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LAMPIRAN

Lampiran 1. Komponen kimia serat batang aren

Komponen kimia	Serat batang aren	Serat hasil deliginifikasi
Kadar air (%)	7.02 ± 0.005	5.82 ± 0.07
Ekstraktif (%)	3.55 ±	2.12 ± 2.01
α- selulosa (%)	45.79 ± 2.41	58.31 ± 2.50
Holosselulosa (%)	76.09 ± 4.24	77.64 ± 1.88
Hemiselulosa (%)	30.3	19.33
Rendemen pulp (%)	-	31.04 ± 8.24
Kadar abu (%)	5.18 ± 0.36	5.94 ± 2.77
Lignin	19.29	11.09

Lampiran 2. Hasil Py-GCMS

a. Unit *Syringyl*

Sampel	Produk pyrolisis	Luas Area (%)	Total
Lignin batang aren	Furan, 2,5-dimethyl-	0.48	17.18
	(S)-5-Hydroxymethyl-2[5H]-furanone	1.13	
	Creosol	2.11	
	Phenol, 2,6-dimethoxy-	6.98	
	Phenol, 3,4-dimethoxy-	0.79	
	3,5-Dimethoxy-4-hydroxytoluene	4.29	
	Phenol, 2,6-dimethoxy-4-(2-propenyl)-	0.81	
	(E)-2,6-Dimethoxy-4-(prop-1-en-1-yl)pheno	0.59	
Lignin komersial	Creosol	9.81	17.29
	Phenol, 2,5-dimethyl-	0.27	
	2-Methoxy-5-methylphenol	1.1	
	Ethanone, 1-(2-hydroxy-4-methoxyphenyl)-	0.1	
	Phenol, 2-methoxy-4-propyl-	1.72	
	Benzene, 4-ethenyl-1,2-dimethoxy-	0.29	
	Vanillin	1.77	
	Apocynin	1.65	
	Benzeneacetic acid, 2,5-dimethoxy-	0.29	
	1,1'-Biphenyl, 6-hydroxy-2',3',4'-trimethoxy-	0.29	

b. Unit Guaiacyl

Sampel	Produk pyrolisis	Luas Area (%)	Total
Lignin batang aren	1,2-Cyclopentanedione, 3-methyl-	0.59	6.85
	Phenol, 2-methoxy-	2.24	
	1,2-Benzenediol, 3-methoxy-	2.98	
	Phenol, 4-ethyl-2-methoxy-	0.57	
	Phenol, 4,4'-methylenebis[2,6-dimethoxy-	0.47	
Lignin komersial	Phenol, 2-methoxy-	1.96	30.63
	Phenol, 4-ethyl-2-methoxy-	0.47	
	trans-Isoeugenol	6.42	
	Benzenepropanol, 4-hydroxy-3-methoxy-	2.58	
	Phenol, 4-ethyl-2-methoxy-	0.38	
	(E)-3,3'-Dimethoxy-4,4'-dihydroxystilbene	2.82	

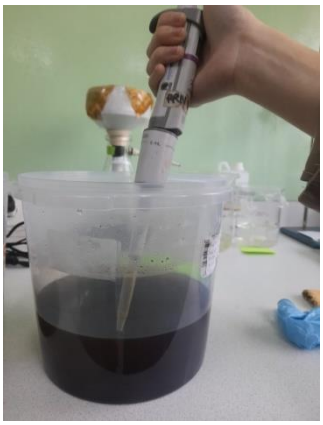
c. Unit p-comaryl

Sampel	Produk pyrolisis	Luas Area (%)	Total
Lignin batang aren	Glycolaldehyde dimer	1.76	5.78
	Phenol	3.11	
	Ethanone, 1-(2,3,4-trihydroxyphenyl)-	0.91	
Lignin komersial	-	-	-

Lampiran 3. Dokumentasi Proses Ekstraksi dan Isolasi

Pulping alkali

Isolasi

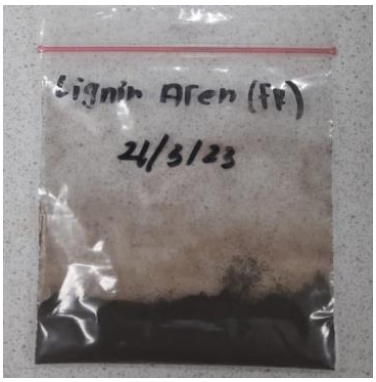


Dekantasi & Pencucian

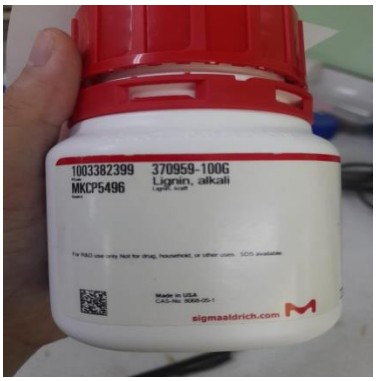
Pemisahan filtrat dan residu

Pengeringan 45 ^{o}C

Menghaluskan



Lignin hasil isolasi



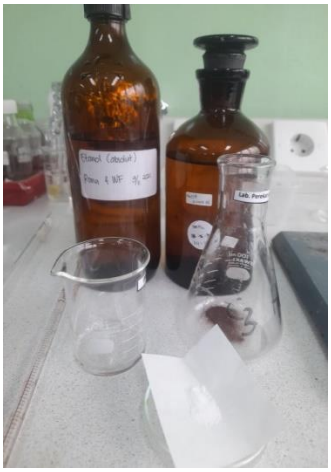
Lignin komersial

Lampiran 4. Pengujian Karakteristik Lignin

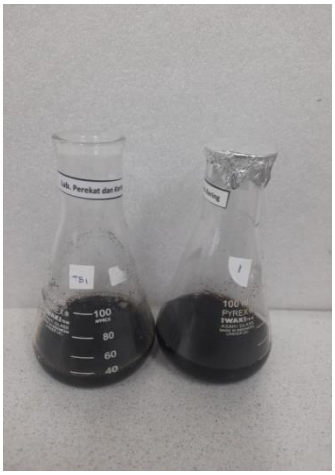
Analisis kadar air

Analisis kadar abu

Analisis kemurnian



Analisis berat ekuivalen



Analisis kadar metoksil

Lampiran 5. Curriculum Vitae

CURRICULUM VITAE

A. Data Diri

1. Nama Lengkap : Fardhatillah
2. Jenis Kelamin : Perempuan
3. NIM : M021201002
4. Tempat dan Tanggal lahir : Palopo, 28 Agustus 2002
5. Alamat E-mail : fardhatillahftih@gmail.com
6. No. Telpon/HP : 082188969762
7. Nama Facebook/Instagram : @Fardhatillah_

B. Riwayat Pendidikan

1. Tamatan Sekolah : - SD Negeri 50 Bulu Datu
   - SMP Negeri 8 Palopo
   - SMA Negeri 2 Palopo
2. Judul Tugas akhir : Ekstraksi Lignin dari Lindi Hitam Delignifikasi Alkali Serat Batang Aren dan Karakteristik Sifat Fisik, Kimia dan Termal
3. Nama Pembimbing : 1. Syahidah, S.Hut., M.Si., Ph.D.
   2. Dr. Andi Sri Rahayu Diza Lestarari Z, S.Hut., M.Si.
   3. Prof. Dr. Widya Fatriasari.
4. Laboratorium/Minat : Laboratorium Pengolahan dan Pemanfaatan Hasil Hutan/Kimia kayu.

1. Kegiatan Kemahasiswaan yang pernah diikuti:

Jenis Kegiatan	Status dalam Kegiatan	Waktu
1. Balance	Peserta	2020
2. SAINS	Peserta	2020
3. Rimba	Peserta	2021
4. Temu Pisah 2021	Peserta	2021
5. Program Mahasiswa Wirausaha	Anggota Tim	2022
6. Program Kreatifitas Mahasiswa	Anggota Tim	2022
7. Praktek Kerja Lapangan Gel. 04	Peserta	2023
8. Magang Mandiri	Anggota Tim	2023

2. Penghargaan yang pernah diterima:

Jenis Kegiatan	Status dalam Kegiatan	Waktu
1. Lomba KTI Universitas Halu Oleo	Peserta	2024