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# Structural quality of on Oxisol in recovery for 18 years

C. dos Santos Batista Bonini, M.C. Alves, D.C. Marchini, O. Garcia de Arruda , and S. Nilce Souto Filho
University São Paulo State, Ilha Solteria, São Paulo, Brazil

Incorrect use of soil and large buildings construction in rural areas are causing changes to it, making them less productive and thus increasing the degraded areas. Techniques aimed at ecological restoration of degraded soils have been investigated. In this sense we investigated the positive changes in the structural quality of a soil that was beheaded in human intervention techniques for recovery for 18 years, having been used green manures, gypsum and pasture. The studied area is located in Mato Grosso do Sul, Brazil. The experimental design was a completely randomized with seven treatments and four replications. The treatments were: control (tilled soil without culture); Stizolobium aterrium; Cajanus cajan; lime+S. aterrimum; lime+C. cajan; lime+gypsum+S. aterrimum; lime+gypsum+C. cajan. In 1994, all treatments with C. cajan were replaced by Canavalia ensiformis and in 1999, Brachiaria decumbens was implanted in all treatments. Data from vegetated treatments were compared with the control bare soil and native vegetation (savannah). We evaluated the distribution and aggregate stability in water, soil samples were collected in 2010 in the depths: 0.00-0.10; 0.10-0.20 and 0,20-0.40 m. The results were analyzed by analysis of variance, following Scott-Knott test (5%) of probability to compare averages. Evaluating the results is noted that in the depth of 0.00-0.10 m, the control bare soil and savannah soil had lower and higher DMP, respectively. All recovery treatments were DMP greater than found for the bare soil control. Treatments: S. aterrimum, lime + gypsum + C. cajan and lime + gypsum + S. aterrimum and the savannah control were similar in the depth of 0.00-0.10 m. All of the recovery treatment in the depth from 0.00-0.10 m with values is close to the native vegetation of the savannah. Depths of 0.10-0.20 and 0.20-0.40 m results obtained for DMP treatments in recovery are similar to the bare soil, except for treatments with S. aterrimum and lime + gypsum + S. aterrimum that had values were similar to the savannah control. This behavior shows that the recovery of soil treatments were eficient only the superficial layer soil and other depths in the structure is still in recovery. It is concluded that the recovery treatment have positively influenced the structure quality in the 0.00-0.10 m depth : the recovery treatment with S. aterrimum and lime + gypsum + S. aterrimum were the most promising in the recovery structural quality.