

LAMPIRAN A

SURAT DETERMINASI BUAH NAGA MERAH (*Hylocereus polyrhizus*)



UNIT LAYANAN JASA DAN PENGUJIAN
FAKULTAS FARMASI
UNIVERSITAS KATOLIK WIDYA MANDALA SURABAYA

SURAT KETERANGAN IDENTIFIKASI No. 014 /LJ-FF/I/2013

Bersama ini menerangkan bahwa bahan yang dibawa oleh:

Nama : Rahajeng Jalmi Zionis (NRP: 2443010218)
Instansi : Fakultas Farmasi Unika Widya Mandala Surabaya
Tanggal : 14 Februari 2014
Jenis bahan : Bahan segar (Buah)

Adalah memiliki klasifikasi sebagai berikut:

Divisi : Spermatophyta
Sub Divisi : Angiospermae
Kelas : Dicotyledoneae
Bangsa : Opuntiales
Suku : Cactaceae
Marga : *Hylocereus*
Jenis : *Hylocereus polyrhizus* Britt & Rose.

Berdasarkan pustaka:

1. Backer, C.A, Vol 1. 1963. *Flora of Java*. Hal.318
2. Bailey, L.H, Jilid 1. 1950. *The Standard Cyclopedia of Horticulture*. Hal 3.

Demikian surat keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Surabaya, 18 Februari 2014

Mengetahui
Koordinator Layanan Jasa

Lisa Soegianto, S.Si., M.Sc., Apt
NIK. 241.07.0609



Pemeriksa,

Sumi Wijaya, Ph.D., Apt
NIK. 241.03.0588

LAMPIRAN B

SERTIFIKAT ANALISIS ETANOL 96%



**Kementerian
Perindustrian
REPUBLIK INDONESIA**

**BADAN PENGKAJIAN KEBIJAKAN IKLIM DAN MUTU INDUSTRI
BALAI RISET DAN STANDARDISASI INDUSTRI SURABAYA
LABORATORIUM PENGUJIAN DAN KALIBRASI
BARISTAND INDUSTRI SURABAYA**

Jl. Jipet Wonokromo No. 360 Surabaya 60244, Telp. (031) 8410054, (031) 7500034, Fax. (031) 8410480
<http://surabaya.bkirkemendagri.go.id/>

LAPORAN HASIL UJI

No. 13M7A.HUK/V/2013

Nomor Analisa : 2013P1163
Contoh : Alkohol Pilsnir
Merk : AP, T & E

Nama Pengirim : PTPN XI (Persero) Pabrik Alkohol dan Spiritus
Distrik :
Alamat : Jl. Nyaloran No. 03 Dadiroto Lumajang -
Jawa Timur

Dibawa Tanggal : 20 April 2013
Catatan Sampel : 1 liter alkohol putih dalam wadah jerrycan

No.	Parameter Uji	Satuan	Hasil Uji	Persyaratan Mutu SNI 08-3565-1994	Metode Uji
1	Kadar etanol pada 15 °C	% v/v	97,7	max. 98,3 min. 96,3	SNI 08-3565-1994
2	Kadar etanol pada 30 °C	% v/v	98,3	-	SNI 08-3565-1994
3	Densitas pada 15 °C	g/ml	0,8647	-	SNI 08-3565-1994
4	Densitas pada 30 °C	g/ml	0,8216	-	SNI 08-3565-1994
5	Bahan yang dapat dioksidakan (uji barbat)	mg/l	26,2	min. 20	SNI 08-3565-1994
6	Alkohol (sebagai etanolik)	mg/l	2,4	max. 4	SNI 08-3565-1994
7	Alkohol (sebagai etanolik)	mg/l	2,9	max. 4	SNI 08-3565-1994
8	Kesadahan (sebagai asam asetat)	mg/l	Negatif	negatif	SNI 08-3565-1994
9	Bisa penguyutan	mg/l	5,6	max. 15	SNI 08-3565-1994
10	Melewat	mg/l	8	max. 50	SNI 08-3565-1994
11	Warna	negatif	negatif	negatif	SNI 08-3565-1994
12	Zat	Jernih	Jernih	-	Visual
13	Zat	Khas	Khas	-	Visual

Catatan : 1. Parameter uji sesuai permintaan.



Pembelian :
Laboratorium Uji : hanya berlaku untuk analisis data dan berdasar data hasil analisis laboratorium
Laboratorium Uji : hanya berlaku untuk analisis data dan berdasar data hasil analisis laboratorium
Kedua Dua : RRI - 11,2,4
Hal. 2 dari 2 (Page 2 of 2)

LAMPIRAN C

HASIL PEMERIKSAAN STANDARISASI NON SPESIFIK SERBUK SIMPLISIA BUAH NAGA MERAH

A. Hasil penetapan uji susut pengeringan serbuk simplisia

Malang

Replikasi	% Susut Pengeringan
I	6,2
II	6,4
III	6,4
$\bar{x} \pm SD$	$6,33 \pm 0,12$

Banyuwangi

Replikasi	% Susut Pengeringan
I	6,2
II	6,4
III	6,2
$\bar{x} \pm SD$	$6,27 \pm 0,12$

Pasuruan

Replikasi	% Susut Pengeringan
I	6,2
II	6,4
III	6,4
$\bar{x} \pm SD$	$6,33 \pm 0,12$

B. Hasil penetapan kadar air

Malang

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	44,6513	1,0071	45,6059	5,21
II	48,2502	1,0038	49,2046	4,92
III	44,6342	1,0033	45,5852	5,21
$\bar{x} \pm SD$				5,11 $\pm$ 0,16

1. Kadar air =

$$\begin{aligned}
 & \frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{1,0071 - (45,6059 - 44,6513)}{1,0071} \times 100\% \\
 &= 5,21 \%
 \end{aligned}$$

2. Kadar air =

$$\begin{aligned}
 & \frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{1,0038 - (49,2046 - 48,2502)}{1,0038} \times 100\% \\
 &= 4,92 \%
 \end{aligned}$$

3. Kadar air =

$$\begin{aligned}
 & \frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{1,0033 - (45,5852 - 44,6342)}{1,0033} \times 100\% \\
 &= 5,21 \%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	60,2775	1,0112	61,2572	3,12
II	58,4511	1,0130	59,4322	3,15
III	59,1260	1,0105	60,1044	3,18
— x ± SD				3,15 ± 0,03

- Kadar air =
$$\frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\%$$

$$= \frac{1,0112 - (60,2775 - 60,2775)}{1,0112} \times 100\%$$

$$= 3,12 \%$$
- Kadar air =
$$\frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\%$$

$$= \frac{1,0130 - (58,4511 - 58,4511)}{1,0130} \times 100\%$$

$$= 3,15 \%$$
- Kadar air =
$$\frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\%$$

$$= \frac{1,0105 - (59,1260 - 59,1260)}{1,0105} \times 100\%$$

$$= 3,15 \%$$

Pasuruan

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	44,6444	1,0170	45,6084	5,21
II	48,2500	1,0017	49,2010	5,06
III	44,6329	1,0049	45,5906	4,69
$\bar{x} \pm SD$				$4,98 \pm 0,27$

- $$\text{Kadar air} = \frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\%$$

$$= \frac{1,0170 - (45,6084 - 44,6444)}{1,0170} \times 100\%$$

$$= 5,21 \%$$
- $$\text{Kadar air} = \frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\%$$

$$= \frac{1,0017 - (49,2010 - 48,2500)}{1,0017} \times 100\%$$

$$= 5,06\%$$
- $$\text{Kadar air} = \frac{\text{berat simplisia} - ((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\%$$

$$= \frac{1,0049 - (45,5906 - 44,6329)}{1,0049} \times 100\%$$

$$= 4,69 \%$$

C. Hasil penetapan kadar abu total

Malang

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + abu konstan (g)	% kadar
I	27,9773	1,0057	28,0490	7,13
II	26,4729	1,0062	26,5487	7,63
III	36,1622	1,0032	36,2421	7,96
X ± SD				7,57 ± 0,42

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{28,0490 - 27,9773}{1,0057} \times 100\% \\
 &= 7,13\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{26,5487 - 26,4729}{1,0062} \times 100\% \\
 &= 7,63\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{36,2421 - 36,1622}{1,0032} \times 100\% \\
 &= 7,96\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + abu konstan (g)	% kadar
I	36,1684	1,0046	36,2502	8,22
II	35,0926	1,0058	35,1745	8,16
III	34,6343	1,0056	34,7096	7,34
X ± SD				7,90 ± 0,49

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{(\text{Berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{36,2502 - 36,1684}{1,0046} \times 100\% \\
 &= 8,22\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{(\text{Berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{35,1745 - 35,0926}{1,0058} \times 100\% \\
 &= 8,16\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{(\text{Berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{34,7096 - 34,6343}{1,0056} \times 100\% \\
 &= 7,34\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + abu konstan (g)	% kadar
I	36,1632	1,0075	36,2243	6,06
II	34,5862	1,0076	34,6445	5,78
III	35,2133	1,0072	35,2737	5,99
X ± SD				6,94 ± 0,15

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{36,2243 - 36,1632}{1,0075} \times 100\% \\
 &= 6,06\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{34,6445 - 34,5862}{1,0076} \times 100\% \\
 &= 5,78\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{35,2737 - 35,2133}{1,0072} \times 100\% \\
 &= 5,99\%
 \end{aligned}$$

D. Hasil penentuan kadar abu tidak larut asam

Malang

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + kertas saring konstan (g)	% kadar
I	27,9773	1,0057	27,9792	6,94
II	26,4717	1,0062	26,4729	7,63
III	36,1622	1,0032	36,1728	6,97
X ± SD				7,16 ± 0,39

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0747) - (27,9792 - 27,9773)}{1,0057} \times 100\% \\
 &= 6,94\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0763) - (26,4729 - 26,4717)}{1,0062} \times 100\% \\
 &= 7,63\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0769) - (36,1728 - 36,1622)}{1,0032} \times 100\% \\
 &= 6,97\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + kertas saring konstan (g)	% kadar
I	36,1676	1,0046	36,1756	7,92
II	35,0924	1,0058	35,0960	7,80
III	34,6357	1,0056	34,6394	6,98
X ± SD				7,56 ± 0,51

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0046) - (36,1756 - 36,0076)}{1,0046} \times 100\% \\
 &= 7,92\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0051) - (35,0960 - 34,0904)}{1,0058} \times 100\% \\
 &= 7,80\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0057) - (34,6394 - 34,0057)}{1,0056} \times 100\% \\
 &= 6,98\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + kertas saring konstan (g)	% kadar
I	36,1632	1,0075	36,1643	5,95
II	34,5862	1,0076	34,5903	5,38
III	35,2133	1,0072	35,2243	4,90
X ± SD				3,91 ± 0,06

$$\begin{aligned}
 1. \text{ Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0001) - (36,1643 - 36,1632)}{1,0075} \times 100\% \\
 &= 5,95\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0002) - (34,5903 - 34,5862)}{1,0076} \times 100\% \\
 &= 4,90\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0004) - (35,2243 - 35,2133)}{1,0072} \times 100\% \\
 &= 4,90\%
 \end{aligned}$$

E. Hasil penentuan kadar abu yang larut air

Malang

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + kertas saring konstan (g)	% kadar
I	28,8660	1,0054	28,8945	5,20
II	29,4014	1,0049	29,4248	5,14
III	25,9478	1,0014	25,9713	5,78
X ± SD				5,37 ± 0,35

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0054) - (28,8945 - 28,8660)}{1,0054} \times 100\% \\
 &= 5,20\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0051) - (29,4248 - 29,4014)}{1,0049} \times 100\% \\
 &= 5,14\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0014) - (25,9713 - 25,9478)}{1,0014} \times 100\% \\
 &= 5,78\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + kertas saring konstan (g)	% kadar
I	30,2494	2,0006	30,3004	1,61
II	25,8928	2,0004	25,9414	1,75
III	23,9098	2,0005	23,9602	1,53
X ± SD				1,63 ± 0,11

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(10,0000) - (30,3004 - 30,2494)}{2,0006} \times 100\% \\
 &= 1,61\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(10,0000) - (25,9414 - 25,8928)}{2,0004} \times 100\% \\
 &= 1,75\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(10,0000) - (23,9602 - 23,9098)}{2,0005} \times 100\% \\
 &= 1,53\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat krus (g)	Berat simplisia (g)	Berat krus + kertas saring konstan (g)	% kadar
I	31,1700	1,0015	31,1724	6,21
II	33,4830	1,0084	33,4894	6,46
III	36,2460	1,0064	36,2536	5,28
X ± SD				5,98 ± 0,62

- Kadar abu = $\frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\%$

$$= \frac{(0,0848) - (31,1724 - 31,1700)}{1,0015} \times 100\%$$

$$= 6,21\%$$
- Kadar abu = $\frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\%$

$$= \frac{(0,0710) - (33,4894 - 33,4830)}{1,0084} \times 100\%$$

$$= 6,46\%$$
- Kadar abu = $\frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat simplisia}} \times 100\%$

$$= \frac{(0,0665) - (36,2536 - 36,2460)}{1,0064} \times 100\%$$

$$= 5,28\%$$

LAMPIRAN D

HASIL PEMERIKSAAN STANDARISASI SPESIFIK SIMPLISIA KERING BUAH NAGA MERAH

A. Hasil pengamatan organoleptis

Pengamatan	Simplisia kering buah naga
Bentuk	Serbuk kering
Warna	Merah kecoklatan
Bau	Karamel

B. Hasil penetapan kadar sari larut air Malang

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	48,3266	2,0050	48,4786	37,90
II	58,8950	2,0035	59,0368	35,40
III	56,7217	2,0082	56,8886	41,50
X ± SD				38,26±3,06

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{(\text{berat cawan+simplisia}) - \text{berat cawan}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(48,4786 - 48,3266)}{2,0050} \times 100\% \\
 &= 37,90\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{(\text{berat cawan+simplisia}) - \text{berat cawan}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(59,0368 - 58,8950)}{2,0035} \times 100\% \\
 &= 35,40\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan+simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(56,9996 - 56,7217)}{0,4016} \times 100\% \\
 &= 41,50\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	60,2805	1,9965	60,4249	36,20
II	36,4027	1,9992	36,5499	36,80
III	38,9324	1,9948	39,0997	41,90
X ± SD				38,30±3,13

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat cawan+simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(60,4249 - 60,2805)}{0,3992} \times 100\% \\
 &= 36,20\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat cawan+simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(36,5499 - 36,4027)}{0,3992} \times 100\% \\
 &= 36,80\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan+simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(39,0997 - 38,9324)}{0,3992} \times 100\% \\
 &= 41,90\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	58,8734	1,9969	59,0687	48,90
II	59,1957	1,9961	59,3415	46,20
III	58,4862	1,9915	58,6332	36,90
X ± SD				44,00±6,29

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat cawan+simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(59,0687 - 58,8734)}{0,3974} \times 100\% \\
 &= 48,90\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat cawan+simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(59,3415 - 59,1957)}{0,3992} \times 100\% \\
 &= 46,20\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan+simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(58,6332 - 58,4862)}{0,3988} \times 100\% \\
 &= 36,90\%
 \end{aligned}$$

C. Hasil penetapan kadar sari larut etanol

Malang

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	48,2489	1,9992	48,4326	45,90
II	60,8700	1,9967	61,0541	46,10
III	56,7089	1,9987	56,8801	42,80
X ± SD				44,93 ± 1,85

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(48,4326 - 48,2489)}{0,1992} \times 100\% \\
 &= 45,90\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(61,0541 - 60,8700)}{0,1992} \times 100\% \\
 &= 46,10\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(56,8801 - 56,7089)}{0,1997} \times 100\% \\
 &= 42,80\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	41,5514	1,9910	41,6991	37,10
II	36,4034	1,9962	36,5722	42,20
III	38,8323	1,9969	38,9966	41,10
X ± SD				44,93 ± 1,85

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(41,6991 - 41,5514)}{0,3992} \times 100\% \\
 &= 37,10\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(36,5722 - 36,4034)}{0,3992} \times 100\% \\
 &= 42,20\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(38,9966 - 38,8323)}{0,3994} \times 100\% \\
 &= 41,10\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat cawan (g)	Berat simplisia (g)	Berat cawan + simplisia konstan (g)	% kadar
I	59,8707	2,0030	60,0324	40,40
II	59,1258	2,0072	59,2954	42,30
III	58,4491	2,0069	58,6152	41,38
X ± SD				41,36 ± 0,95

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(60,0324 - 59,8707)}{2,0030} \times 100\% \\
 &= 40,40\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(59,2954 - 59,1258)}{2,0072} \times 100\% \\
 &= 42,30\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{simplisia}) - \text{berat cawan})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(58,6152 - 58,4491)}{2,0069} \times 100\% \\
 &= 41,38\%
 \end{aligned}$$

LAMPIRAN E

HASIL PEMERIKSAAN STANDARISASI NON SPESIFIK EKSTRAK ETANOL BUAH NAGA MERAH

A. Perhitungan randemen ekstrak etanol buah naga merah

Malang

$$\begin{aligned}\text{Berat simplisia buah naga merah} &= 150 \text{ gram} \\ \text{Berat ekstrak kental buah naga merah} &= 76,0269 \text{ gram} \\ \text{Randemen ekstrak buah naga merah} &= \frac{76,0269}{150} \times 100\% \\ &= 50,68\%\end{aligned}$$

Banyuwangi

$$\begin{aligned}\text{Berat simplisia buah naga merah} &= 150 \text{ gram} \\ \text{Berat ekstrak kental buah naga merah} &= 55,7767 \text{ gram} \\ \text{Randemen ekstrak buah naga merah} &= \frac{55,7767}{150} \times 100\% \\ &= 37,18\%\end{aligned}$$

Pasuruan

$$\begin{aligned}\text{Berat simplisia buah naga merah} &= 150 \text{ gram} \\ \text{Berat ekstrak kental buah naga merah} &= 44,8151 \text{ gram} \\ \text{Randemen ekstrak buah naga merah} &= \frac{44,8151}{150} \times 100\% \\ &= 29,88\%\end{aligned}$$

B. Hasil penetapan uji susut pengeringan
Malang

Replikasi	Berat botol timbang (g)	Berat ekstrak (g)	Berat botol timbang + ekstrak konstan (g)	% kadar
I	12,7367	1,0222	13,6958	6,17
II	13,1223	1,0299	14,0814	6,19
III	12,3640	1,0026	13,3105	5,90
X ± SD				6,08±0,16

$$\begin{aligned}
 1. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0222 - (13,6958 - 12,7367)}{1,0222} \times 100\% \\
 &= 6,17 \%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0299 - (14,0814 - 13,1223)}{1,0299} \times 100\% \\
 &= 6,19 \%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0026 - (13,3105 - 12,3640)}{1,0026} \times 100\% \\
 &= 5,90 \%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat botol timbang (g)	Berat ekstrak (g)	Berat botol timbang + ekstrak konstan (g)	% kadar
I	13,1214	1,0632	14,1221	5,87
II	12,2544	1,0198	13,2219	5,60
III	12,8424	1,0794	13,8580	5,78
X ± SD				5,75 ± 0,14

$$\begin{aligned}
 1. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0632 - (14,1221 - 13,1214)}{1,0632} \times 100\% \\
 &= 5,87 \%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0198 - (13,2219 - 12,2544)}{1,0198} \times 100\% \\
 &= 5,60 \%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0794 - (13,8580 - 12,8424)}{1,0794} \times 100\% \\
 &= 5,78 \%
 \end{aligned}$$

Pasuruan

Replikasi	Berat botol timbang (g)	Berat ekstrak (g)	Berat botol timbang + ekstrak konstan (g)	% kadar
I	12,4278	1,0361	13,4130	4,91
II	12,7341	1,0810	13,7660	4,91
III	13,0549	1,0251	14,0122	5,02
X ± SD				4,95 ± 0,06

$$\begin{aligned}
 1. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0361 - (13,4130 - 12,4278)}{1,0361} \times 100\% \\
 &= 4,91 \%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0810 - (13,7660 - 12,7341)}{1,0810} \times 100\% \\
 &= 4,91 \%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Susut pengeringan} &= \frac{\text{berat ekstrak} - ((\text{berat botol} + \text{ekstrak}) - \text{berat botol})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{1,0251 - (14,0122 - 13,0549)}{1,0251} \times 100\% \\
 &= 5,02 \%
 \end{aligned}$$

C. Hasil penetapan kadar air
Malang

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	22,1381	2,0346	24,0371	6,66
II	22,4688	2,0102	24,3510	6,37
III	23,6328	2,0584	25,5609	6,33
X ± SD				6,45 ± 0,18

$$\begin{aligned}
 1. \text{ Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0346 - (24,0371 - 22,1381)}{2,0346} \times 100\% \\
 &= 6,66 \%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0102 - (24,3510 - 22,4688)}{2,0102} \times 100\% \\
 &= 6,37\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0584 - (25,5609 - 23,6328)}{2,0584} \times 100\% \\
 &= 6,33 \%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	21,2600	2,0362	23,1666	6,36
II	28,0339	2,0322	29,9415	6,13
III	23,9266	2,0223	25,8216	6,29
X ± SD				6,26 ± 0,12

$$\begin{aligned}
 1. \quad \text{Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0362 - (23,1666 - 21,2600)}{2,0362} \times 100\% \\
 &= 6,36 \%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0322 - (29,9415 - 28,0339)}{2,0322} \times 100\% \\
 &= 6,13\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0223 - (25,8216 - 23,9266)}{2,0223} \times 100\% \\
 &= 6,29 \%
 \end{aligned}$$

Pasuruan

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	38,8304	2,0453	40,7466	6,31
II	36,4017	2,0491	38,3189	6,43
III	48,2477	2,0136	50,1367	6,18
X ± SD				6,30 ± 0,12

$$\begin{aligned}
 1. \quad \text{Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0453 - (40,7466 - 38,8304)}{2,0453} \times 100\% \\
 &= 6,31 \%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0491 - (38,3189 - 36,4017)}{2,0491} \times 100\% \\
 &= 6,43\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar air} &= \frac{\text{berat ekstrak} - ((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{2,0136 - (50,1367 - 48,2477)}{2,0136} \times 100\% \\
 &= 6,18 \%
 \end{aligned}$$

D. Hasil penetapan kadar abu total
Malang

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + abu konstan (g)	% kadar
I	34,5698	1,0710	34,6051	3,31
II	34,5696	1,0704	34,6046	3,26
III	36,1597	1,0654	36,1931	3,13
X ± SD				3,23 ± 0,09

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{((\text{berat krus} + \text{simplicisia}) - \text{berat krus})}{\text{berat simplicisia}} \times 100\% \\
 &= \frac{34,6051 - 34,5698}{1,0710} \times 100\% \\
 &= 3,31\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{((\text{berat krus} + \text{simplicisia}) - \text{berat krus})}{\text{berat simplicisia}} \times 100\% \\
 &= \frac{34,6046 - 34,5696}{1,0474} \times 100\% \\
 &= 3,26\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{((\text{berat krus} + \text{simplicisia}) - \text{berat krus})}{\text{berat simplicisia}} \times 100\% \\
 &= \frac{36,1931 - 36,1597}{1,0654} \times 100\% \\
 &= 3,13\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + abu konstan (g)	% kadar
I	33,4234	1,0406	33,4442	1,99
II	31,2354	1,0668	31,2628	2,57
III	36,6338	1,0540	36,6550	2,01
X ± SD				2,19 ± 0,32

$$\begin{aligned}
 1. \quad \text{Kadar abu} &= \frac{((\text{berat krus} + \text{simplisia}) - \text{berat krus kosong})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{33,4442 - 33,4234}{1,0406} \times 100\% \\
 &= 1,99\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar abu} &= \frac{((\text{berat krus} + \text{simplisia}) - \text{berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{31,2628 - 31,2354}{1,0668} \times 100\% \\
 &= 2,57\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar abu} &= \frac{((\text{berat krus} + \text{simplisia}) - \text{berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{36,6550 - 36,6338}{1,0540} \times 100\% \\
 &= 2,01\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + abu konstan (g)	% kadar
I	31,1752	1,0452	31,2056	2,91
II	35,6133	1,0463	35,6442	2,95
III	36,1852	1,0524	36,2147	2,90
X ± SD				2,92 ± 0,02

$$\begin{aligned}
 1. \text{ Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{31,2056 - 31,1752}{1,0452} \times 100\% \\
 &= 2,91\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{35,6442 - 35,6133}{1,0463} \times 100\% \\
 &= 2,95\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar abu} &= \frac{(\text{berat krus+simplisia}) - \text{berat krus}}{\text{berat simplisia}} \times 100\% \\
 &= \frac{36,2147 - 36,1852}{1,0524} \times 100\% \\
 &= 2,90\%
 \end{aligned}$$

E. Hasil penentuan kadar abu tidak larut asam

Malang

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + kertas saring konstan (g)	% kadar
I	31,1623	1,0647	31,1651	2,88
II	34,5696	1,0704	34,5710	3,13
III	36,1597	1,0654	36,1599	3,11
X ± SD				3,04 ± 0,14

$$\begin{aligned}
 1. \text{ Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{berat kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\% \\
 &= \frac{(0,0307) - (31,1651 - 31,1623)}{1,0647} \times 100\% \\
 &= 2,88\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{berat kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\% \\
 &= \frac{(0,0330) - (34,5710 - 34,5696)}{1,0704} \times 100\% \\
 &= 3,13\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{berat kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\% \\
 &= \frac{(0,0334) - (36,1599 - 36,1597)}{1,0654} \times 100\% \\
 &= 3,11\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + kertas saring konstan (g)	% kadar
I	33,4234	1,0406	33,4256	1,79
II	31,2354	1,0668	31,2426	2,36
III	36,6388	1,0540	36,6410	1,33
X ± SD				1,82 ± 0,51

$$\begin{aligned}
 1. \text{ Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\% \\
 &= \frac{(0,0206) - (33,4256 - 33,4234)}{1,0406} \times 100\% \\
 &= 1,79\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\% \\
 &= \frac{(0,0274) - (31,2426 - 31,2354)}{1,0668} \times 100\% \\
 &= 2,36\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar abu} &= \frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\% \\
 &= \frac{(0,0212) - (36,6410 - 36,6388)}{1,0540} \times 100\% \\
 &= 1,33\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + kertas saring konstan (g)	% kadar
I	31,1752	1,0452	31,1782	2,62
II	35,6133	1,0462	35,6168	2,62
III	36,1852	1,0524	36,1882	2,52
X ± SD				2,59 ± 0,06

- Kadar abu = $\frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\%$

$$= \frac{(0,0004) - (31,1782 - 31,1752)}{1,0452} \times 100\%$$

$$= 2,62\%$$
- Kadar abu = $\frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\%$

$$= \frac{(0,0009) - (35,6168 - 35,6133)}{1,0462} \times 100\%$$

$$= 2,62\%$$
- Kadar abu = $\frac{(\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus})}{\text{berat sampel}} \times 100\%$

$$= \frac{(0,0005) - (36,1882 - 36,1852)}{1,0524} \times 100\%$$

$$= 2,52\%$$

F. Hasil penentuan kadar abu yang larut air
Malang

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + kertas saring konstan (g)	% kadar
I	33,4754	1,0743	33,4902	2,21
II	32,3082	1,0160	32,3118	2,48
III	30,3246	1,0342	30,3286	2,26
$\bar{X} \pm SD$				$2,32 \pm 0,14$

1. Kadar abu =
$$\frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat sampel}} \times 100\%$$
$$= \frac{(0,0221) - (33,4902 - 33,4754)}{1,0743} \times 100\%$$
$$= 2,21\%$$
2. Kadar abu =
$$\frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat sampel}} \times 100\%$$
$$= \frac{0,0222 - (32,3118 - 32,3082)}{1,0160} \times 100\%$$
$$= 2,48\%$$
3. Kadar abu =
$$\frac{((\text{berat abu total}) - ((\text{berat krus} + \text{kertas saring}) - \text{berat krus}))}{\text{berat sampel}} \times 100\%$$
$$= \frac{(0,0224) - (30,3286 - 30,3246)}{1,0342} \times 100\%$$
$$= 2,26\%$$

Banyuwangi

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + kertas saring konstan (g)	% kadar
I	26,9512	1,0047	26,9667	2,12
II	25,9524	1,0164	25,9664	2,10
III	29,1673	1,0028	29,1781	2,59
X ± SD				2,27 ± 0,28

$$\begin{aligned}
 1. \text{ Kadar abu} &= \frac{(\text{Berat abu total}) - ((\text{Berat krus} + \text{kertas saring}) - \text{Berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0046) - (26,9667 - 26,9512)}{1,0047} \times 100\% \\
 &= 2,12\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar abu} &= \frac{(\text{Berat abu total}) - ((\text{Berat krus} + \text{kertas saring}) - \text{Berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{0,0034 - (25,9664 - 25,9524)}{1,0164} \times 100\% \\
 &= 2,10\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar abu} &= \frac{(\text{Berat abu total}) - ((\text{Berat krus} + \text{kertas saring}) - \text{Berat krus})}{\text{berat simplisia}} \times 100\% \\
 &= \frac{(0,0036) - (29,1781 - 29,1673)}{1,0028} \times 100\% \\
 &= 2,59\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat krus (g)	Berat ekstrak (g)	Berat krus + kertas saring konstan (g)	% kadar
I	31,1275	1,0444	31,1356	3,08
II	34,5689	1,0202	34,5815	3,27
III	32,3160	1,0210	32,3240	3,27
X ± SD				3,21 ± 0,11

- Kadar abu = $\frac{(\text{Berat abu total}) - ((\text{Berat krus} + \text{kertas saring}) - \text{Berat krus})}{\text{Berat sampel}} \times 100\%$

$$= \frac{(0,0402) - (31,1356 - 31,1275)}{1,0444} \times 100\%$$

$$= 3,08\%$$
- Kadar abu = $\frac{(\text{Berat abu total}) - ((\text{Berat krus} + \text{kertas saring}) - \text{Berat krus})}{\text{Berat sampel}} \times 100\%$

$$= \frac{0,0334 - (34,5815 - 34,5689)}{1,0202} \times 100\%$$

$$= 3,27\%$$
- Kadar abu = $\frac{(\text{Berat abu total}) - ((\text{Berat krus} + \text{kertas saring}) - \text{Berat krus})}{\text{Berat sampel}} \times 100\%$

$$= \frac{(0,0414) - (32,3240 - 32,3160)}{1,0210} \times 100\%$$

$$= 3,27\%$$

LAMPIRAN F

HASIL PEMERIKSAAN STANDARISASI SPESIFIK EKSTRAK ETANOL BUAH NAGA MERAH

A. Hasil pengamatan organoleptis

Pengamatan	Ekstrak etanol buah naga
Bentuk	Kental
Warna	Coklat Kemerahan
Bau	Aromatik

B. Hasil penetapan kadar sari larut air

Malang

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	22,1380	2,0285	22,4790	84,05
II	22,4692	2,0205	22,8112	84,03
III	36,4115	2,0141	36,7335	84,44
X ± SD				84,17 ± 0,23

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{elektrolit}) - \text{berat cawan})}{\text{berat elektrolit}} \times 100\% \\
 &= \frac{(22,4700 - 22,1180)}{0,4007} \times 100\% \\
 &= 84,05\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{elektrolit}) - \text{berat cawan})}{\text{berat elektrolit}} \times 100\% \\
 &= \frac{(22,8113 - 22,4683)}{0,4001} \times 100\% \\
 &= 84,03\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{elektrolit}) - \text{berat cawan})}{\text{berat elektrolit}} \times 100\% \\
 &= \frac{(36,7353 - 36,4113)}{0,4008} \times 100\% \\
 &= 84,44\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	21,2598	2,0231	21,5286	68,94
II	28,0351	2,0141	28,3170	69,95
III	23,9266	2,0256	24,2085	69,58
X ± SD				69,63 ± 0,59

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(21,5286 - 21,2598)}{0,4046} \times 100\% \\
 &= 68,94\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(28,3170 - 28,0351)}{0,4030} \times 100\% \\
 &= 69,95\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(24,2085 - 23,9266)}{0,4031} \times 100\% \\
 &= 69,58\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	38,8383	2,0207	39,1998	89,45
II	60,2838	2,0117	60,6451	89,81
III	48,2522	2,0323	48,6132	89,81
X ± SD				89,69 ± 0,21

- Kadar sari = $\frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\%$

$$= \frac{(39,1998 - 38,8383)}{0,4041} \times 100\%$$

$$= 89,45\%$$
- Kadar sari = $\frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\%$

$$= \frac{(60,6451 - 60,2838)}{0,4023} \times 100\%$$

$$= 89,81\%$$
- Kadar sari = $\frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\%$

$$= \frac{(48,6132 - 48,2522)}{0,4063} \times 100\%$$

$$= 89,81 \%$$

C. Hasil penetapan kadar sari larut etanol

Malang

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	22,1366	2,0357	22,5005	89,38
II	22,4690	2,0177	22,8330	90,20
III	23,6313	2,0322	23,9953	89,56
X ± SD				89,71 ± 0,43

$$\begin{aligned}
 1. \text{ Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(22,5005 - 22,1366)}{0,4071} \times 100\% \\
 &= 89,38\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(22,8330 - 22,4690)}{0,4033} \times 100\% \\
 &= 90,20\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(23,9953 - 23,6313)}{0,4064} \times 100\% \\
 &= 89,56\%
 \end{aligned}$$

Banyuwangi

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	36,4652	2,0194	36,7528	74,71

II	35,7861	2,0224	36,0858	74,69
III	24,6554	2,0257	24,9658	74,81
X ± SD			74,73 ± 0,06	

$$\begin{aligned}
 1. \quad \text{Kadar sari} &= \frac{((\text{berat sari} + \text{elektrolit}) - \text{berat sari})}{\text{berat elektrolit}} \times 100\% \\
 &= \frac{(36,7326 - 36,4632)}{0,4039} \times 100\% \\
 &= 74,71\%
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{Kadar sari} &= \frac{((\text{berat sari} + \text{elektrolit}) - \text{berat sari})}{\text{berat elektrolit}} \times 100\% \\
 &= \frac{(36,0858 - 35,7861)}{0,4045} \times 100\% \\
 &= 74,69\%
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{Kadar sari} &= \frac{((\text{berat sari} + \text{elektrolit}) - \text{berat sari})}{\text{berat elektrolit}} \times 100\% \\
 &= \frac{(24,9658 - 24,6554)}{0,4041} \times 100\% \\
 &= 74,81\%
 \end{aligned}$$

Pasuruan

Replikasi	Berat cawan (g)	Berat ekstrak (g)	Berat cawan + ekstrak konstan (g)	% kadar
I	39,1481	2,0373	39,4836	82,33
II	36,4012	2,0240	36,7360	82,41
III	23,9564	2,0363	24,3168	82,48
X ± SD				82,41 ± 0,07

$$\begin{aligned}
 1. \text{ Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(39,4836 - 39,1481)}{0,4073} \times 100\% \\
 &= 82,33\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(36,7360 - 36,4012)}{0,4048} \times 100\% \\
 &= 82,41\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar sari} &= \frac{((\text{berat cawan} + \text{ekstrak}) - \text{berat cawan})}{\text{berat ekstrak}} \times 100\% \\
 &= \frac{(24,3168 - 23,9564)}{0,4073} \times 100\% \\
 &= 82,48\%
 \end{aligned}$$

LAMPIRAN G
HASIL PENETAPAN KADAR FLAVONOID TOTAL
EKSTRAK ETANOL BUAH NAGA MERAH DENGAN
SPEKTROFOTOMETER UV-VIS SECARA KOLORIMETRI
(AlCl₃)

A. Kurva Baku Kuersetin

Konsentrasi (ppm)	Absorbansi	
3,012	0,299	
6,024	0,409	A = 0,1939
12,048	0,569	B = 0,0362
15,060	0,837	R = 0,9808
24,096	1,038	

B. Penetapan Kadar Ekstrak Etanol Buah Naga Merah (*Hylocereus polyrhizus*)

Daerah	Replikasi	Konsentrasi Ekstrak (ppm)	Absorbansi (λ 370 nm)	Konsentrasi Sebenarnya (ppm)	% Kadar
Malang	1	411,6	0,430	6,517	1,58
	2	436	0,483	7,980	1,81
	3	410,4	0,463	7,428	1,81
Banyuwangi	1	414,4	0,526	9,167	2,21
	2	428,8	0,565	10,243	2,39
	3	426,4	0,496	8,339	1,96
Pasuruan	1	431,2	0,654	12,699	2,94
	2	417,2	0,667	13,058	3,13
	3	433,6	0,670	13,141	3,03

Perhitungan % Kadar Flavonoid Malang

$$\begin{aligned} 1. \quad \% \text{ Kadar} &= \frac{C^* (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{6,317 \text{ ppm}}{411,6 \text{ ppm}} \times 100\% \\ &= 1,58\% \end{aligned}$$

$$\begin{aligned} 2. \quad \% \text{ Kadar} &= \frac{C^* (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{7,660 \text{ ppm}}{436 \text{ ppm}} \times 100\% \\ &= 1,81\% \end{aligned}$$

$$\begin{aligned} 3. \quad \% \text{ Kadar} &= \frac{C^* (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{7,426 \text{ ppm}}{410,4 \text{ ppm}} \times 100\% \\ &= 1,81\% \end{aligned}$$

Banyuwangi

$$\begin{aligned} 1. \quad \% \text{ Kadar} &= \frac{C^* (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{9,167 \text{ ppm}}{414,4 \text{ ppm}} \times 100\% \\ &= 2,21\% \end{aligned}$$

$$\begin{aligned} 2. \quad \% \text{ Kadar} &= \frac{C^* (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{10,243 \text{ ppm}}{428,6 \text{ ppm}} \times 100\% \\ &= 2,39\% \end{aligned}$$

$$\begin{aligned} 3. \quad \% \text{ Kadar} &= \frac{C^* (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{8,339 \text{ ppm}}{426,4 \text{ ppm}} \times 100\% \\ &= 1,96\% \end{aligned}$$

Pasuruan

$$\begin{aligned} 1. \quad \% \text{ Kadar} &= \frac{C' (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{12,69 \text{ ppm}}{431,2 \text{ ppm}} \times 100\% \\ &= 2,94\% \end{aligned}$$

$$\begin{aligned} 2. \quad \% \text{ Kadar} &= \frac{C' (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{13,03 \text{ ppm}}{417,2 \text{ ppm}} \times 100\% \\ &= 3,13 \% \end{aligned}$$

$$\begin{aligned} 3. \quad \% \text{ Kadar} &= \frac{C' (\text{Konsentrasi sebenarnya}) \text{ ppm}}{C (\text{Konsentrasi ekstrak}) \text{ ppm}} \times 100\% \\ &= \frac{13,14 \text{ ppm}}{433,4 \text{ ppm}} \times 100\% \\ &= 3,03 \% \end{aligned}$$