

INTISARI

Selulosa bakteri memiliki karakteristik yang berbeda dengan selulosa tumbuhan sehingga memiliki banyak kelebihan kegunaan yang bermanfaat. Bakteri penghasil selulosa butuh medium untuk tumbuh dan menghasilkan selulosa. Tetes tebu memiliki nutrisi sebagai sumber karbon dan mudah diperoleh sehingga sesuai untuk bahan baku medium produksi selulosa bagi *Gluconacetobacter xylinus* BTCC B796. Namun, tetes tebu tersebut masih mengandung kadar gula yang tinggi dan bentuknya yang pekat belum bisa digunakan sebagai medium produksi secara langsung. Untuk itu, diperlukan penambahan cairan sebagai pengencer.

Penelitian ini dilakukan dengan mengatur kadar gula medium melalui penambahan cairan berupa aqua dan air kelapa, serta penambahan ammonium sulfat dan dinatrium hidroksi fosfat sebagai sumber nutrisi untuk mengatur C/N ratio dan C/P ratio. Data hasil percobaan penelitian ini meliputi berat selulosa basah, berat selulosa kering, ketebalan selulosa, WHC, volume sisa medium dan pH akhir medium. Berat dan tebal selulosa serta sisa medium fermentasi digunakan untuk menentukan perlakuan terbaik dalam percobaan.

Produksi selulosa dengan kadar gula 6% dan penambahan air kelapa ke dalam larutan pengencer sebesar 50% dengan pengaturan C/N ratio 30 tanpa penambahan sumber fosfat menghasilkan selulosa dengan berat basah, berat kering, dan sisa medium berturut turut 71,70 g/75 ml medium; 0,84 g/75 ml medium; dan 5,33 ml/75 ml medium. Perlakuan tersebut menghasilkan C/P ratio sebesar 81,24

Kata Kunci : *Gluconacetobacter xylinus* BTCC B796, tetes tebu, air kelapa, ammonium sulfat, dinatrium hidroksi fosfat

ABSTRACT

Bacterial cellulose has different characteristics from plant cellulose so it has many advantages in useful. Cellulose-producing bacteria need medium to grow and produce cellulose. Mollases have nutrients as a carbon source and are easily obtained so that they are suitable for the raw material for cellulose production by *Gluconacetobacter xylinus* BTCC B796. However, mollases still contains high sugar and its concentrated form cannot be used as a production medium directly. For this reason, additional liquid is needed as a thinner.

This research was conducted by adjusting the sugar content of the medium through the addition of liquid in the form of aqua and coconut water, as well as the addition of ammonium sulfate and disodium hydroxy phosphate as a source of nutrients to regulate C / N ratio and C / P ratio. Data from the experimental results include wet cellulose weight, cellulose dry weight, cellulose thickness, WHC, residual volume of medium and final pH of the medium. The weight and thickness of cellulose and the rest of the fermented medium are used to determine the best treatment in the experiment.

Production of cellulose with 6% sugar content and adding coconut water to a diluent solution of 50% by setting C / N ratio 30 without the addition of a phosphate source produces cellulose with wet weight, dry weight, and residual medium respectively 71.70 g / 75 ml medium; 0.84 g / 75 ml medium; and 5.33 ml / 75 ml medium. The treatment resulted in a C / P ratio of 81.24

Keyword : *Gluconacetobacter xylinus* BTCC B796, mollases, coconut water, ammonium sufat, disodium hydroxy phosphate.