LAMPIRAN

Lampiran 1. Data Pendukung Laporan Penelitian

Tabel 1. Data Analisa *Tensile Strength* dan *Elongation at break*

Sampel (ml)	Et (MPa)	Esec (MPa)	σ_{Xi} (MPa)	σ_Y (MPa)	S_Y (%)	σ_M (MPa)	S_M (%)	$S_{M(corr)}$ (%)	σ_s (MPa)
1	319	58.5	1.31	2.17	0.42	16.10	8.10	0.42	0.532
3	252	887	-	-	-	16.50	13.00	1.7	14.8
5	696	-	2.15	-	-	14.80	9.00	0.89	16.1
10	119	251	16.2	3.70	1.4	2.17	4.10	1.4	3.30

Diperoleh diagram dari hasil analisa *tensile strength* dan *elongation at break* yaitu:

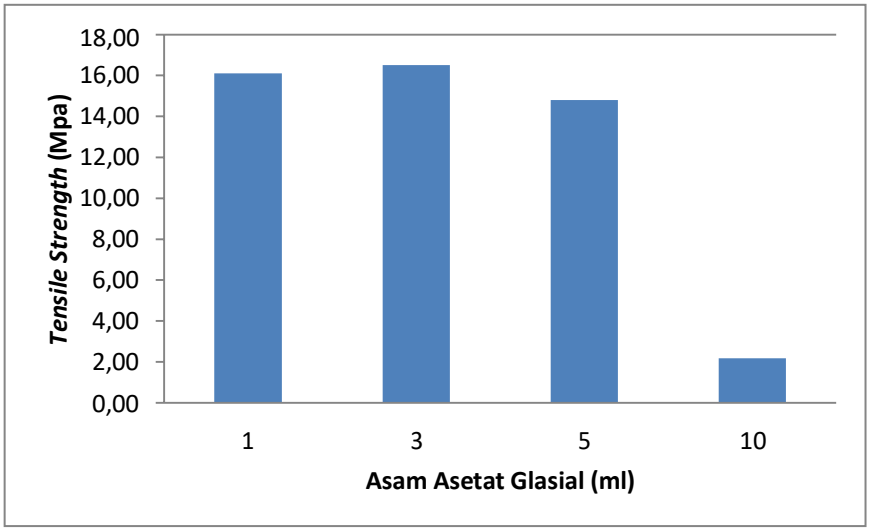


Diagram *Tensile Strength*

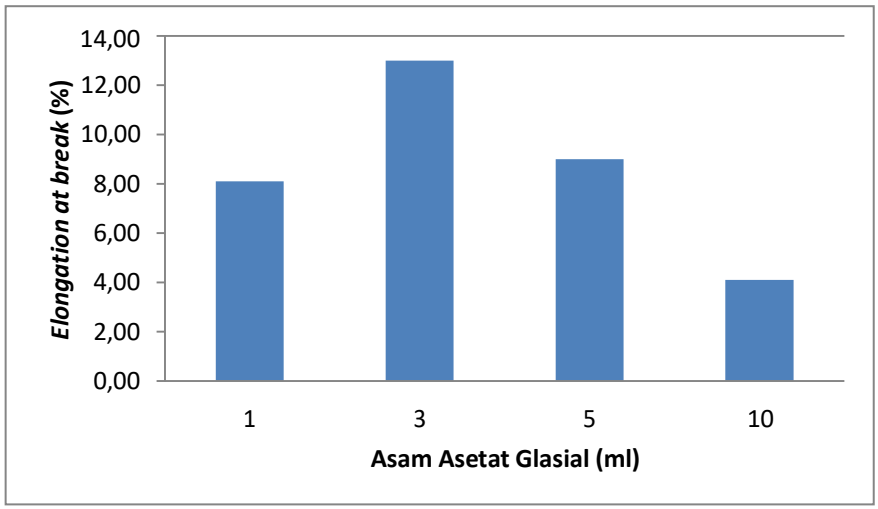
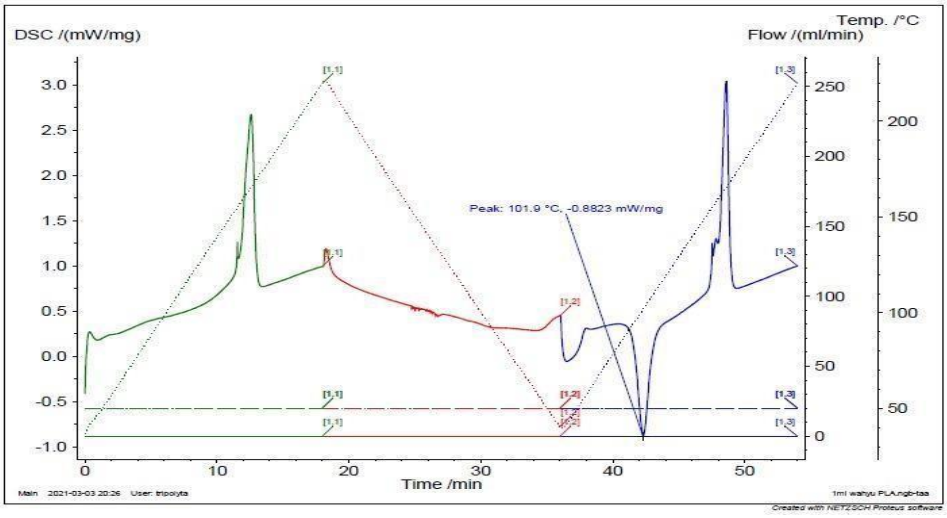


Diagram *Elongation at break*

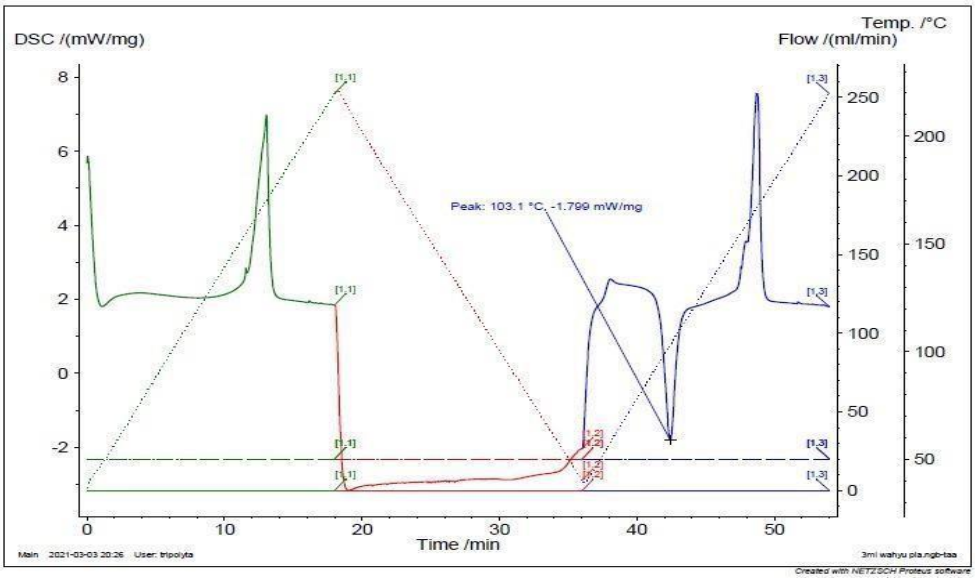
Tabel 2. Hasil analisa termal

Asam Asetat Glasial	Titik Leleh (ºC)
1 ml	101,9
3 ml	103,1
5 ml	93,9
10 ml	91,5

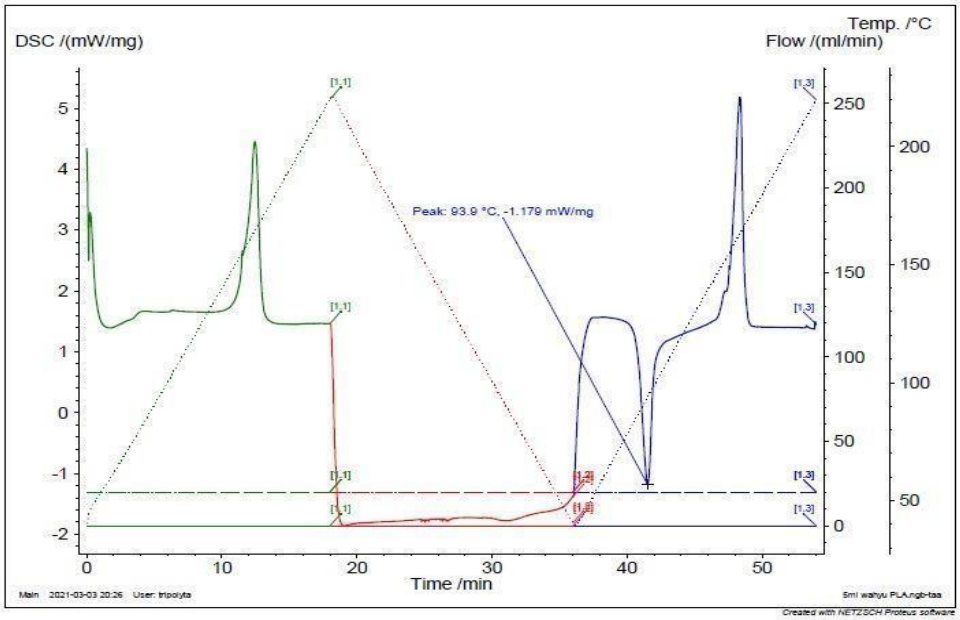
(a) Penambahan Asam asetat glasial 1 ml



(b) Penambahan Asam asetat glasial 3 ml



(c) Penambahan Asam asetat glasial 5 ml



Perhitungan Analisis Data Uji Biodegradabilitas

Sampel	W_0 (gram)	W_A (gram)	ΔW_A (gram)
Pati- gliserol-as.asetat 3 ml	0,1182	0,0590	0,0592
Pati- gliserol-as.asetat 5 ml	0,0642	0,0056	0,0586
Pati- gliserol-as.asetat 10 ml	0,0946	0,0207	0,0739

Rumus uji biodegradabilitas:

$$\%\, kehilangan\ berat = \frac{\Delta W_A}{W_0} \times 100\%$$

Pati- Gliserol- as. asetat 3ml

ΔW_A = 0,0592 gram ; W_0 = 0,1182 gram

$$\%\, kehilangan\ berat = \frac{0{,}0592}{0{,}1182} \times 100\% = 50\%$$

Degradabilitas = 59,2 mg/6 hari = 9,87 mg/hari

$$\text{Waktu terdegradasi} = \frac{100\%}{\%\ \text{kehilangan berat}} \times 6 \text{ hari}$$

$$= \frac{100\%}{50\%} \times 6 \text{ hari} = 12 \text{ hari}$$

Pati- Gliserol- as. asetat 5ml

ΔW_A = 0,0586 gram ; W_0 = 0,0642 gram

$$\%\, kehilangan\ berat = \frac{0{,}0586}{0{,}0642} \times 100\% = 91\%$$

Degradabilitas = 58,6 mg/6 hari = 9,76 mg/hari

$$\text{Waktu terdegradasi} = \frac{100\%}{\%\ \text{kehilangan berat}} \times 6 \text{ hari}$$

$$= \frac{100\%}{91\%} \times 6 \text{ hari} = 6{,}593 \text{ hari}$$

Pati- Gliserol- as. asetat 10ml

ΔW_A = 0,0739 gram ; W_0 = 0,0946 gram

$$\%\, kehilangan\ berat = \frac{0{,}0739}{0{,}0946} \times 100\% = 78\%$$

Degradabilitas = 73,9 mg/6 hari = 12,32 mg/hari

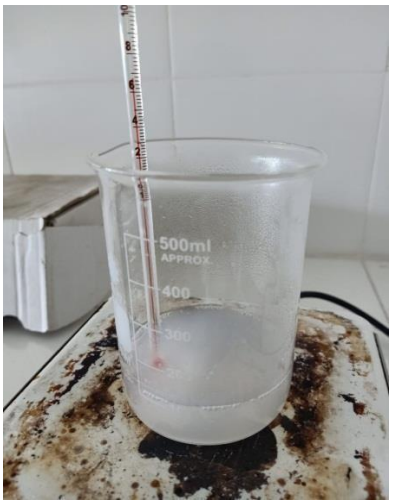
$$\text{Waktu terdegradasi} = \frac{100\%}{\%\ \text{kehilangan berat}} \times 6 \text{ hari}$$

$$= \frac{100\%}{78\%} \times 6 \text{ hari} = 7{,}692 \text{ hari}$$

Lampiran 2. Dokumentasi Penelitian

1. Proses pembuatan larutan pati terplastisasi glisero

(a) Larutan pati dengan aquadest

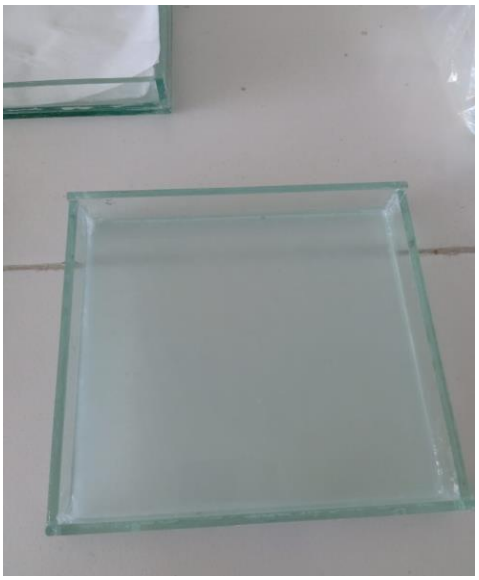


(b) Larutan pati Larutan pati yang telah tergelatinisasi

2. Proses pembuatan polimer *blend* PLA-Pati

(a) PLA yang sudah larut dalam klorofom

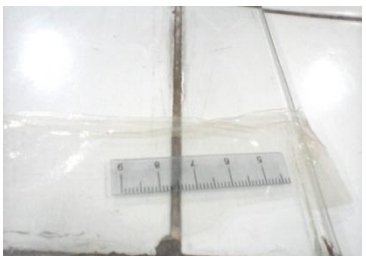
(b) Mencampurkan Pati terplastisasi gliserol dengan PLA



(c) *Blend film* dalam plate kaca

(d) *Blend film* yang sudah kering

3. Uji Biodegradable



Pemotongan plastik ukuran 5x1 cm

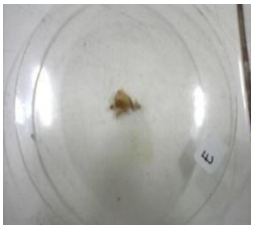
Penguburan sampel

Penanda tempat plastik dikubur

Keadaan plastik setelah penguburan

Gliserol-As. asetat 3 ml

Gliserol-As. Asetat 5ml



Gliserol-As. asetat 10 ml