

**Kajian Bahan dan Konsentrasi Asam Asetat terhadap Sifat Kimia dan Fisika
Kolagen dari Limbah Pertanian**

*(Study of Materials and Acetic Acid Concentration on the Chemical and Physical
Properties of Collagen from Agricultural Waste)*

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ABSTRACT

BSF and fish waste are one of the wastes that are often found and still contain various nutrients and compounds, one of which is collagen. Collagen is a protein compound that connects tissues which is widely used as an additive in the food, pharmaceutical, cosmetics and industrial sectors. The aim of this research was to determine the chemical properties and physical characteristics of collagen obtained from BSF and fish waste. Collagen production uses an acid-soluble extraction method with an acetic acid concentration of 0.1 M; 0.5 M; 0.9 M; and 1.5 M from two materials, namely BSF and fish waste. Data analysis uses T-test and Analysis of Variance (ANOVA) and if there is a significant difference, continue with the DMRT test. The results of the ANOVA test showed that the acid concentration was significantly different ($P < 0.05$) to the ash content and collagen protein content but not significantly different to the yield, whiteness and water content. The concentration of acetic acid affects the differences in results on functional groups and collagen amino acids. T-test showed that different types of ingredients had a significant effect on the yield, water content, ash content and total protein ($P < 0.05$), but did not significantly differ on the degree of whiteness of the collagen produced. The type of material affects the functional groups and has a different type of amino acid than the two samples.

Key words: *acetic acid, fish waste, BSF prepupa, collagen*