

BAB 5

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Dari penelitian ini, dapat disimpulkan bahwa:

1. Semakin banyak pelarut yang digunakan (rasio F:S 1:6; 1:10; dan 1:14 g/L) dalam metode konvensional, semakin besar ekstrak yang didapat dan semakin kuat aktivitas antioksidannya.
2. Polaritas pelarut yang mendekati target ekstraksi (air, etanol 50 %, dan etanol 96 %) dalam metode konvensional, semakin besar ekstrak yang didapat dan semakin kuat aktivitas antioksidannya.
3. *Yield* terbesar yang didapat dengan metode konvensional menggunakan pelarut etanol 96 % dan perbandingan F:S sebesar 1:14 pada penelitian ini sebesar 47,254 %.
4. Aktivitas antioksidan terkuat dengan metode metode konvensional menggunakan pelarut etanol 96 % dan perbandingan F:S sebesar 1:14 memiliki IC_{50} sebesar 64,5227 ppm.
5. Semakin besar tekanan operasi pada ekstraksi superkritik CO_2 , *yield* ekstrak daun kelor yang dihasilkan semakin besar.
6. Tekanan operasi yang terlalu tinggi (30 MPa) dapat menurunkan aktivitas antioksidan ekstrak daun kelor.
7. Semakin besar laju alir CO_2 , *yield* ekstrak dan aktivitas antioksidan akan meningkat.
8. Laju alir CO_2 yang terlalu cepat (14 mL/ menit) dapat menurunkan *yield* dan aktivitas antioksidan.
9. *Yield* terbesar yang didapat dengan metode superkritik CO_2 pada penelitian ini sebesar 4,606 % dengan tekanan 30 MPa dan laju alir CO_2 12 mL/menit.
10. Aktivitas antioksidan terkuat dengan metode superkritik CO_2 pada penelitian ini sebesar 65,7263 ppm diperoleh pada tekanan 20 MPa dan laju alir CO_2 12 mL/menit.
11. Kondisi optimal untuk menghasilkan antioksidan terkuat pada penelitian ini adalah tekanan operasi sebesar 20 MPa dan laju alir CO_2 12 mL/menit.

5.2 Saran

Saran yang dapat diberikan untuk penelitian selanjutnya adalah:

1. Perlu dilakukan variasi laju alir CO₂ dan tekanan dengan rentang yang lebih besar agar dapat melihat pengaruh yang signifikan.
2. Perlu dilakukan ekstraksi superkritik CO₂ kontinu dengan adanya pengadukan dan waktu ekstraksi yang lebih lama.

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