IMPROVEMENT OF SOIL STRENGTH USING AN AGRICULTURAL BY-PRODUCT– PRELIMINARY RESULTS

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ABSTRACT

Acquiring good quality soil is one of the major factors contributing to higher construction costs. Improving substandard soils with stabilizing agents has proven to be more economical and environmentally friendly for many types of earth works. Industry presents a multitude of options for chemical stabilization of soils and some of them have shown successful applications in engineering projects. However, due to the fact that chemicals are used, it may not be environmentally friendly and may cause secondary issues such as corrosion of contacting materials and leaching of chemicals into soil and ground water. Thus, developing new stabilizing agents that increase mechanical behavior of problematic soils but have minimal environmental impact has been a goal for many researchers. The primary goal of this study is to identify the stabilizing effects of the agricultural by-product, pea hulls, on coarse and local fine-grained soils. This study shows preliminary results on the improved shear strength of the sand and local soils with different by-product mixture ratios and curing periods, and presents the potentials of further research on the applications of agricultural by-products in construction applications.