

## Lampiran 1

### Hasil Perhitungan

#### PERHITUNGAN HASIL PENELITIAN

Perhitungan analisa kadar alkohol pada air Nabeez (*Infused water*) Kurma

Ajwa (*Phoenix dactylifera L.*)

Metode : penetapan berat jenis dengan suhu tertentu dan larutan uji setelah dilakukan proses destilasi dan kadar alkohol ditetapkan berdasarkan tabel yang menggambarkan hubungan antara berat jenis dan kadar alkohol.

Tujuan : untuk mengetahui kadar alkohol dalam minuman air Nabeez

#### Kalkulasi :

Peneraan piknometer

Bobot pikno kosong = A gram

Bobot pikno + aquadest = B gram

Bobot pikno + destilat alkohol : = C gram

Berat jenis aquadest 20°C = 0,9982

$$\text{Volume piknometer} = \frac{B-A}{BJ \text{ air } 20^{\circ}\text{C}} = X$$

$$BJ \text{ alkohol} = \frac{C-A}{X} = Y$$

Tabel perhitungan pada perendaman selama 12 jam :

| Kode sampel | A       | B       | C       | VP      | BJ Aquadest |
|-------------|---------|---------|---------|---------|-------------|
| Sampel 1    | 21,4813 | 54,8352 | 54,9711 | 33,4140 | 0,9982      |
| Sampel 2    | 21,4813 | 54,8352 | 54,9892 | 33,4140 | 0,9982      |

|                  |                |                |                |                |               |
|------------------|----------------|----------------|----------------|----------------|---------------|
| <b>Sampel 3</b>  | <b>21,4813</b> | <b>54,8352</b> | <b>54,9905</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 4</b>  | <b>21,4813</b> | <b>54,8352</b> | <b>54,9746</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 5</b>  | <b>21,4813</b> | <b>54,8352</b> | <b>54,9676</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 6</b>  | <b>21,4813</b> | <b>54,8352</b> | <b>54,9673</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 7</b>  | <b>21,4813</b> | <b>54,8352</b> | <b>54,9649</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 8</b>  | <b>21,4813</b> | <b>54,8352</b> | <b>54,9578</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 9</b>  | <b>21,4813</b> | <b>54,8352</b> | <b>54,9640</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 10</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9705</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 11</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9632</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 12</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9757</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 13</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9826</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 14</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9642</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 15</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9670</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 16</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9718</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 17</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9619</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 18</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9799</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 19</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9762</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 20</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9683</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 21</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9716</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 22</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9660</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 23</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9721</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 24</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9636</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 25</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9645</b> | <b>33,4140</b> | <b>0,9982</b> |

|                  |                |                |                |                |               |
|------------------|----------------|----------------|----------------|----------------|---------------|
| <b>Sampel 26</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9689</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 27</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9512</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 28</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9742</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 29</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9608</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 30</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9912</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 31</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9823</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 32</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9901</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 33</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9680</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 34</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9631</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 35</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9769</b> | <b>33,4140</b> | <b>0,9982</b> |

**Tabel perhitungan pada perendaman selama 18 jam :**

| <b>Kode sampel</b> | <b>A</b>       | <b>B</b>       | <b>C</b>       | <b>VP</b>      | <b>BJ Aquadest</b> |
|--------------------|----------------|----------------|----------------|----------------|--------------------|
| <b>Sampel 1</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9273</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 2</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9239</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 3</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9260</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 4</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9227</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 5</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9246</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 6</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9197</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 7</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9252</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 8</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9284</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 9</b>    | <b>21,4813</b> | <b>54,8352</b> | <b>54,9186</b> | <b>33,4140</b> | <b>0,9982</b>      |
| <b>Sampel 10</b>   | <b>21,4813</b> | <b>54,8352</b> | <b>54,9258</b> | <b>33,4140</b> | <b>0,9982</b>      |

|                  |                |                |                |                |               |
|------------------|----------------|----------------|----------------|----------------|---------------|
| <b>Sampel 11</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9243</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 12</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9195</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 13</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9268</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 14</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9224</b> | <b>33,4140</b> | <b>0,9982</b> |
| <b>Sampel 15</b> | <b>21,4813</b> | <b>54,8352</b> | <b>54,9179</b> | <b>33,4140</b> | <b>0,9982</b> |

### Contoh Perhitungan

#### Contoh 1

$$\frac{54,8352 - 21,4813}{0,9982} = 33,4140\text{m}$$

$$\frac{54,9711 - 21,4813}{33,4140} = 1,0022\text{gr/ml}$$

#### Contoh 2

$$\frac{54,8352 - 21,4813}{0,9982} = 33,4140\text{ml}$$

$$\frac{54,9892 - 21,4813}{33,4140} = 1,0028\text{gr/ml}$$

## lampiran 2 Surat Izin Penelitian

|                                                                                                                                                                                                                                                                 |                                                                                   |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------|
|                                                                                                                                                                                |  | <b>Fakultas Ilmu Kesehatan</b> |
| Nomor                                                                                                                                                                                                                                                           | : 159.4/II.3.AU/F/FIK/2023                                                        |                                |
| Lampiran                                                                                                                                                                                                                                                        | : -                                                                               |                                |
| Perihal                                                                                                                                                                                                                                                         | : Surat Ijin Penelitian                                                           |                                |
| Kepada Yth.<br><b>Dekan Fakultas Ilmu Kesehatan UMSurabaya</b><br>Di<br>Tempat                                                                                                                                                                                  |                                                                                   |                                |
| <i>Assalamu'alaikum Wr. Wb.</i>                                                                                                                                                                                                                                 |                                                                                   |                                |
| Dalam rangka menyelesaikan Tugas Akhir berupa Karya Tulis Ilmiah (KTI), Mahasiswa Program Studi DIII Teknologi Laboratorium Medis Fakultas Ilmu Kesehatan Universitas Muhammadiyah Surabaya Tahun Akademik 2022/2023, atas nama mahasiswa :                     |                                                                                   |                                |
| Nama                                                                                                                                                                                                                                                            | : <b>RIHADATUL AISY</b>                                                           |                                |
| NIM                                                                                                                                                                                                                                                             | : 20200662016                                                                     |                                |
| Judul KTI                                                                                                                                                                                                                                                       | : Analisa Kadar Alkohol pada Air Nabeez (Infused Water Kurma Ajwa)                |                                |
| Bermaksud untuk melakukan penelitian selama 1 bulan yang akan dimulai sejak tanggal 15 Mei 2023 s/d 15 Juni 2023 di Laboratorium Kimia FIK UMSurabaya. Sehubungan dengan hal tersebut kami mohon dengan hormat agar Ibu berkenan memberikan ijin yang dimaksud. |                                                                                   |                                |
| Demikian atas perhatian dan kerja samanya yang baik kami sampaikan terima kasih.                                                                                                                                                                                |                                                                                   |                                |
| <i>Wassalamu'alaikum Wr. Wb.</i>                                                                                                                                                                                                                                |                                                                                   |                                |
| Surabaya, 8 Mei 2023<br>Wakil Dekan I,<br><br><b>Dr. Supatmi, S.Kep., Ns., M.Kes</b><br>NIK : 012.05.1.1973.97.018                                                          |                                                                                   |                                |
| Tembusan :<br>1. Wakil Dekan 2<br>2. Ka. Lab. FIK                                                                                                                                                                                                               |                                                                                   |                                |

Morality, Intellectuality and Entrepreneurship

FAKULTAS AGAMA ISLAM : FAKULTAS KESEHATAN DAN KAJI PENDIDIKAN : FAKULTAS TEKNIK  
FAKULTAS EKONOMI DAN BISNIS : FAKULTAS HUKUM : FAKULTAS ILMU KESEHATAN  
FAKULTAS PSIKOLOGI : FAKULTAS REKREASI DAN OLAH RAGA : PROGRAM PASCASARJANA

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### Lampiran 3 tabel bobot jenis kadar alkohol

| <div>  <div> Praktikum Kimia Makanan dan Minuman<br/> Laboratorium Kimia Kesehatan<br/> D3 Analis Kesehatan FIK UMSurabaya </div> </div> |              |       |                                                                                             |                                        |                                        |                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------|---------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| Bobot<br>Jenis                                                                                                                                                                                                            | Kadar Etanol |       | Koreksi bobot jenis untuk perbandingan suhu<br>1 <sup>o</sup> , berlaku untuk suhu antara : |                                        |                                        |                                        |
|                                                                                                                                                                                                                           | % b/b        | % v/v | 10 <sup>o</sup> dan<br>15 <sup>o</sup>                                                      | 15 <sup>o</sup> dan<br>20 <sup>o</sup> | 20 <sup>o</sup> dan<br>25 <sup>o</sup> | 25 <sup>o</sup> dan<br>50 <sup>o</sup> |
| 70                                                                                                                                                                                                                        | 14,9         | 18,5  | 24                                                                                          | 30                                     | 34                                     | 38                                     |
| 80                                                                                                                                                                                                                        | 14,1         | 17,6  | 22                                                                                          | 28                                     | 32                                     | 38                                     |
| 90                                                                                                                                                                                                                        | 13,4         | 16,6  | 22                                                                                          | 27                                     | 32                                     | 37                                     |
| 0,9800                                                                                                                                                                                                                    | 12,5         | 15,7  | 21                                                                                          | 25                                     | 32                                     | 35                                     |
| 10                                                                                                                                                                                                                        | 11,8         | 14,8  | 20                                                                                          | 24                                     | 31                                     | 34                                     |
| 20                                                                                                                                                                                                                        | 11,0         | 13,8  | 18                                                                                          | 24                                     | 28                                     | 33                                     |
| 30                                                                                                                                                                                                                        | 10,3         | 12,9  | 17                                                                                          | 24                                     | 28                                     | 33                                     |
| 40                                                                                                                                                                                                                        | 9,7          | 12,0  | 16                                                                                          | 24                                     | 28                                     | 32                                     |
| 50                                                                                                                                                                                                                        | 9,0          | 11,2  | 16                                                                                          | 22                                     | 28                                     | 32                                     |
| 0,9860                                                                                                                                                                                                                    | 8,3          | 10,4  | 0,00014                                                                                     | 0,00020                                | 0,00026                                | 0,00032                                |
| 70                                                                                                                                                                                                                        | 7,7          | 9,5   | 14                                                                                          | 20                                     | 26                                     | 32                                     |
| 80                                                                                                                                                                                                                        | 7,0          | 8,7   | 12                                                                                          | 20                                     | 24                                     | 30                                     |
| 90                                                                                                                                                                                                                        | 6,3          | 7,9   | 12                                                                                          | 20                                     | 24                                     | 30                                     |
| 0,9900                                                                                                                                                                                                                    | 5,7          | 7,1   | 12                                                                                          | 18                                     | 24                                     | 30                                     |
| 10                                                                                                                                                                                                                        | 5,0          | 6,4   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 20                                                                                                                                                                                                                        | 4,4          | 5,6   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 30                                                                                                                                                                                                                        | 3,8          | 4,8   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 40                                                                                                                                                                                                                        | 3,2          | 4,1   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 50                                                                                                                                                                                                                        | 2,7          | 3,4   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 60                                                                                                                                                                                                                        | 2,1          | 2,7   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 70                                                                                                                                                                                                                        | 1,0          | 2,0   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 80                                                                                                                                                                                                                        | 1,1          | 1,3   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 90                                                                                                                                                                                                                        | 0,5          | 0,7   | 12                                                                                          | 18                                     | 24                                     | 28                                     |
| 1,0000                                                                                                                                                                                                                    | 0,0          | 0,0   | 12                                                                                          | 18                                     | 24                                     | 28                                     |

[illegible]

## Lampiran 5 dokumentasi Penelitian



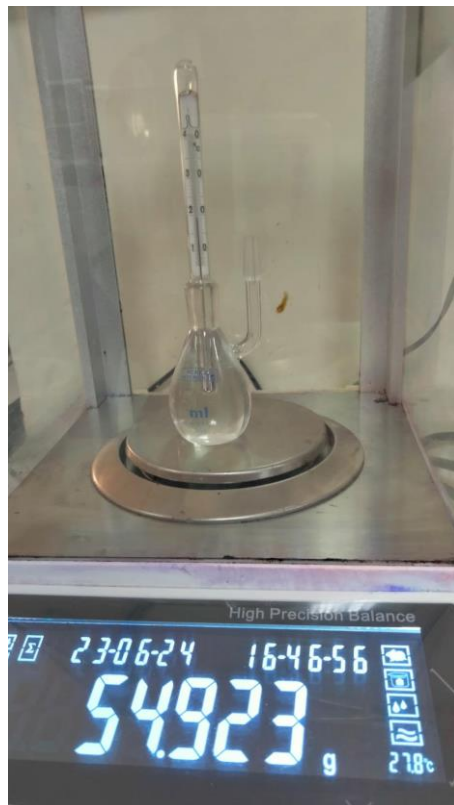
a. (proses destilasi sampel)



b.) (Sampel air Nabeez kurma ajwa)



c. (pengukuran aquadest)



**d. (penimbangan destilat menggunakan piknometer)**



**e. (proses destilasi sampel)**



**f. (proses destilasi sampel)**



**g. (proses destilasi sampel)**



**h. (proses destilasi sampel)**

## lampiran 6 Endorsment Letter



**umsurabaya**  
UNIVERSITAS MUHAMMADIYAH SURABAYA

**Pusat  
Bahasa**

### **ENDORSEMENT LETTER**

1036/PB-UMS/EL/IX/2023

This letter is to certify that the abstract of the thesis below

Title : Analysis of Alcohol Content in *Nabeer* Water (Infused Water) *Ajwa*  
Dates (*Phoenix Dactylifera L.*)  
Student's name : Rihadatul Aisy  
Student's ID Number : 20200662016  
Department : Medical Laboratory Technology, Diploma-III, Faculty of Health and  
Sciences, Universitas Muhammadiyah Surabaya Indonesia

has been endorsed by Pusat Bahasa *UMSurabaya* for further approval by the examining  
committee of the faculty.

Surabaya, September 26, 2023

Chair person,



*Hamsia*

Dr. Waode Hamsia, M.Pd

lampiran 7 surat bebas plagiasi



Perpustakaan

**ASLI**

FM-009 PERPUS-07

**SURAT KETERANGAN BUKTI BEBAS PLAGIASI**

Naskah tugas akhir / skripsi / karya tulis / tesis\*) yang diserahkan atas :

Nama : Rihadatul Aisy  
NIM : 20200662016  
Fakultas/Prodi : Fakultas Ilmu Kesehatan (D3) Ahli Teknologi Laboratorium Medis  
Alamat : seddur, pakong, pamekasan  
Judul : Analisa Kadar Alkohol Pada Air Nabeez (Infused Water) Kurma Ajwa  
(Phoenix Dactylifera L.)  
telah diserahkan dan memenuhi kriteria batas maksimal yang sudah ditentukan.

Petugas perpustakaan

Putri Rokhmawati

Surabaya, 29 September 2023

Mahasiswa,

Rihadatul Aisy

Mengetahui,  
Kepala Perpustakaan  
  
Drs. Yarno, M.Pd.

**\* DILARANG KERAS MENYEBARLUASKAN FORM INI**

lampiran 8 surat bebas pinjam



Perpustakaan

**ASLI**

FM-002-PERPUS-07

**SURAT KETERANGAN BEBAS PINJAM**

Dengan ini menyatakan bahwa :

Nama : Rihadatul aisy

NIM : 20200662016

Program Studi/Fakultas : (D3) Ahli Teknologi Laboratorium Medis/Fakultas Ilmu Kesehatan

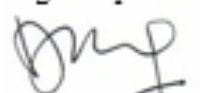
Alamat : seddur, pakong, pamekasan

No.Telp/HP : 082334714115

Tidak memiliki pinjaman bahan pustaka di Perpustakaan Universitas Muhammadiyah Surabaya.  
Surat keterangan ini digunakan untuk: **Mengambil Ijazah**

Mengetahui,  
Kepala Perpustakaan  
  
Drs. Yamo, M.Pd.

Surabaya, 02 Oktober 2023  
Petugas Perpustakaan

  
Dyah Ayu S.