ABSTRACT

Naufa Azzahra, 2402012114012163, **"Growth and Pigment Production of Yeast Isolate (EK008) in Potato Dextrose Broth (PDB) Medium with the Addition of Various Concentrations of NH_4Cl as a Nitrogen Source"** under the supervision of Endang Kusdiyantini and Agung Suprihadi.

Yeasts are microorganisms with the potential to produce natural pigments as environmentally friendly alternatives to synthetic dyes. Pigment production by yeast is influenced by environmental conditions, including the availability of nitrogen as a key nutrient in cellular metabolism. This study aimed to investigate the effect of varying concentrations of ammonium chloride (NH_4Cl) as a nitrogen source on the growth, pigment production, and glucose utilization of yeast isolate EK008 in Potato Dextrose Broth (PDB) medium. The NH_4Cl concentrations used were 0 g/L (control), 0.5 g/L, 1.0 g/L, and 1.5 g/L. Observed parameters included yeast growth measured by spectrophotometry at a wavelength of 600 nm, pigment production based on absorbance at 470 nm, and residual glucose levels to assess substrate utilization efficiency. The results showed that NH_4Cl addition did not significantly affect growth and pigment production. However, the concentration of 0.5 g/L yielded the highest growth, maximum pigment production, and the lowest residual glucose level, indicating optimal fermentation efficiency. These findings suggest that NH_4Cl at certain concentrations can enhance the productivity of yeast in producing natural pigments and utilizing glucose efficiently.

Keywords: Yeast, Pigment, Nitrogen.