BAB V
KESIMPULAN DAN SARAN

5.1 Kesimpulan

Berdasarkan penelitian yang dilakukan, kesimpulan yang diperoleh adalah :

1. Pada penelitian ini, nilai DS terbesar didapatkan pada reaksi transesterifikasi dengan rasio katalis 0,3 mol/molAGU dan temperatur reaksi 120^{o}C.
2. Pati tapioka bersifat semi-kristalin sedangkan pati ester bersifat lebih amorf karena sudah kehilangan kristalinitasnya.
3. Pada penelitian ini, pati *crosslinking* mengalami reaksi *retro-Diels-Alder* pada temperatur 130^{o}C dan reaksi *Diels-Alder* terjadi pada temperatur 60^{o}C serta pati *crosslinking* mengalami *permanently crosslinking* pada 150^{o}C dan 170^{o}C.
4. Pada penelitian ini, waktu reaksi *crosslinking* yang semakin lama menghasilkan ikatan *crosslinking* yang semakin banyak antar polimer pati.
5. Pati *crosslinking* memiliki sifat kristalin, namun sifat kristalinitasnya berkurang seiring meningkatnya temperatur *annealing*.
6. Pati *crosslinking* memiliki sifat stabilitas termal yang lebih baik dibandingkan dengan pati ester.

5.2 Saran

Berdasarkan penelitian yang dilakukan, beberapa saran yang dapat dilakukan untuk penelitian kedepannya adalah :

1. Perlu dilakukan penelitian lebih lanjut mengenai reaksi samping proses transesterifikasi dan pengaruh antara interaksi temperatur reaksi dan rasio katalis terhadap nilai DS yang diperoleh.
2. Perlu dilakukan pencetakan *film* yang dapat dihancurkan dan dicetak ulang untuk mengetahui sifat *thermoreversibility* dari pati *crosslinking* yang diperoleh.
3. Perlu dilakukan uji mekanik untuk mengetahui sifat mekanik dari pati *crosslinking* sebagai bahan baku pembuatan plastik.

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