Geophysical Research Abstracts
Vol. 12, EGU2010-14785-1, 2010
EGU General Assembly 2010

Wet Clay Technology decrease water repellency in sandy soil

Vasileios Diamantis, Eleutheria Gazani, Lorvi Pagorogon, Ioannis Gkiougkis, Fotios Pliakas, and Ioannis Diamantis

Department of Civil Engineering, Democritus University of Thrace, Vas. Sofias 12, GR-67100, Xanthi, Greece. Email: bdiamant@env.duth.gr

Clay has been traditionally used to mitigate water repellency in sandy soils. However, the quantities required (10-15%) are often prohibitive for use in large-scale projects. The application of clay in suspension (wet clay technology, WCT) was therefore proposed as an alternative mean for clay amendment. For this reason the required quantity of a clayey soil was mixed with freshwater (at 1:5 soil:water). After 2 min of settling time, the supernatant was applied to a water repellent sandy soil using a watering can. The use of wet clay at a rate of 1 kg/m2 was effective to decrease soil water repellency immediately after application. The number of wettable samples during the 5 week monitoring period, was maintained between 38-50%, compared to 9-31% after conventional dry application, and 13-21% for the control soil. Therefore, WCT was beneficial in decreasing soil water repellency. By this way, it is possible to significantly decrease the amount of clay required for soil reclamation. This is especially important for regions were clay is expensive and/or not abundant. A compact and portable equipment for WCT preparation is therefore proposed for field application.