Effects of firing temperature of red clay and sponge waste on physical properties for planting materials

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Abstract: The objective of this study was to study and characterize the physical properties of raw material for planting materials. The experiment started with a preparation of red clay collected from local sources called Sri Khum red clay and sponge waste from car seat production process. The characterization of red clay was analyzed by particle analyzer, X-ray fluorescence (XRF) and X-ray diffraction (XRD). The comparison of physical properties of planting material after firing at 900, 950, 1000, 1050 and 1000°C were studied. The bulk density, water absorption and appearance porosity of planting material were tested. The results showed that the major components of Sri Khum red clay included of 67.05% silicon oxide, 11.32% aluminum oxide and 12.01% ferric oxide by weight. The Sri Khum red clay fired at 1000°C had a bulk density of 18.05%, water absorption of 72.3% and appearance porosity of 47.3%.

Keywords: Sponge waste; Planting Material; Red clay; Water absorption; Firing Temperature