BAB V
KESIMPULAN DAN SARAN

V.1. Kesimpulan

Dari hasil penelitian dan pembahasan dapat ditarik kesimpulan sebagai berikut:

1. Penggunaan CEX dalam delignifikasi dapat meningkatkan kadar selulosa dalam pulp tongkol jagung sebesar 23,88%, menurunkan kadar hemiselulosa dan lignin berturut-turut sebesar 61,7% dan 23,88% dari karakteristik tongkol jagung (*raw material*).
2. Hasil uji verifikasi dengan bantuan metode RSM dalam proses delignifikasi didapatkan kondisi optimum pada konsentrasi CEX sebesar 2,5% dalam 300 mL campuran buffer asetat dengan waktu reaksi 29 jam dapat menghasilkan kadar selulosa tertinggi sebesar 82,3%, kadar hemiselulosa dan lignin terendah berturut-turut sebesar 8,52% dan 7,38% dimana dengan *range error* 0,03 – 0,04.
3. Hasil analisa metode aerasi yang didapatkan sebagai kelanjutan dari metode delignifikasi dari kondisi optimum RSM dapat meningkatkan kadar selulosa menjadi 95,87%, serta menurunkan kadar hemiselulosa dan lignin berturut-turut hingga menjadi 6,41% dan 6,14% pada tongkol jagung sehingga efisiensi peningkatan kadar selulosa sebesar 16,49%, efisiensi penurunan kadar hemiselulosa dan lignin berturut-turut sebesar 24,73% dan 16,84% pada tongkol jagung dari hasil delignifikasi enzimatik CEX kondisi optimum RSM.

V.2. Saran

Sebaiknya dilakukan optimasi pada metode aerasi agar dapat mengefisienkan energi yang digunakan. Dapat dilakukan penambahan

suhu pemanasan dan waktu aerasi dipersingkat agar efisiensi energi semakin lebih baik. Untuk mengembangkan metode ini ke skala yang lebih besar disarankan untuk menggunakan hasil optimasi dengan ANOVA, yaitu konsentrasi enzim sebesar 2,5% dalam 300 mL campuran buffer asetat selama 29 jam. Hal tersebut karena dosis konsentrasi dan waktu reaksi telah diperhitungkan sedemikian rupa sehingga mendapatkan hasil delignifikasi yang maksimal dengan kadar selulosa tertinggi, serta kadar hemiselulosa dan lignin terendah.

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