

DAFTAR ISI

| | |
|--|-------------|
| HALAMAN JUDUL | 1 |
| LEMBAR PENGESAHAN SKRIPSI | ii |
| HALAMAN PERNYATAAN ORISINALITAS | iv |
| ABSTRAK | v |
| ABSTRACT | vi |
| KATA PENGANTAR | vii |
| DAFTAR ISI | viii |
| DAFTAR GAMBAR | xi |
| DAFTAR TABEL | xii |
| BAB I PENDAHULUAN | 1 |
| 1.1 Latar Belakang | 1 |
| 1.2 Rumusan Masalah | 6 |
| 1.3 Tujuan..... | 7 |
| 1.4 Ruang Lingkup..... | 7 |
| 1.5 Manfaat Penelitian..... | 7 |
| BAB 2 TINJAUAN PUSTAKA | 9 |
| 2.1 Bioetanol | 9 |
| 2.2 Tongkol Jagung | 12 |
| 2.3 Lignoselulosa | 15 |
| 2.3.1 Selulosa..... | 15 |
| 2.3.2 Hemiselulosa | 16 |
| 2.3.3 Lignin | 16 |
| 2.4 Proses Produksi Bioetanol..... | 17 |
| 2.5 <i>Pretreatment</i> | 18 |
| 2.5.1 <i>Pretreatment</i> Fisik | 19 |
| 2.5.2 <i>Pretreatment</i> Kimia | 20 |
| 2.5.3 <i>Pretreatment</i> Biologis | 21 |
| 2.6 Hidrolisis | 22 |
| 2.7 Mikroorganisme | 23 |
| 2.8 Fermentasi | 25 |

| | |
|---|-----------|
| 2.9 Distilasi | 25 |
| 2.10 Syarat Mutu Bioetanol | 28 |
| 2.10.1 Kadar Metanol | 29 |
| 2.10.2 Kadar Air | 29 |
| 2.10.3 Kadar Denaturan..... | 29 |
| 2.10.4 Kadar Tembaga (Cu) | 29 |
| 2.10.5 Kadar CH ₃ COOH | 30 |
| 2.10.6 Tampak | 30 |
| 2.10.7 Kadar Ion Klorida (Cl) | 30 |
| 2.10.8 Kandungan Belerang (S) | 30 |
| 2.10.9 Kadar Getah (Gum) | 31 |
| 2.11 Analisis Delignifikasi..... | 31 |
| 2.12 Penelitian Terdahulu | 31 |
| BAB 3 METODOLOGI PENELITIAN..... | 66 |
| 3.1 Diagram Alir Penelitian | 66 |
| 3.2 Penilaian Jurnal..... | 67 |
| 3.3 Variabel Penelitian Review Jurnal..... | 67 |
| 3.4 Metodologi Percobaan Awal di Laboratorium | 73 |
| 3.4.1 Preparasi Sampel Tongkol Jagung | 73 |
| 3.4.2 Metode Pretreatment | 74 |
| 3.4.3 Metode Uji Cheson..... | 75 |
| 3.4.4 Metode Hidrolisis | 77 |
| 3.4.5 Uji Kadar Glukosa..... | 78 |
| BAB 4 HASIL DAN PEMBAHASAN..... | 80 |
| 4.1 Hasil Review | 80 |
| 4.1.1 Komposisi Tongkol Jagung..... | 80 |
| 4.1.2 <i>Pretreatment</i> | 81 |
| 4.1.3 Hidrolisis | 89 |
| 4.1.4 Fermentasi | 95 |
| 4.1.5 Distilasi..... | 100 |
| 4.2 Hasil Percobaan | 102 |
| 4.2.1 <i>Pretreatment</i> | 102 |

| | |
|--|------------|
| 4.2.2 Hidrolisis | 103 |
| BAB 5 KESIMPULAN DAN SARAN | 106 |
| 5.1 Kesimpulan | 106 |
| 5.2 Saran | 107 |
| DAFTAR PUSTAKA | 108 |
| LAMPIRAN..... | 114 |
| LAMPIRAN A CONTOH PERHITUNGAN | 114 |
| LAMPIRAN B LOGBOOK | 124 |

