

The significance of soil and water in agricultural lands and new evaluation techniques for growth.

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Introduction

Through nest building and hunting activities, ants alter physical properties and organic process standing of soils through structural modifications and nutrient accumulation. In turn, these alterations might enhance soil quality for plant growth. This study examined the result of the invasive red foreign ant, arthropod genus *invicta* Buren, on soil properties and plant growth. In our greenhouse study, hymenopteran activity cut soil pH and enhanced phosphorus (P⁺) and metal (K⁺) within the soil. we tend to collected soil from among and adjacent to haphazardly hand-picked nests in 2 common habitats of Louisiana – longleaf-pine (*Pinus palustris*) forests and longleaf-pine plantations. when physical and chemical properties were measured, bush japonicus seedlings were planted within the soil to work out rate of growth [1]. In variable charge soils, ion retention and accumulation through surface assimilation at exchange sites may be a competitive method.

The objectives of this study within the wet tropics of so much north Queensland were to research (i) whether or not the pre-existing high salt in variable charge soils had any impact on the retention of chloride and nitrate, derived principally from the applied fertilizer; and (ii) whether or not chloride competed with nitrate throughout the surface assimilation processes. Soil cores up to 12.5 m depth were taken from seven sites, representing four soil sorts, within the Johnstone stream structure. Six of those sites had been below sugarcane (*Saccharum officinarum*-S) cultivation for a minimum of fifty years Associate in Nursing one was an undisturbed timberland. The cores were divided at one.0 m depth increments, and subsamples were analysed for nitrate-N, ion (CEC)- and anion-exchange capacities (AEC), pH, exchangeable cations (Ca, Mg, K, Na), soil organic C (SOC), electrical physical phenomenon (EC), sulphate-S, and chloride [2]. The salinization of agricultural soil may be a common issue of concern. However, the coupling relationship between soil chemical properties and mechanical behavior has been for the most part neglected. a continuing water content triaxial check was conducted by dominant suction on unsaturated agricultural soils collected from paddy fields. The soil samples were diluted with completely different salt solutions (a H₂O, a common salt (NaCl) resolution and a salt (CaCl₂) solution) to research the influence of salinity on the mechanical behavior of soils. The pore water pressure of silt soil was considerably influenced by the pore water salinity, whereas the pore water

pressure of loose clay was considerably influenced by internet traditional stress. The results showed that the salt sort and concentration considerably affected the cohesion price of silt soil. Associate in Nursing empirical constitutional model that incorporated diffusion suction was conferred during this paper to elucidate and quantify the result of pore water salinity on the shear strength of silt soil. Diffusion suction was thought-about Associate in Nursing freelance stress variable within the constitutional model, not like the salt sort and concentration [3]. In arid and dry desert areas, climate factors clearly impact soil microorganism community, which might even be greatly altered when agricultural practices at multiple spacial scales.

However, it's still poorly unknown whether or not the results of climate on soil microorganism diversity amendment when intensive agriculture at an oversized spacial scale. To uncover this concern, we tend to used time-interval archived soils, taken from paired desert and agricultural experiments at 5 field stations of the Chinese system analysis Network across northern China, and performed high-throughput sequencing. Herein, we tend to discovered that the bunch pattern of soil microorganism communities was influenced by precipitation at some extent in desert system, whereas not compact by climate factors in agricultural system. Additionally, the analyses on microorganism communities conferred that the results of climate factors on the communities cut when agricultural practices. Soil microorganism richness was considerably correlate with environmental temperature in deserts ($R = -0.39$, $P < 0.001$) and croplands ($R = \text{zero}.34$, $P = 0.004$), whereas the coefficients were opposite; the richness-precipitation relationship was vital in deserts ($R = \text{zero}.63$, $P < 0.001$) whereas nonsignificant in croplands ($R = -0.03$, $P = 0.815$) [4]. Heavy metals ar present parts with high natural background levels within the volcanic space. Therefore, it's necessary to conduct a risk assessment and establish potential sources of significant metals. during this study, 4488 soil samples (0–20 cm) were collected in Chengmai County, a typical volcanic space in Hainan Province, and analyzed for eight significant metals and major oxides.

Pollution level, ecological risks, and health risks were evaluated by geo-accumulation index (I_{geo}), pollution index (PI), potential ecological risk index (RI), hazard index (HI), and cancer risks (CR). The positive matrix resolving (PMF) model was more accustomed confirm the priority supply of significant metals [5].

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Received: 13-July-2022, Manuscript No. AAIEC-22-71124; Editor assigned: 15-July-2022, PreQC No. AAIEC-22-71124(PQ); Reviewed: 25-July-2022, QC No. AAIEC-22-71124; Revised: 28-July-2022, Manuscript No. AAIEC-22-71124(R); Published: 30-July-2022, DOI: 10.35841/2591-7331-6.4.119

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