

ABSTRAK

Keong mas atau dikenal sebagai keong murbei (*Pomacea canaliculata*.) adalah spesies keong air tawar berasal dari Amerika Selatan yang memiliki dampak merugikan. Ribuan hektar lahan pertanian padi yang masih muda atau dalam tahap semai mengalami kerusakan parah akibat serangan keong mas. Cangkang keong mas, yang mayoritas terbuat dari kalsium karbonat, memiliki potensi untuk menghasilkan kitosan melalui deasetilasi kitin. Kitin merupakan bahan organik utama yang ada pada berbagai kelompok hewan seperti crustacea, insecta, fungi, mollusca, dan arthropoda, termasuk keong mas. Penelitian ini bertujuan untuk mengevaluasi pengaruh konsentrasi NaOH terhadap kualitas kitosan yang dihasilkan dari limbah cangkang keong mas (*Pomacea canaliculata*). Variasi konsentrasi NaOH yang digunakan adalah 50%, 60%, dan 70%. Hasil penelitian menunjukkan bahwa rendemen kitosan tertinggi terjadi pada konsentrasi NaOH 50% sebesar 96,3565 gram, diikuti oleh 60% sebesar 31,6279 gram, dan 70% sebesar 36,2533 gram. Pada karakterisasi lainnya, kadar air kitosan tertinggi tercatat pada konsentrasi NaOH 50% (0,15%), diikuti oleh konsentrasi NaOH 60% dan 70% (masing-masing 0,04%). Kadar abu kitosan paling tinggi tercatat pada konsentrasi NaOH 70% (0,54%), diikuti oleh konsentrasi NaOH 50% (0,43%), dan konsentrasi NaOH 60% (0,15%). Uji kelarutan kitosan menunjukkan bahwa konsentrasi NaOH 70% menghasilkan solusi yang lebih jernih dengan sedikit gumpalan dibandingkan konsentrasi 50% dan 60%. Selanjutnya, nilai derajat deasetilasi mengindikasikan bahwa kitosan yang memenuhi standar berada pada konsentrasi NaOH 60% (74,05%) dan 70% (82,53%). Dari hasil pengujian derajat deasetilasi, dapat disimpulkan bahwa kitosan yang memenuhi standar sesuai dengan konsentrasi NaOH 60% dan 70%. Studi ini memberikan wawasan mengenai potensi penggunaan limbah cangkang keong mas sebagai sumber kitosan berkualitas dengan mempertimbangkan variasi konsentrasi NaOH.

Kata Kunci : Kitosan, Pengaruh Konsentrasi NaOH, Cangkang Keong Mas

ABSTRACT

Golden apple snail, also known as *Pomacea* spp., is a freshwater snail species originating from South America and causing detrimental impacts. Thousands of hectares of young or seedling-stage rice fields suffer severe damage due to the invasion of golden apple snails. The shells of these snails, predominantly composed of calcium carbonate, hold the potential for producing chitosan through chitin deacetylation. Chitin is a primary organic material present in various animal groups such as crustacea, insecta, fungi, mollusca, and arthropoda, including the golden apple snail. This research aims to evaluate the influence of NaOH concentration on the quality of chitosan derived from waste shells of the golden apple snail (*Pomacea canaliculate*). NaOH concentrations of 50%, 60%, and 70% were utilized as variations. Research findings indicate that the highest chitosan yield occurs at a NaOH concentration of 50%, yielding 96.3565 grams, followed by 60% at 31.6279 grams, and 70% at 36.2533 grams. In terms of other characterizations, the highest chitosan moisture content is observed at a NaOH concentration of 50% (0.15%), followed by NaOH concentrations of 60% and 70% (both at 0.04%). The highest chitosan ash content is recorded at a NaOH concentration of 70% (0.54%), followed by 50% (0.43%), and 60% (0.15%). Chitosan solubility testing reveals that a NaOH concentration of 70% yields a clearer solution with fewer clumps compared to concentrations of 50% and 60%. Furthermore, the degree of deacetylation values indicate that chitosan meeting the standards is achieved at NaOH concentrations of 60% (74.05%) and 70% (82.53%). Based on the degree of deacetylation test results, it can be concluded that chitosan conforming to standards is achieved at NaOH concentrations of 60% and 70%. This study provides insights into the potential utilization of waste shells from the golden apple snail as a source of quality chitosan, taking into account variations in NaOH concentration.

Keywords : Chitosan, Concentration NaOH, golden snail shell