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Experimental studies on improvement of expansive soil by rice husk ash

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Expansive soil had swelling and shrinkage properties, which would be the causes of damage for structure. To change the characters of the expansive soil, we choose rice husk ash to be the additives, we have done the compaction test, liquid-plastic limit combined determination, free swell index determination, and the heave studies on rice husk ash expansive clay with a series concentration (0, 5, 10, 20, 50, 80 mM) of CaCl₂. The ratios of rice husk ash of rice husk ash expansive clay were 0%, 10%, 20% and 30%. Results showed that rice husk ash could significantly reduce the maximum dry unit weight, and improve the optimal moisture content of expansive soil. This measure also could exceedingly improve the consistency index, and reduce the free swell index especially when the ratio was 20%. It could reduce the heave of expansive clay remarkably as well. It was the description that rice husk ash could change the characteristics of expansive clay. With using the rice husk ash, we could use the agricultural rubbish effectively and achieve both benefits of ecology and economy as well.

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