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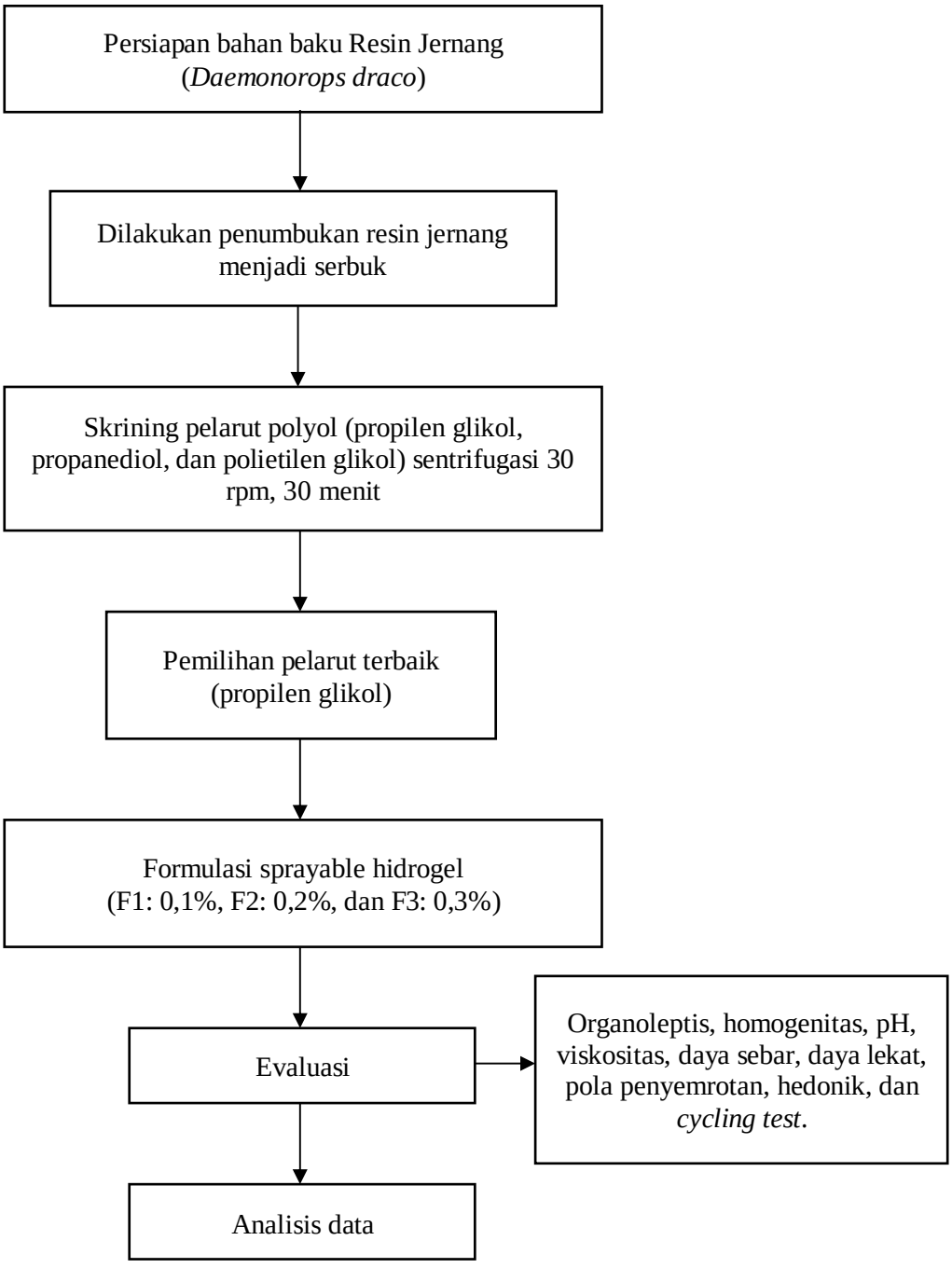
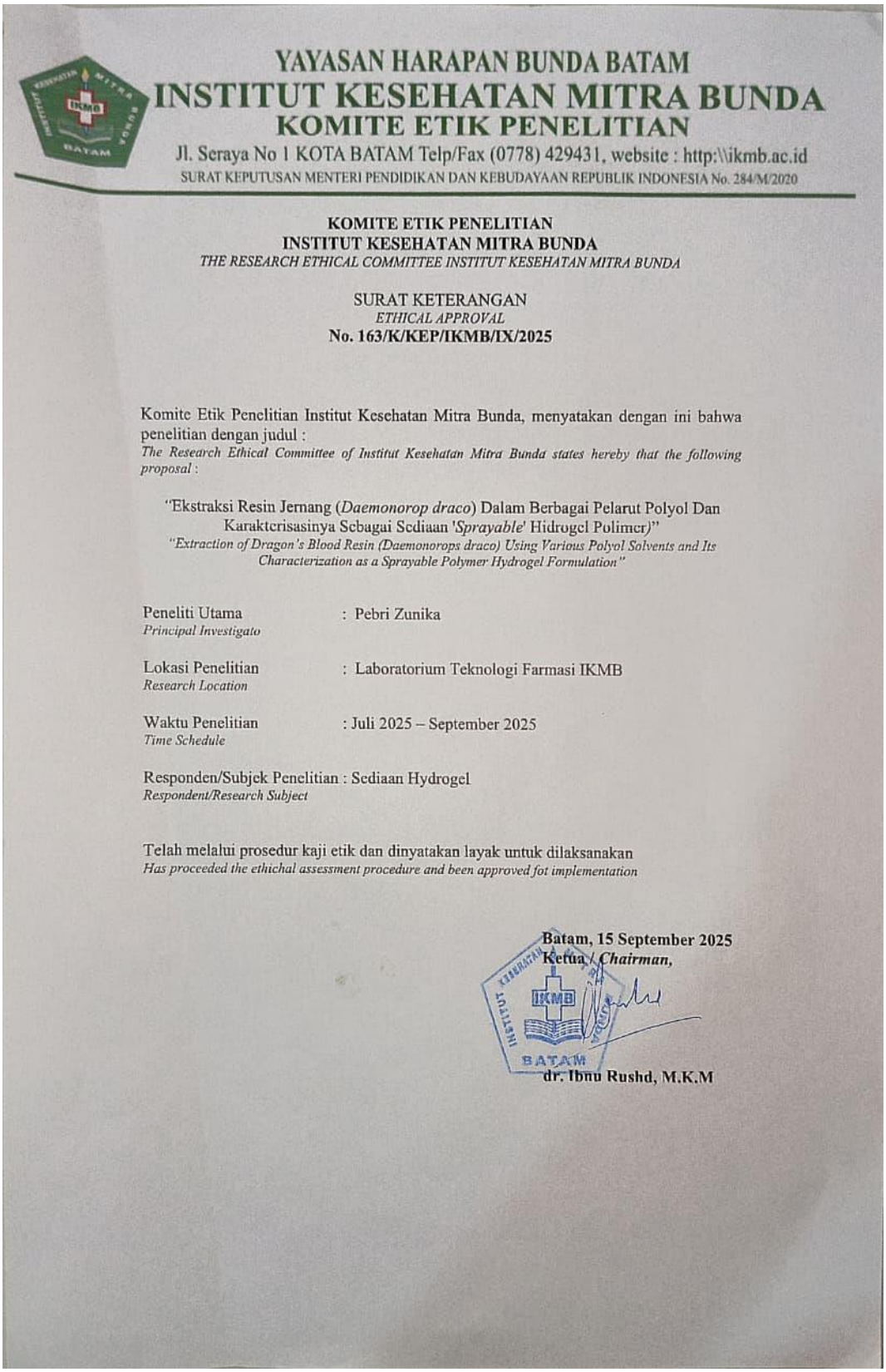
LAMPIRAN

Lampiran 1. Skema Kerja Penelitian



Lampiran 2. ***Ethical Clearance***



YAYASAN HARAPAN BUNDA BATAM
INSTITUT KESEHATAN MITRA BUNDA
KOMITE ETIK PENELITIAN
Jl. Seraya No 1 KOTA BATAM Telp/Fax (0778) 429431, website : http:\\ikmb.ac.id
SURAT KEPUTUSAN MENTERI PENDIDIKAN DAN KEBUDAYAAN REPUBLIK INDONESIA No. 284/M/2020

KOMITE ETIK PENELITIAN
INSTITUT KESEHATAN MITRA BUNDA
THE RESEARCH ETHICAL COMMITTEE INSTITUT KESEHATAN MITRA BUNDA

SURAT KETERANGAN
ETHICAL APPROVAL
No. 163/K/KEP/IKMB/IX/2025

Komite Etik Penelitian Institut Kesehatan Mitra Bunda, menyatakan dengan ini bahwa penelitian dengan judul :
The Research Ethical Committee of Institut Kesehatan Mitra Bunda states hereby that the following proposal :

"Ekstraksi Resin Jernang (*Daemonorop draco*) Dalam Berbagai Pelarut Polyol Dan Karakterisasinya Sebagai Sediaan '*Sprayable*' Hidrogel Polimer)"
"Extraction of Dragon's Blood Resin (Daemonorops draco) Using Various Polyol Solvents and Its Characterization as a Sprayable Polymer Hydrogel Formulation"

Peneliti Utama : Pebri Zunika
Principal Investigato

Lokasi Penelitian : Laboratorium Teknologi Farmasi IKMB
Research Location

Waktu Penelitian : Juli 2025 – September 2025
Time Schedule

Responden/Subjek Penelitian : Sediaan Hydrogel
Respondent/Research Subject

Telah melalui prosedur kaji etik dan dinyatakan layak untuk dilaksanakan
Has proceeded the ethichal assessment procedure and been approved fot implementation

Batam, 15 September 2025
Ketua / *Chairman,*

dr. Ibnu Rushd, M.K.M

Lampiran 3. Sertifikat Analisis Propil Paraben

Alpha Chemika
ISO 9001 Quality System certified Organization
House Of Unlimited Chemicals

ALPHA CHEMIKA, 102, 1st Floor, B Wing, Sangan Heights, RTO Road, Four Bunglow, Andheri (W), Mumbai 400 053. Maharashtra (India)
Tel: +91 22 65218147 • +91 22 26317055 • +91 22 26330745 • TeleFax : 91-22-26317055 • Mobile : +91 9820 385757 • +91 9769 472001
Skype ID : tanmay1977 • Email: info@alphachemika.co.in / sales@alphachemika.co.in

CERTIFICATE OF ANALYSIS

Name Of Item : PROPYL-P-HYDROXY BENZOATE (Propyl Paruben) **Formula :** $C_{10}H_{12}O_3$

M.W. : 180.21 **Batch No. :**

CAS NO. : 94-13-3 **Cat. No. :** AL3848 05000

Date Of Mfg. : **Date of Analysis :**

Type Of Test	Standard	Observed
Description	White crystalline powder	White crystalline powder
Assay	99.5 - 100.5%	99.60%
Impurities reacting acid	Passes test	Passes test
Lead (Pb)	<0.001%	0.0008%
Copper (Cu)	<0.0025%	<0.0025%
Zinc (Zn)	<0.0025%	0.002%
Arsenic (As)	<0.0003%	0.0002%
Loss on drying at 60°C/2hrs	<0.5%	0.4%
Sulphated ash	<0.05%	0.048%

Results : The above product complies with LR grade

TESTED BY : HITESH KUNJATHUR	ANALYSED BY : PRITI DURI	CHECKED BY : PRITI DURI

For ALPHA CHEMIKA

Auth. Signatory

Signed By : _____
(QC Head)

Lampiran 4. Sertifikat Analisis Metil Paraben

MCE MedChemExpress

Certificate of Analysis

Inhibitors • Screening Libraries • Proteins

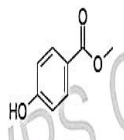
Methyl Paraben

Cat. No.:	HY-N0349
CAS No.:	99-76-3
Batch No.:	33250
Chemical Name:	Benzoic acid, 4-hydroxy-, methyl ester

PHYSICAL AND CHEMICAL PROPERTIES

Molecular Formula:	$C_8H_8O_3$		
Molecular Weight:	152.15		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month

Chemical Structure:



ANALYTICAL DATA

Appearance:	White to off-white (Solid)
^{1}H NMR Spectrum:	Consistent with structure
Purity (HPLC):	99.71%
Conclusion:	The product has been tested and complies with the given specifications.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA

Lampiran 5. Persiapan Resin Jernang (*Daemonorops draco*)

Ditimbang resin jernang

Ditimbang serbuk resin jernang

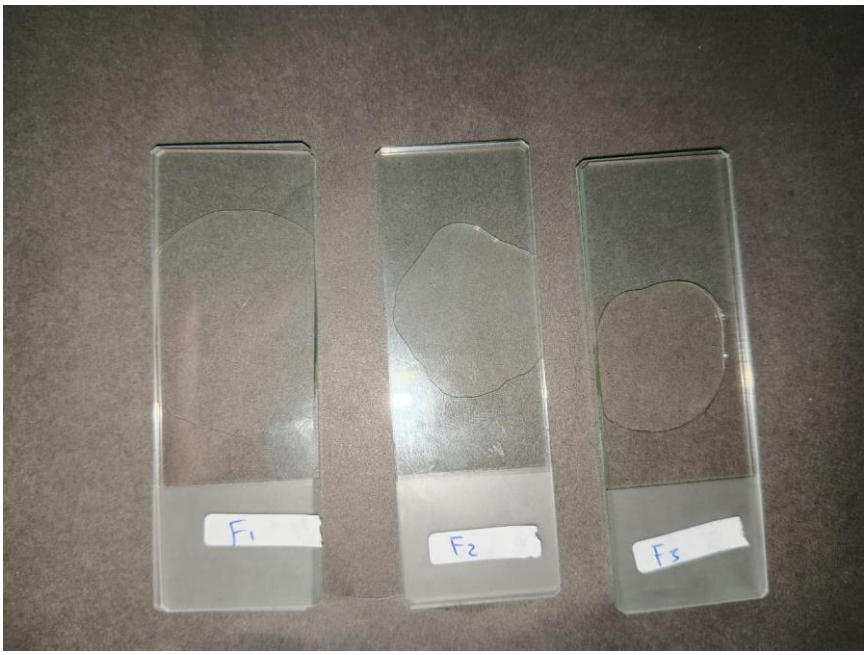
Lampiran 6. Skrining Pelarut Polyol

Sentrifugasi resin jernang

Lampiran 7. Pembuatan Sediaan Hidrogel

F1:0,1%, F2:0,2%, F3:0,3%

Lampiran 8. Pengamatan Uji Homogenitas



Lampiran 9. Pengamatan Uji pH

Lampiran 10. Pengamatan Daya lekat

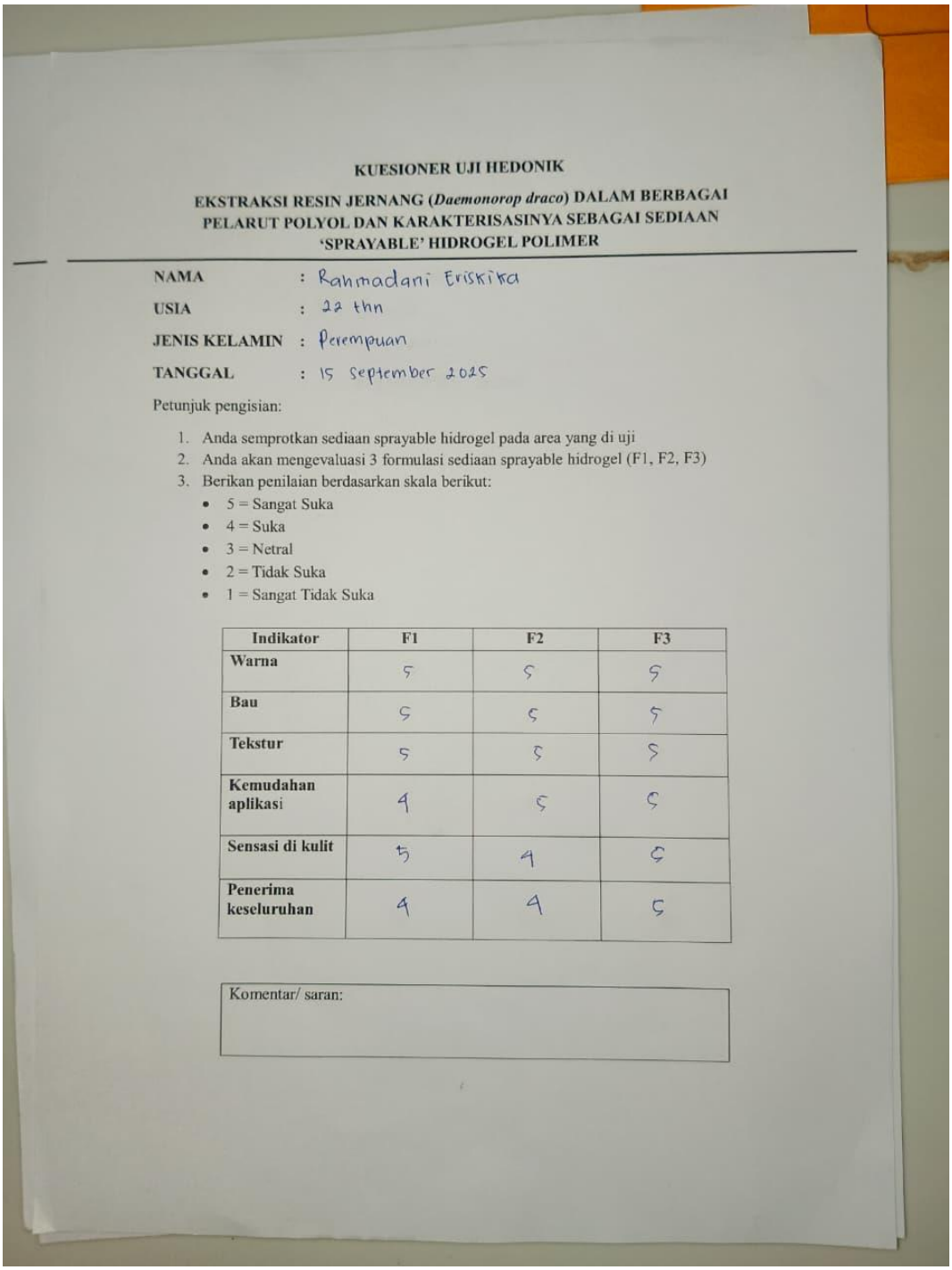
Lampiran 11. Pengamatan Daya Sebar

Lampiran 12. Pengamatan Uji Viskositas

Lampiran 13. Pengamatan Uji Pola Penyemprotan

Uji pola penyemprotan dan jarak sediaan

Lampiran 14. Pengamatan Uji Hedonik



KUESIONER UJI HEDONIK

EKSTRAKSI RESIN JERNANG (*Daemonorop draco*) DALAM BERBAGAI PELARUT POLYOL DAN KARAKTERISASINYA SEBAGAI SEDIAAN 'SPRAYABLE' HIDROGEL POLIMER

NAMA : Rahmadani Eriskika
USIA : 22 thn
JENIS KELAMIN : Perempuan
TANGGAL : 15 September 2025

Petunjuk pengisian:

1. Anda semprotkan sediaan sprayable hidrogel pada area yang di uji
2. Anda akan mengevaluasi 3 formulasi sediaan sprayable hidrogel (F1, F2, F3)
3. Berikan penilaian berdasarkan skala berikut:
   - 5 = Sangat Suka
   - 4 = Suka
   - 3 = Netral
   - 2 = Tidak Suka
   - 1 = Sangat Tidak Suka

Indikator	F1	F2	F3
Warna	5	5	5
Bau	5	5	5
Tekstur	5	5	5
Kemudahan aplikasi	4	5	5
Sensasi di kulit	5	4	5
Penerima keseluruhan	4	4	5

Komentar/ saran:

Lampiran 15. Uji Stabilitas (*Cycling test*)

Suhu 4°C

Suhu 40°C

Lampiran 16. Perhitungan Formulasi Sediaan *Sprayable* Hidrogel

1. Formula ekstrak 0,1%

- Ekstrak Resin Jernang = $\frac{0,1}{100} x\ 110 = 0,11\ g$
- Carbopol 940 (0,5%) = $\frac{0,5}{100} x\ 110 = 0,55\ g$
- Sodium PCA (2%) = $\frac{2}{100} x\ 110 = 2,2\ g$
- Metil Paraben (0,18%) = $\frac{0,18}{100} x\ 110 = 0,198\ g$
- Propil Paraben (0,02%) = $\frac{0,02}{100} x\ 110 = 0,022\ g$
- Aquades ad 100 mL = 100 (0,11+0,55+2,2+0,198+0,022)

  = 100-3,03
  = 96,92 mL

2. Formula Ekstrak 0,2%

- Ekstrak Resin Jernang = $\frac{0,2}{100} x\ 110 = 0,22\ g$
- Carbopol 940 (0,5%) = $\frac{0,5}{100} x\ 110 = 0,55\ g$
- Sodium PCA (2%) = $\frac{2}{100} x\ 110 = 2,2\ g$
- Metil Paraben (0,18%) = $\frac{0,18}{100} x\ 110 = 0,198\ g$
- Propil Paraben (0,02%) = $\frac{0,02}{100} x\ 110 = 0,022\ g$
- Aquades ad 100 mL = 100 (0,22+0,55+2,2+0,198+0,022)

  = 100-3,19
  =96,81 mL

3. Formula Ekstrak 0,3%

- Ekstrak Resin Jernang = $\frac{0,3}{100} x\ 110 = 0,33\ g$
- Carbopol 940 (0,5%) = $\frac{0,5}{100} x\ 110 = 0,55\ g$

- Sodium PCA (2%) $= \frac{2}{100} x\ 110 = 2{,}2\ g$
- Metil Paraben (0,18%) $= \frac{0{,}18}{100} x\ 110 = 0{,}198\ g$
- Propil Paraben (0,02%) $= \frac{0{,}02}{100} x\ 110 = 0{,}022\ g$
- Aquades ad 100 mL = 100 (0,33+0,55+2,2+0,198+0,022)

  = 100-3,3
  =96,7 mL

Lampiran 17. Hasil Uji Hedonik Spider Grafik