

## ABSTRAK

Kulit buah *Nypa fruticans* memiliki kandungan selulosa tinggi. Kulit buah tersebut dapat mengalami dekomposisi dengan bantuan kapang. Kapang tersebut melakukan proses dekomposisi dengan cara menghasilkan enzim selulase. Enzim ini berpotensi dikembangkan untuk kebutuhan industri. Penelitian ini bertujuan untuk mendapatkan isolat kapang selulolitik yang berasal dari kulit buah *N. fruticans* yang terdekomposisi. Metode penelitian yang dilakukan adalah metode eksploratif. Tahapan penelitian meliputi pengambilan sampel dan isolasi, pengamatan karakteristik morfologi koloni dan individu serta pengujian aktivitas selulolitik kapang. Kulit buah *N. fruticans* terdekomposisi diambil secara *Purposive Random Sampling* di ekosistem Mangrove Desa Tritih Kulon, Cilacap. Isolasi kapang dilakukan menggunakan metode *streak plate*. Identifikasi kapang dilakukan berdasarkan karakteristik morfologi koloni dan individu kapang. Pengujian aktivitas selulolitik kapang dilakukan pada media agar dengan perlakuan penambahan CMC (Carboxyl Methyl Cellulose) pada konsentrasi berbeda (kontrol, 0,5%, 1% dan 1,5%), pengukuran zona bening dan penghitungan indeks aktivitas enzim. 5 isolat kapang dari genus *Aspergillus* dan *Mucor* yang ditemukan seluruhnya berpotensi mendegradasi selulosa. Isolat kapang yang memiliki potensi pendegradasi selulosa tertinggi adalah isolat A (*Aspergillus oryzae*). Isolat lain memiliki aktivitas selulolitik yang rendah, yaitu isolat B dan isolat E (*Aspergillus niger* dan *Aspergillus fumigatus*), isolat D (*Aspergillus clavatus*) dan terendah isolat C (*Mucor hiemalis*).

**Kata kunci :** kapang, *Nypa fruticans*, dekomposisi, selulosa.

## ABSTRACT

The rind of *Nypa fruticans* fruit contains high amount of cellulose. The rind of the fruit can be decomposed with the help of fungi. The fungi perform the decomposition process by producing the cellulase enzyme. This enzyme has the potential to be developed for industrial needs. The aim of this study was to obtain cellulolytic fungi isolates from the decomposed rind of *N. fruticans* fruit. The research method used is the exploratory method. The research stages included sampling and isolation, observing the morphological characteristics of colonies and individuals and testing the cellulolytic activity of fungi. The decomposed rind of *N. fruticans* was taken by purposive random sampling in the Mangrove ecosystem of Tritih Kulon Village, Cilacap. Fungi isolation was carried out using the streak plate method. Identification of fungi was carried out based on the morphological characteristics of the colonies and individual fungi. Cellulolytic activity testing of fungi was carried out on agar media with the addition of CMC (Carboxyl Methyl Cellulose) at different concentrations (control, 0.5%, 1% and 1.5%), measuring the clear zone and calculating the enzyme activity index. All 5 isolates of fungi from the *Aspergillus* and *Mucor* genera were found to have the potential to degrade cellulose. The fungi isolates that had the highest cellulose degrading potential were isolate A (*Aspergillus oryzae*). Other isolates showed lower cellulolytic activity, namely isolate B and isolate E (*Aspergillus niger* and *Aspergillus fumigatus*), isolate D (*Aspergillus clavatus*) and the lowest was isolate C (*Mucor hiemalis*).

**Key words :** *fungi, Nypa fruticans, decomposition, cellulose.*