

## ABSTRAK

Indah, Dwi. 2021. Variasi Waktu Perendaman Asam Terhadap Kualitas Gelatin Teripang (*Paracaudina australis*) Sebagai Sumber Belajar Biologi. Skripsi, Program Studi Pendidikan Biologi, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Muhammadiyah Jember. Pembimbing : (1) Novy Eurika, S. Si, M. Pd. (2) Ika Priantari, S. Si, M. Pd

Kata Kunci: Teripang (*Paracaudina australis*), Gelatin, Variasi Waktu Lama Perendaman, Perendaman Asam, Sumber Belajar Biologi.

Teripang merupakan komoditas perikanan yang bernilai ekonomis tinggi dan umumnya diperdagangkan dalam bentuk kering, teripang (*Paracaudina australis*) adalah jenis teripang yang mudah ditemukan diperairan Indonesia. Teripang diduga memiliki kandungan protein kolagen yang tinggi. Informasi saat ini menjelaskan bahwa teripang memiliki kandungan protein kolagen sebesar 70% yang berpotensi dikembangkan menjadi produk gelatin.

Tujuan penelitian ini untuk mengetahui bagaimana perbedaan variasi waktu perendaman asam terhadap kualitas gelatin teripang (*Paracaudina australis*), dan untuk mengetahui validitas bahan ajar handout yang dikembangkan dari hasil penelitian variasi waktu perendaman asam terhadap kualitas gelatin teripang (*Paracaudina australis*). Jenis penelitian ini adalah kuantitatif dilanjutkan dengan penelitian pengembangan. Rancangan penelitian kuantitatif menggunakan Rancangan Acak Lengkap (RAL), dan model pengembangan bahan ajar menggunakan model 4D yang dibatasi pada tahap Validasi. Analisis data kuantitatif menggunakan uji Kruskal-Wallis dan dilanjut uji Mann-Whitney, dan analisis validitas bahan ajar menggunakan analisis deskriptif.

Hasil penelitian ini menunjukkan bahwa terdapat perbedaan variasi waktu perendaman asam terhadap kualitas gelatin, yaitu rendemen dan pH gelatin teripang (*Paracaudina australis*). Rendemen tertinggi yang dihasilkan yaitu sebanyak 5% diperoleh dengan perlakuan lama perendaman 40 dan 32 jam, sedangkan uruk rendemen terendah yang dihasilkan sebanyak 1,2% diperoleh dengan perlakuan lama perendaman 10 jam. Persentase pH yang dihasilkan yaitu pH tertinggi di hasilkan oleh lama perendaman 10 jam (9,9), dan pH terendah yaitu dihasilkan oleh lama waktu perendaman 48 jam (5,6). jadi nilai pH yang paling mendekati standart SNI gelatin terdapat pada perlakuan waktu 48 jam (5,6). Hasil validasi bahan ajar handout pokok pembahasan bioteknologi menunjukkan dalam ketagori valid (89 %).

## BSTRACT

Indah, Dwi. 2021. Variation of Acid Soaking Time To The Quality of Gelatin Teripang (*Paracaudina australis*) As a Source of Biological Learning. Thesis, Biological Education Study Program, Faculty of Teacher Training and Education, Muhammadiyah University of Jember. Advisors : (1) Novy Eurika, S. Si, M. Pd. (2) Ika Priantari, S. Si, M. Pd

**Keywords:** Sea cucumbers (*Paracaudina australis*), Gelatin, Long Time Variations Immersion, Acid Immersion, Biological Learning Resources.

Sea cucumbers are a fishery commodity of high economic value and are generally traded in dry form, sea cucumbers (*Paracaudina australis*) are a type of sea cucumber that is easy to find in Indonesian waters. Sea cucumbers are thought to have a high content of collagen proteins. Current information explains that sea cucumbers have a collagen protein content of 70%, which has the potential to be developed into gelatin products.

The purpose of this study was to find out how the influence of acid soaking time variation on the quality of sea cucumber gelatin (*Paracaudina australis*), and to find out the validity of handout teaching materials developed from the results of research variations in acid soaking time to the quality of sea cucumber gelatin (*Paracaudina australis*). This type of research is quantitative followed by development research. The causative research design uses the Complete Randomized Design (RAL), and the teaching material development model uses a 4D model that is limited to the Validation stage. Analyze quantitative data using Kruskal-Wallis test and Mann-Whitney test, and analysis of the validity of teaching materials using descriptive analysis.

The results of this study showed that there is a difference in acid soaking time variation to the quality of gelatin, namely the yield and pH of sea cucumber gelatin (*Paracaudina australis*). The highest yield produced was as much as 5% obtained by the long soaking treatment of 40 and 32 hours, while the lowest yield uruk produced as much as 1.2% obtained by the long treatment of immersion 10 hours. The percentage of pH produced is the highest pH produced by the length of immersion 10 hours (9.9), and the lowest pH is produced by the length of immersion time of 48 hours (5.6). so the pH value closest to sni gelatin standard is found in the treatment time of 48 hours (5.6). The validation results of the teaching materials of the biotechnology subject handout show in valid ketagori (89 %).