 500 mg x 0,0026 = 1,3 mg

Maka :

Mencit (20 g) = = 65 mg/kgBB

Dosis = x 20 g = 1,3 mg

Metampiron 2% = = 20 mg/ml

Volume = = = 0,06 ml

2. Perhitungan Dosis Suspensi CMC 0,5 %

CMC 0,5% = Jumlah cmc / volum suspensi

= 0,5 g / 100 ml

= 500 mg/100 ml

= 5 mg/ ml

3. Perhitungan Dosis Suspensi Ekstrak Etanol Herba Rumput Bambu Dosis 250 mg/kg BB

Konsentrasi EEHRB 2% = Jumlah EEHRB / volume suspensi

= 2000 mg / 100 ml

= 20 mg/ml

**Lampiran 13.** (lanjutan)

BB mencit 20 g

Perhitungan dosis 250 mg/kgBB

=

4. Perhitungan Dosis Suspensi Ekstrak Etanol Herba Rumput Bambu Dosis 500 mg/kg BB

Konsentrasi EEHRB 2% = Jumlah EEHRB / volume suspensi

= 2000 mg / 100 ml

= 20 mg/ml

BB mencit 20 g

Perhitungan dosis 500 mg/kgBB

=

5. Perhitungan Dosis Suspensi Ekstrak Etanol Herba Rumput Bambu Dosis 750 mg/kgBB

Konsentrasi EEHRB 2% = Jumlah EEHRB / volume suspensi

= 2000 mg / 100 ml

= 20 mg/ml

BB mencit 20 g

Perhitungan dosis 750 mg/kgBB

=

**Lampiran 14** Data rata – rata jumlah geliat mencit putih jantan yang diinduksi asam asetat 0,5% dalam waktu 10 menit

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No. | Diinduksi Asam Asetat 0,5% Selama 10 menit | | | | | Jumlah Geliat |
|
| 1 | 26 | 24 | 20 | 20 | 22 | 112 |
| 2 | 25 | 25 | 20 | 22 | 20 | 112 |
| 3 | 20 | 25 | 23 | 20 | 21 | 109 |
| 4 | 25 | 23 | 20 | 22 | 20 | 110 |
| 5 | 20 | 24 | 20 | 20 | 20 | 104 |

**Lampiran 15.** Data hasil pengamatan geliat mencit jantan setelah perlakuan suspensi CMC 0,5%, suspensi metampiron 2%, suspense EEHRB dosis 250 mg/kgBB, dosis 500 mg/kgBB, dosis 750 mg/kgBB

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Perlakuan** | **Mencit** | **Waktu (menit)** | | | | | | **Jumlah Geliat** |
| 5 | 10 | 20 | 30 | 45 | 60 |
| Suspensi CMC 0,5% | 1 | 12 | 24 | 20 | 18 | 15 | 8 | 97 |
| 2 | 12 | 25 | 22 | 20 | 16 | 10 | 105 |
| 3 | 14 | 22 | 18 | 14 | 12 | 7 | 87 |
| 4 | 15 | 26 | 22 | 18 | 12 | 10 | 103 |
| 5 | 14 | 24 | 20 | 17 | 10 | 8 | 93 |
| Rata – Rata | | 13,4 | 24,2 | 20,4 | 17,4 | 13 | 8,6 | 97 |
| SD | | 1,3 | 1,5 | 1,7 | 2,2 | 2,4 | 1,3 |  |
| Suspensi Metampiron 2% | 1 | 10 | 18 | 15 | 12 | 8 | 4 | 67 |
| 2 | 12 | 16 | 14 | 10 | 6 | 5 | 63 |
| 3 | 13 | 14 | 11 | 7 | 5 | 3 | 53 |
| 4 | 12 | 15 | 12 | 8 | 6 | 4 | 57 |
| 5 | 10 | 14 | 10 | 6 | 4 | 2 | 46 |
| Rata – Rata | | 11,4 | 15,4 | 12,4 | 8,6 | 5,8 | 3,6 | 57,2 |
| SD | | 1,3 | 1,7 | 2,1 | 2,4 | 1,5 | 1,1 |  |
| Suspensi EEHRB 250mg/kg BB | 1 | 6 | 15 | 10 | 6 | 4 | 2 | 43 |
| 2 | 8 | 14 | 11 | 8 | 5 | 4 | 50 |
| 3 | 8 | 16 | 14 | 11 | 7 | 3 | 59 |
| 4 | 9 | 15 | 12 | 10 | 6 | 2 | 54 |
| 5 | 7 | 16 | 12 | 8 | 5 | 2 | 50 |
| Rata – Rata | | 7,6 | 15,2 | 11,8 | 8,6 | 5,4 | 2,6 | 51,2 |
| SD | | 1,1 | 0,8 | 1,5 | 1,9 | 1,1 | 0,9 |  |
| Suspensi EEHRB 500mg/kg BB | 1 | 6 | 15 | 12 | 10 | 5 | 3 | 51 |
| 2 | 6 | 14 | 10 | 8 | 4 | 2 | 44 |
| 3 | 8 | 16 | 15 | 10 | 8 | 4 | 61 |
| 4 | 7 | 15 | 13 | 8 | 6 | 4 | 53 |
| 5 | 7 | 16 | 12 | 8 | 5 | 2 | 50 |
| Rata – Rata | | 6,8 | 15,2 | 12,4 | 8,8 | 5,6 | 3 | 51,8 |
| SD | | 0,8 | 0,8 | 1,8 | 1,1 | 1,5 | 1,0 |  |
| Suspensi EEHRB 750mg/kg BB | 1 | 7 | 14 | 12 | 8 | 6 | 2 | 49 |
| 2 | 6 | 10 | 7 | 5 | 5 | 3 | 36 |
| 3 | 8 | 13 | 8 | 6 | 5 | 2 | 42 |
| 4 | 7 | 12 | 9 | 6 | 5 | 2 | 41 |
| 5 | 8 | 14 | 10 | 8 | 6 | 3 | 49 |
| Rata – Rata | | 7,2 | 12,6 | 9,2 | 6,6 | 5,4 | 2,4 | 43,4 |
| SD | | 0,8 | 1,7 | 1,9 | 1,3 | 0,5 | 0,5 |  |

**Lampiran 16.** Data Karakterisasi Serbuk Simplisia Herba Rumput Bambu

1. Perhitungan Hasil Penetapan Kadar Air (Tidak lebih dari 10 %).

Sampel I

Berat sampel : 5 g

Volume I : 1,8 ml

Volume II : 2,2 ml

=

=

Sampel II

Berat sampel : 5 g

Volume I : 1,9 ml

Volume II : 2,3 ml

=

=

Sampel III

Berat sampel : 5 g

Volume I : 1,8 ml

Volume II : 2,2 ml

=

=

Kadar air rata-rata: = = 8 %

Kadar air pada herba rumput bambu memenuhi syarat yaitu 8 %, tidak lebih dari 10%.

**Lampiran 16.** (lanjutan)

1. Perhitungan Kadar Sari Larut dalam Air (>23,5 %).

Sampel 1

Berat sampel : 5 g

Berat cawan kosong : 59,86 g

Berat cawansampel : 60,12 g

=

= = 26 %

Sampel II

Berat sampel : 5 g

Berat cawan kosong : 64,49 g

Beratcawan sampel : 64,85 g

=

= = 36 %

Sampel III

Berat sampel : 5 g

Berat cawan kosong : 68,07 g

Berat cawansampel : 68,33 g

=

= = 26 %

Kadar sari larut dalam air rata-rata: = = 29,3 %

Kadar sari larut dalam air pada herba rumput bambu memenuhi syarat yaitu 29,3%, lebih dari 23,5 %.

**Lampiran 16.** (lanjutan)

1. Perhitungan Kadar Sari Larut dalam Etanol

Kadar Sari Larut Dalam Etanol =

Sampel I

Berat sampel : 5 g

Berat cawan kosong : 65,44 g

Berat cawansampel : 65,78 g

= = 34 %

Sampel II

Berat sampel : 5 g

Berat cawan kosong : 68,07g

Berat cawan sampel : 68,34 g

= = 27 %

Sampel III

Berat sampel : 5 g

Berat cawan kosong : 64,48 g

Berat cawan sampel : 64,76 g

= = 28 %

Kadar sari larut dalam etanol rata-rata: = = 29,66 %

Kadar sari larut dalam etanol pada herba rumput bambu memenuhi syarat yaitu

**Lampiran 16.** (lanjutan)

1. Perhitungan Penetapan Kadar Abu ( Tidak lebih dari 4 %)

Kadar Abu =

Sampel I

Berat sampel : 2 g

Berat Abu : 0,08 g

Kadar abu total = = 4 %

Sampel II

Berat sampel : 2 g

Berat Abu : 0,05 g

Kadar abu total = = 2,5 %

Sampel III

Berat sampel : 2 g

Berat Abu : 0,06 g

Kadar abu total = = 3 %

Kadar abu total rata-rata == 3,17 %

Kadar abu total pada herba rumput bambu memenuhi syarat yaitu 3,17 %, tidak lebih dari 4 %.

**Lampiran 16.** (lanjutan)

1. Perhitungan Kadar Abu tidak Larut dalam Asam (tidak lebih dari 3,5 %).

Kadar abu tidak larut asam =

Sampel I

Berat sampel : 2 g

Berat Abu : 0,01 g

= = 0,5 %

Sampel ll

Berat sampel : 2 g

Berat Abu : 0,01

=

Sampel III

Berat sampel : 2 g

Berat Abu : 63,84 g

= = 0,5 %

Kadar abu tidak larut dalam asam rata-rata:= = 0,5 %

Kadar abu tidak larut dalam asam pada herba rumput bambu memenuhi syarat yaitu 0,5 %, tidak lebih dari 3,5 %.

**Lampiran 17.** Perhitungan Persentase Daya Analgetik

Rumus % daya analgetik

1. Kontrol Positif (Metampiron 2%)

Menit ke 5 = 100 ₋ x 100% = 14,92%

Menit ke 10 = 100 ₋ x 100% = 36,36%

Menit ke 20 = 100 ₋ x 100% = 39,21%

Menit ke 30 = 100 ₋ x 100% = 50,57%

Menit ke 45 = 100 ₋ x 100% = 55,38%

Menit ke 60 = 100 ₋ x 100% = 58,13%

**Lampiran 17.** (Lanjutan)

2. Ekstrak Etanol Herba Rumput Bambu Dosis 250 mg/kgBB

Menit ke 5 = 100 ₋ x 100% = 43,28%

Menit ke 10 = 100 ₋ x 100% = 37,19%

Menit ke 20 = 100 ₋ x 100% = 42,15%

Menit ke 30 = 100 ₋ x 100% = 50,57%

Menit ke 45 = 100 ₋ x 100% = 58,46%

Menit ke 60 = 100 ₋ x 100% = 69,76%

**Lampiran 17.** (Lanjutan)

3. Ekstrak Etanol Herba Rumput Bambu Dosis 500 mg/kgBB

Menit ke 5 = 100 ₋ x 100% = 49,25%

Menit ke 10 = 100 ₋ x 100% = 37,19%

Menit ke 20 = 100 ₋ x 100% = 39,21%

Menit ke 30 = 100 ₋ x 100% = 49,42%

Menit ke 45 = 100 ₋ x 100% = 56,92%

Menit ke 60 = 100 ₋ x 100% = 65,11%

**Lampiran 17.** (Lanjutan)

4. Ekstrak Etanol Herba Rumput Bambu Dosis 750 mg/kgBB

Menit ke 5 = 100 ₋ x 100% = 46,26%

Menit ke 10 = 100 ₋ x 100% = 47,93%

Menit ke 20 = 100 ₋ x 100% = 54,90%

Menit ke 30 = 100 ₋ x 100% = 62,06%

Menit ke 45 = 100 ₋ x 100% = 58,46%

Menit ke 60 = 100 ₋ x 100% = 72,09%

**Lampiran 18.** Hasil Descriptives

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Descriptives** | | | | | | | | | |
|  | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
| Lower Bound | Upper Bound |
| Menit5 | 1 | 5 | 13.40 | 1.342 | .600 | 11.73 | 15.07 | 12 | 15 |
| 2 | 5 | 11.40 | 1.342 | .600 | 9.73 | 13.07 | 10 | 13 |
| 3 | 5 | 7.60 | 1.140 | .510 | 6.18 | 9.02 | 6 | 9 |
| 4 | 5 | 6.80 | .837 | .374 | 5.76 | 7.84 | 6 | 8 |
| 5 | 5 | 7.20 | .837 | .374 | 6.16 | 8.24 | 6 | 8 |
| Total | 25 | 9.28 | 2.880 | .576 | 8.09 | 10.47 | 6 | 15 |
| Menit10 | 1 | 5 | 24.20 | 1.483 | .663 | 22.36 | 26.04 | 22 | 26 |
| 2 | 5 | 15.40 | 1.673 | .748 | 13.32 | 17.48 | 14 | 18 |
| 3 | 5 | 15.20 | .837 | .374 | 14.16 | 16.24 | 14 | 16 |
| 4 | 5 | 15.20 | .837 | .374 | 14.16 | 16.24 | 14 | 16 |
| 5 | 5 | 12.60 | 1.673 | .748 | 10.52 | 14.68 | 10 | 14 |
| Total | 25 | 16.52 | 4.244 | .849 | 14.77 | 18.27 | 10 | 26 |
| Menit20 | 1 | 5 | 20.40 | 1.673 | .748 | 18.32 | 22.48 | 18 | 22 |
| 2 | 5 | 12.40 | 2.074 | .927 | 9.83 | 14.97 | 10 | 15 |
| 3 | 5 | 11.80 | 1.483 | .663 | 9.96 | 13.64 | 10 | 14 |
| 4 | 5 | 12.40 | 1.817 | .812 | 10.14 | 14.66 | 10 | 15 |
| 5 | 5 | 9.20 | 1.924 | .860 | 6.81 | 11.59 | 7 | 12 |
| Total | 25 | 13.24 | 4.186 | .837 | 11.51 | 14.97 | 7 | 22 |
| Menit30 | 1 | 5 | 17.40 | 2.191 | .980 | 14.68 | 20.12 | 14 | 20 |
| 2 | 5 | 8.60 | 2.408 | 1.077 | 5.61 | 11.59 | 6 | 12 |
| 3 | 5 | 8.60 | 1.949 | .872 | 6.18 | 11.02 | 6 | 11 |
| 4 | 5 | 8.80 | 1.095 | .490 | 7.44 | 10.16 | 8 | 10 |
| 5 | 5 | 6.60 | 1.342 | .600 | 4.93 | 8.27 | 5 | 8 |
| Total | 25 | 10.00 | 4.223 | .845 | 8.26 | 11.74 | 5 | 20 |
| Menit45 | 1 | 5 | 13.00 | 2.449 | 1.095 | 9.96 | 16.04 | 10 | 16 |
| 2 | 5 | 5.80 | 1.483 | .663 | 3.96 | 7.64 | 4 | 8 |
| 3 | 5 | 5.40 | 1.140 | .510 | 3.98 | 6.82 | 4 | 7 |
| 4 | 5 | 5.60 | 1.517 | .678 | 3.72 | 7.48 | 4 | 8 |
| 5 | 5 | 5.40 | .548 | .245 | 4.72 | 6.08 | 5 | 6 |
| Total | 25 | 7.04 | 3.360 | .672 | 5.65 | 8.43 | 4 | 16 |
| Menit60 | 1 | 5 | 8.60 | 1.342 | .600 | 6.93 | 10.27 | 7 | 10 |
| 2 | 5 | 3.60 | 1.140 | .510 | 2.18 | 5.02 | 2 | 5 |
| 3 | 5 | 2.60 | .894 | .400 | 1.49 | 3.71 | 2 | 4 |
| 4 | 5 | 3.00 | 1.000 | .447 | 1.76 | 4.24 | 2 | 4 |
| 5 | 5 | 2.40 | .548 | .245 | 1.72 | 3.08 | 2 | 3 |
| Total | 25 | 4.04 | 2.541 | .508 | 2.99 | 5.09 | 2 | 10 |

**Lampiran 19.** Hasil Homogenitas

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test of Homogeneity of Variances** | | | | |
|  | Levene Statistic | df1 | df2 | Sig. |
| Menit5 | 1.229 | 4 | 20 | .330 |
| Menit10 | .950 | 4 | 20 | .456 |
| Menit20 | .294 | 4 | 20 | .878 |
| Menit30 | .831 | 4 | 20 | .521 |
| Menit45 | 2.665 | 4 | 20 | .062 |
| Menit60 | 1.466 | 4 | 20 | .250 |

**Lampiran 20.** Hasil Anova

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ANOVA** | | | | | | |
|  | | Sum of Squares | df | Mean Square | F | Sig. |
| Menit5 | Between Groups | 173.840 | 4 | 43.460 | 34.492 | .000 |
| Within Groups | 25.200 | 20 | 1.260 |  |  |
| Total | 199.040 | 24 |  |  |  |
| Menit10 | Between Groups | 395.440 | 4 | 98.860 | 53.728 | .000 |
| Within Groups | 36.800 | 20 | 1.840 |  |  |
| Total | 432.240 | 24 |  |  |  |
| Menit20 | Between Groups | 355.360 | 4 | 88.840 | 27.252 | .000 |
| Within Groups | 65.200 | 20 | 3.260 |  |  |
| Total | 420.560 | 24 |  |  |  |
| Menit30 | Between Groups | 358.400 | 4 | 89.600 | 25.747 | .000 |
| Within Groups | 69.600 | 20 | 3.480 |  |  |
| Total | 428.000 | 24 |  |  |  |
| Menit45 | Between Groups | 222.560 | 4 | 55.640 | 22.992 | .000 |
| Within Groups | 48.400 | 20 | 2.420 |  |  |
| Total | 270.960 | 24 |  |  |  |
| Menit60 | Between Groups | 134.160 | 4 | 33.540 | 32.250 | .000 |
| Within Groups | 20.800 | 20 | 1.040 |  |  |
| Total | 154.960 | 24 |  |  |  |

**Lampiran 21.** Hasil Tukey

|  |  |  |  |
| --- | --- | --- | --- |
| **Menit5** | | | |
| Tukey HSD | | | |
| Perlakuan | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| 4 | 5 | 6.80 |  |
| 5 | 5 | 7.20 |  |
| 3 | 5 | 7.60 |  |
| 2 | 5 |  | 11.40 |
| 1 | 5 |  | 13.40 |
| Sig. |  | .791 | .071 |
| Means for groups in homogeneous subsets are displayed. | | | |
| a. Uses Harmonic Mean Sample Size = 5.000. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Menit10** | | | | |
| Tukey HSD | | | | |
| Perlakuan | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| 5 | 5 | 12.60 |  |  |
| 3 | 5 |  | 15.20 |  |
| 4 | 5 |  | 15.20 |  |
| 2 | 5 |  | 15.40 |  |
| 1 | 5 |  |  | 24.20 |
| Sig. |  | 1.000 | .999 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 5.000. | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Menit20** | | | |
| Tukey HSD | | | |
| Perlakuan | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| 5 | 5 | 9.20 |  |
| 3 | 5 | 11.80 |  |
| 2 | 5 | 12.40 |  |
| 4 | 5 | 12.40 |  |
| 1 | 5 |  | 20.40 |
| Sig. |  | .073 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | |
| a. Uses Harmonic Mean Sample Size = 5.000. | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Menit30** | | | |
| Tukey HSD | | | |
| Perlakuan | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| 5 | 5 | 6.60 |  |
| 2 | 5 | 8.60 |  |
| 3 | 5 | 8.60 |  |
| 4 | 5 | 8.80 |  |
| 1 | 5 |  | 17.40 |
| Sig. |  | .367 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | |
| a. Uses Harmonic Mean Sample Size = 5.000. | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Menit45** | | | |
| Tukey HSD | | | |
| Perlakuan | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| 3 | 5 | 5.40 |  |
| 5 | 5 | 5.40 |  |
| 4 | 5 | 5.60 |  |
| 2 | 5 | 5.80 |  |
| 1 | 5 |  | 13.00 |
| Sig. |  | .994 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | |
| a. Uses Harmonic Mean Sample Size = 5.000. | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Menit60** | | | |
| Tukey HSD | | | |
| Perlakuan | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| 5 | 5 | 2.40 |  |
| 3 | 5 | 2.60 |  |
| 4 | 5 | 3.00 |  |
| 2 | 5 | 3.60 |  |
| 1 | 5 |  | 8.60 |
| Sig. |  | .369 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | |
| a. Uses Harmonic Mean Sample Size = 5.000. | | | |

**Lampiran 22.** Hasil Multiple Comparisons

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Multiple Comparisons** | | | | | | | |
| Tukey HSD | | | | | | | |
| Dependent Variable | (I) Perlakuan | (J) Perlakuan | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| Lower Bound | Upper Bound |
| Menit5 | 1 | 2 | 2.000 | .710 | .071 | -.12 | 4.12 |
| 3 | 5.800\* | .710 | .000 | 3.68 | 7.92 |
| 4 | 6.600\* | .710 | .000 | 4.48 | 8.72 |
| 5 | 6.200\* | .710 | .000 | 4.08 | 8.32 |
| 2 | 1 | -2.000 | .710 | .071 | -4.12 | .12 |
| 3 | 3.800\* | .710 | .000 | 1.68 | 5.92 |
| 4 | 4.600\* | .710 | .000 | 2.48 | 6.72 |
| 5 | 4.200\* | .710 | .000 | 2.08 | 6.32 |
| 3 | 1 | -5.800\* | .710 | .000 | -7.92 | -3.68 |
| 2 | -3.800\* | .710 | .000 | -5.92 | -1.68 |
| 4 | .800 | .710 | .791 | -1.32 | 2.92 |
| 5 | .400 | .710 | .979 | -1.72 | 2.52 |
| 4 | 1 | -6.600\* | .710 | .000 | -8.72 | -4.48 |
| 2 | -4.600\* | .710 | .000 | -6.72 | -2.48 |
| 3 | -.800 | .710 | .791 | -2.92 | 1.32 |
| 5 | -.400 | .710 | .979 | -2.52 | 1.72 |
| 5 | 1 | -6.200\* | .710 | .000 | -8.32 | -4.08 |
| 2 | -4.200\* | .710 | .000 | -6.32 | -2.08 |
| 3 | -.400 | .710 | .979 | -2.52 | 1.72 |
| 4 | .400 | .710 | .979 | -1.72 | 2.52 |
| Menit10 | 1 | 2 | 8.800\* | .858 | .000 | 6.23 | 11.37 |
| 3 | 9.000\* | .858 | .000 | 6.43 | 11.57 |
| 4 | 9.000\* | .858 | .000 | 6.43 | 11.57 |
| 5 | 11.600\* | .858 | .000 | 9.03 | 14.17 |
| 2 | 1 | -8.800\* | .858 | .000 | -11.37 | -6.23 |
| 3 | .200 | .858 | .999 | -2.37 | 2.77 |
| 4 | .200 | .858 | .999 | -2.37 | 2.77 |
| 5 | 2.800\* | .858 | .028 | .23 | 5.37 |
| 3 | 1 | -9.000\* | .858 | .000 | -11.57 | -6.43 |
| 2 | -.200 | .858 | .999 | -2.77 | 2.37 |
| 4 | .000 | .858 | 1.000 | -2.57 | 2.57 |
| 5 | 2.600\* | .858 | .046 | .03 | 5.17 |
| 4 | 1 | -9.000\* | .858 | .000 | -11.57 | -6.43 |
| 2 | -.200 | .858 | .999 | -2.77 | 2.37 |
| 3 | .000 | .858 | 1.000 | -2.57 | 2.57 |
| 5 | 2.600\* | .858 | .046 | .03 | 5.17 |
| 5 | 1 | -11.600\* | .858 | .000 | -14.17 | -9.03 |
| 2 | -2.800\* | .858 | .028 | -5.37 | -.23 |
| 3 | -2.600\* | .858 | .046 | -5.17 | -.03 |
| 4 | -2.600\* | .858 | .046 | -5.17 | -.03 |
| Menit20 | 1 | 2 | 8.000\* | 1.142 | .000 | 4.58 | 11.42 |
| 3 | 8.600\* | 1.142 | .000 | 5.18 | 12.02 |
| 4 | 8.000\* | 1.142 | .000 | 4.58 | 11.42 |
| 5 | 11.200\* | 1.142 | .000 | 7.78 | 14.62 |
| 2 | 1 | -8.000\* | 1.142 | .000 | -11.42 | -4.58 |
| 3 | .600 | 1.142 | .984 | -2.82 | 4.02 |
| 4 | .000 | 1.142 | 1.000 | -3.42 | 3.42 |
| 5 | 3.200 | 1.142 | .073 | -.22 | 6.62 |
| 3 | 1 | -8.600\* | 1.142 | .000 | -12.02 | -5.18 |
| 2 | -.600 | 1.142 | .984 | -4.02 | 2.82 |
| 4 | -.600 | 1.142 | .984 | -4.02 | 2.82 |
| 5 | 2.600 | 1.142 | .193 | -.82 | 6.02 |
| 4 | 1 | -8.000\* | 1.142 | .000 | -11.42 | -4.58 |
| 2 | .000 | 1.142 | 1.000 | -3.42 | 3.42 |
| 3 | .600 | 1.142 | .984 | -2.82 | 4.02 |
| 5 | 3.200 | 1.142 | .073 | -.22 | 6.62 |
| 5 | 1 | -11.200\* | 1.142 | .000 | -14.62 | -7.78 |
| 2 | -3.200 | 1.142 | .073 | -6.62 | .22 |
| 3 | -2.600 | 1.142 | .193 | -6.02 | .82 |
| 4 | -3.200 | 1.142 | .073 | -6.62 | .22 |
| Menit30 | 1 | 2 | 8.800\* | 1.180 | .000 | 5.27 | 12.33 |
| 3 | 8.800\* | 1.180 | .000 | 5.27 | 12.33 |
| 4 | 8.600\* | 1.180 | .000 | 5.07 | 12.13 |
| 5 | 10.800\* | 1.180 | .000 | 7.27 | 14.33 |
| 2 | 1 | -8.800\* | 1.180 | .000 | -12.33 | -5.27 |
| 3 | .000 | 1.180 | 1.000 | -3.53 | 3.53 |
| 4 | -.200 | 1.180 | 1.000 | -3.73 | 3.33 |
| 5 | 2.000 | 1.180 | .459 | -1.53 | 5.53 |
| 3 | 1 | -8.800\* | 1.180 | .000 | -12.33 | -5.27 |
| 2 | .000 | 1.180 | 1.000 | -3.53 | 3.53 |
| 4 | -.200 | 1.180 | 1.000 | -3.73 | 3.33 |
| 5 | 2.000 | 1.180 | .459 | -1.53 | 5.53 |
| 4 | 1 | -8.600\* | 1.180 | .000 | -12.13 | -5.07 |
| 2 | .200 | 1.180 | 1.000 | -3.33 | 3.73 |
| 3 | .200 | 1.180 | 1.000 | -3.33 | 3.73 |
| 5 | 2.200 | 1.180 | .367 | -1.33 | 5.73 |
| 5 | 1 | -10.800\* | 1.180 | .000 | -14.33 | -7.27 |
| 2 | -2.000 | 1.180 | .459 | -5.53 | 1.53 |
| 3 | -2.000 | 1.180 | .459 | -5.53 | 1.53 |
| 4 | -2.200 | 1.180 | .367 | -5.73 | 1.33 |
| Menit45 | 1 | 2 | 7.200\* | .984 | .000 | 4.26 | 10.14 |
| 3 | 7.600\* | .984 | .000 | 4.66 | 10.54 |
| 4 | 7.400\* | .984 | .000 | 4.46 | 10.34 |
| 5 | 7.600\* | .984 | .000 | 4.66 | 10.54 |
| 2 | 1 | -7.200\* | .984 | .000 | -10.14 | -4.26 |
| 3 | .400 | .984 | .994 | -2.54 | 3.34 |
| 4 | .200 | .984 | 1.000 | -2.74 | 3.14 |
| 5 | .400 | .984 | .994 | -2.54 | 3.34 |
| 3 | 1 | -7.600\* | .984 | .000 | -10.54 | -4.66 |
| 2 | -.400 | .984 | .994 | -3.34 | 2.54 |
| 4 | -.200 | .984 | 1.000 | -3.14 | 2.74 |
| 5 | .000 | .984 | 1.000 | -2.94 | 2.94 |
| 4 | 1 | -7.400\* | .984 | .000 | -10.34 | -4.46 |
| 2 | -.200 | .984 | 1.000 | -3.14 | 2.74 |
| 3 | .200 | .984 | 1.000 | -2.74 | 3.14 |
| 5 | .200 | .984 | 1.000 | -2.74 | 3.14 |
| 5 | 1 | -7.600\* | .984 | .000 | -10.54 | -4.66 |
| 2 | -.400 | .984 | .994 | -3.34 | 2.54 |
| 3 | .000 | .984 | 1.000 | -2.94 | 2.94 |
| 4 | -.200 | .984 | 1.000 | -3.14 | 2.74 |
| Menit60 | 1 | 2 | 5.000\* | .645 | .000 | 3.07 | 6.93 |
| 3 | 6.000\* | .645 | .000 | 4.07 | 7.93 |
| 4 | 5.600\* | .645 | .000 | 3.67 | 7.53 |
| 5 | 6.200\* | .645 | .000 | 4.27 | 8.13 |
| 2 | 1 | -5.000\* | .645 | .000 | -6.93 | -3.07 |
| 3 | 1.000 | .645 | .544 | -.93 | 2.93 |
| 4 | .600 | .645 | .882 | -1.33 | 2.53 |
| 5 | 1.200 | .645 | .369 | -.73 | 3.13 |
| 3 | 1 | -6.000\* | .645 | .000 | -7.93 | -4.07 |
| 2 | -1.000 | .645 | .544 | -2.93 | .93 |
| 4 | -.400 | .645 | .970 | -2.33 | 1.53 |
| 5 | .200 | .645 | .998 | -1.73 | 2.13 |
| 4 | 1 | -5.600\* | .645 | .000 | -7.53 | -3.67 |
| 2 | -.600 | .645 | .882 | -2.53 | 1.33 |
| 3 | .400 | .645 | .970 | -1.53 | 2.33 |
| 5 | .600 | .645 | .882 | -1.33 | 2.53 |
| 5 | 1 | -6.200\* | .645 | .000 | -8.13 | -4.27 |
| 2 | -1.200 | .645 | .369 | -3.13 | .73 |
| 3 | -.200 | .645 | .998 | -2.13 | 1.73 |
| 4 | -.600 | .645 | .882 | -2.53 | 1.33 |
| \*. The mean difference is significant at the 0.05 level. | | | | | | | |