

## 人工マクロポアが土壌中の有機物量と植物バイオマス量に及ぼす影響 The Effect of Artificial Macropores on the Amount of Organic Matters in Soils and Plant Biomass.

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Artificial macropores with fibrous material were installed in degraded red yellow soils to enhance vertical infiltration along with organic matter and nutrients. They enhanced vertical infiltration without cultivation which could cause small particle loss from the surface soils. Macropore and no macropore plots were prepared and total carbon in 10, 30, 50 cm depth were measured each half year. Infiltrated soil water was sampled through wick sampler to measure total organic carbon and ion concentration. Results showed that total carbon in macropore plot increased in spring while it decreased in fall, which would be caused by infiltrated soil water. Actually total carbon concentration in soil water was always higher in macropore plot. Nitrate nitrogen concentration was also higher in macropore plot, which was decomposed by biological activity. Resulted vegetation was significantly higher in macropore plot than no macropore plot. This vegetation would be possible organic matter source for future soils. This technique enhanced vertical infiltration, provided organic matter in soils, and restored the vegetation in degraded land.

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