

## PREPARATION OF ECO-FRIENDLY SUSTAINABLE PLASTIC COMPOSITE FROM AGRICULTURAL WASTE

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### ABSTRACT

Properties of agricultural waste plastic composites largely depend on mass ratio and chemical composition of individual components, as well as of the mixing methods and mixing sequence of the components. Significantly higher values of the properties of polypropylene – agricultural waste (PP-Aw) composites indicated that two-step procedure of the composite preparation is more favorable. Maleic anhydride (MA) in the form of maleated polypropylene (MAPP) was frequently used as a coupling agent for production of PP-Aw composites. It was found, that MA reliably improves adhesion at the waste - polypropylene interface, thus creating composites with better mechanical properties. The achievement of effective coupling action already at 1.7 % - 2% of MA addition, together with its favorable accessibility and relatively low price, recommend it for this purpose. However, the addition of MA, at the same time reduced impact resistance of the resulting composites. This study was conducted to examine the influence of MA addition to tensile strength, elongation, modulus of elasticity of PP-Aw composites made with MAPP coupling agent as per the application.

**KEYWORDS:** Agricultural Waste Plastic Composites, Polypropylene Matrix, Coupling Agents, Properties