ABSTRACT

EXPLORATION AND DEVELOPMENT OF NATURAL DYE FROM PURPLE CORN COB (ZEA MAYS L. VAR. CERATINE KULESH) USING THE PRE-MORDANTING METHOD FOR APPLICATION ON POLYCOTTON FABRIC

By

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This study aims to explore and develop the potential of natural dyes derived from purple corncobs (Zea mays L. var. ceratina Kulesh) as an environmentally friendly alternative for the textile industry. The pigment was extracted using a boiling (hot extraction) method and applied to cotton-polyester blend fabrics (polycotton) through the pre-mordanting technique using various types of mordants. Experiments were conducted on five types of polycotton fabrics: Oxford, Drill, Toyobo, Mori, and Tetoron Axinite. The exploration results indicate that alum (tawas) produced the most intense and suitable color, particularly on Drill fabric. All fabrics exhibited a purplish-grey hue. The final outcome was realized in the form of a large fabric sheet measuring 25 × 150 cm, accompanied by an exploration catalog containing documentation and fabric samples. This research confirms that purple corncobs have high potential as a source of anthocyanin-based natural dye (ZPA) that is applicable and aligns with sustainable principles in the textile industry.

Keywords: Natural dye, Purple corn cob, Anthocyanin, Pre-mordanting, Cotton-polyester blend fabric