



Phytosociological study in a mined area to define restoration measures, Minas Gerais-Brazil

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Mineral exploitation is currently one of the main generators of profit for Brazil through the export incomes. However, in parallel with these benefits, the mining activities often produce impacts for the environmental diversity, among others. These must be minimized through the development of efficient and applicable techniques taking into account local specific conditions. In this study we describe a case study to evaluate the floristic diversity and the soil conditions of one mined area, currently with 14 years of restoration. The study area is located in the municipality of Descoberto in Minas Gerais State, Brazil and has one hectare in the process of restoration through the planting of seedlings. The forest inventory of all individuals with Circumference at Breast Height (CBH) ≥ 15 cm was carried out and the phytosociological parameters were evaluated through the software Fitopac 2.1. The results show a high floristic diversity $H' = 3,258$ as well as equability ($J' = 0,783$), evidencing that the area is floristically heterogeneous and has low ecological dominance. In addition, the area showed floristic similarity to other restored areas that were already in a more advanced restoration. Moreover, the study area shows higher levels of cation exchange capacity (t), approximate sum base values (SB) and base saturation (V) than those verified in nearby areas. Evaluating the successional characteristics (greater presence of individuals of secondary succession) and the domain of species with dispersion by animals, we can infer that the area is in an advanced stage of restoration besides performing its environmental and social functions. Thus, we can conclude that the ecological restoration of mined areas is feasible when the restoration techniques are applied correctly. Furthermore, we can say that these successful restoration measures are increasing the environmental sustainability and help considerably recovering the losses caused by mining.

Acknowledgements: The authors thank CAPES (PDSE Program) and CBA-Votorantim for the financial support of this research.

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