

ABSTRACT

Kartika Nur Faisah, 24020120140148 Growth and Pigment Production of Yeast Isolate EK-005 in Rice Washing Water Media. Under the guidance of Endang Kusdiyantini and Nurhayati.

Yeasts are microorganisms capable of producing pigments, one of which can be derived from rice washing water. Pigments are coloring substances widely utilized in the food, cosmetics, and textile industries. The growth and production of pigments are influenced by several factors, one of which is the culture medium. Rice washing water contains carbon sources, making it a potential component for pigment production. This study investigated the use of Yeast Peptone Rice Washing Water (YPACB) medium, with Potato Dextrose Broth (PDB) as a control and Yeast Peptone Glucose (YPG) as a comparison. The PDB, YPG, and YPACB media have distinct compositions, which can affect yeast growth and pigment production. The aim of this study was to analyze the growth and pigment production of yeast isolate EK-005 using rice washing water as a growth medium, as it was the original source where the yeast was isolated. The yeast isolate EK-005 was cultured in PDB, YPG, and YPACB media for three days, with sampling conducted at incubation times of 0, 6, 24, 30, 48, 54, 72, and 78 hours. Samples taken at 78 hours of incubation were extracted using 95% ethanol to measure the total pigment content. Cell growth was measured using a spectrophotometer at a wavelength of 520 nm, and total pigment concentration was determined using a spectrophotometer at 535 nm. The pigment values were analyzed using ANOVA, which showed significant differences, followed by the Games-Howell test due to the normal distribution but non-homogeneous variance of the data. The highest cell growth was observed in the PDB medium, with an absorbance value of 2.846. After 78 hours of incubation, the highest average total pigment concentration was also observed in the PDB medium, with a value of 0.877 mg/ml.

Keywords: Pigments, Yeast Isolate EK-005, Rice Washing Water