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Zulfia Retna Werdani, Optimization of Extraction Solvent Variations on the Determination of Anthocyanin Content by the Spectrophotometric Differential pH Method in Purple Cabbage as a Basic Material for the Formalin Test Kit. Supervised by apt. Nurma Sabila, S.Farm., M.S.Farm.

Purple cabbage has purple leaves due to the presence of anthocyanins. With the anthocyanin content, purple cabbage can be utilized in the field of screening technology as a formalin test kit test in food products. So far there is no information from previous studies related to the optimal solvent for extracting anthocyanins in purple cabbage. The purpose of this study was to determine the optimal solvent for extracting anthocyanins in purple cabbage as the basic material for formalin test kit based on the highest anthocyanin content. The research stages carried out were extraction of purple cabbage using various types of solvents distilled water, 96% ethanol, methanol, 96% ethanol and methanol acidified with 0.1% HCl to pH 3, determination of anthocyanin content of purple cabbage extract using spectrophotometric differential pH method, and formalin testing using purple cabbage extract with the highest anthocyanin content based on color changes using Image J. The results of determining the total anthocyanin content in purple cabbage extract with distilled water, 96% ethanol, methanol, 96% ethanol and methanol acidified with 0.1% HCl to pH 3 are 9.11mg/L; 89.58mg/L; 91.17mg/L; 92.92mg/L 90.09mg/L respectively. The results of formalin testing with purple cabbage extract based on color changes analyzed using Image J software showed that the higher the concentration of formalin, the lower the absorbance value. Based on the results, it can be concluded that the optimal solvent to extract anthocyanins in purple cabbage is 96% ethanol solvent acidified with 0.1% HCl to pH 3 with a level of 92.92 mg/L. Anthocyanins in purple cabbage extract are less able to detect the presence of formalin because the color change that occurs is not clearly seen.

Keywords: Purple Cabbage, Anthocyanin, pH Differential Spectrophotometry, Formalin