

## **BAB V**

### **KESIMPULAN DAN SARAN**

#### **V.1 Kesimpulan**

Berdasarkan penelitian yang dilakukan, Ca-BDC yang disintesis memiliki bentuk kristal ortorombik dengan ukuran kristal dari 79 nm hingga 5,5  $\mu\text{m}$  dan luas permukaan area 12,1452  $\text{m}^2/\text{g}$ . Untuk proses adsorpsi kurkumin, didapatkan kondisi optimal dengan menggunakan konsentrasi awal 1800 ppm, pH 3, waktu 24 jam, dan suhu 30°C dimana kondisi ini membuat adsorpsi dari kurkumin mencapai 0,36 g/g. Dengan menggunakan media PBS degradasi dari material Ca-BDC diketahui tersisa hingga  $\pm 50\%$  selama 8 jam. Berdasarkan hasil studi kinetika pelepasan, pelepasan kurkumin dari Ca-BDC mengikuti model *pseudo first order* dengan persentase pelepasan kumulatif dari kurkumin untuk pH 2,2, 5,5 dan 6,8 berturut-turut dapat mencapai 66%, 60%, dan 54%. Dari hasil penelitian ini, diketahui bahwa pemberian sinar UV selama 3 kali penyinaran selama 30 menit dapat meningkatkan persentase pelepasan kumulatif dari kurkumin dimana hal ini disebabkan karena TEA yang terdegradasi. Namun pemberian sinar dalam jumlah yang lebih banyak justru akan mengurangi persentase kumulatif dari kurkumin.

#### **V.2 Saran**

Jika ada penelitian yang serupa akan dilakukan, maka disarankan untuk melakukan penelitian lebih lanjut mengenai pengaruh pemberian sinar UV terhadap pelepasan kurkumin dari Ca-BDC agar didapatkan hasil yang optimal untuk persentase pelepasan kurkumin sehingga dapat dikembangkan lebih jauh untuk aplikasi di bidang medis.

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