

## EXTRACTION AND ANALYSIS OF PHENOLIC COMPOUNDS IN COFFEE CHERRY PULP AND THEIR UTILIZATION IN PRODUCTION OF RESINOID BOND FOR ABRASIVE MACHINING WHEELS.

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### ABSTRACT

Industrial growth and expansion in the manufacturing sector continuously create an equal demand for raw materials and other consumables. A promising strategy to sustain this cause-effect at equilibrium is application of industrial biotechnology in utilizing agro-processing by products, otherwise regarded as wastes, where applicable. Considering the huge mass of cherry pulp generated during wet processing of coffee-value chain, this research seeks to study and analyze the phenol compounds contained in coffee cherry pulp with an objective to substituting the industrial phenols from *cumene* used in production of phenolic resins. Preliminary findings show that the main phenolic compounds present in coffee are those derived from hydroxyl cinnamic acids taking about 11.3% dry coffee bean weight. Organic solvent extraction method will be used in phenols extraction followed by chemical procedures to analyze their chemical properties. Characterization will be done for potential use in phenol-formaldehyde resins in production. The use of coffee industrial residues in resins production is an economical solution to agro-processing wastes management as well as a sustainable development in the manufacture of different types of abrasive tools including bonded wheels, coated belts and non-woven abrasives.

**Keywords:** *Abrasive Machining, Coffee Cherry Pulp, Biotechnology Process, Phenols, Resinoid Bond.*