



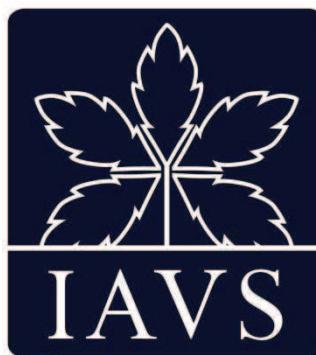
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# Abstracts

**Ataíde M.V.R.**

Poster presentation

**Recovery of degraded areas due to nickel mining by using native species of Brazilian Savannah, Barro Alto, GO.**

Session: Restoration of subtropical and tropical grasslands and savannas

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The recovery of degraded areas by mining is a complex process due to the damage that this activity causes to the physical, chemical and biological structure of the soil. The establishment of a native vegetation cover is important to stabilize the bare area guaranteeing a minimum biological diversity. Among this context, the choice of the appropriate native plant species is an important step. The aim of this study was to evaluate the use of native plants in the Brazilian Savannah and legume species, used as ground cover, for recovery of degraded areas by nickel mining in ultramafic complex of Barro Alto, GO, Brazil. The experiment was conducted in a sterile pile slope (2H:1V) in four treatments, in four replicates: N - no seeding; NAT - seeds cocktail of 13 herbaceous and shrub native species ( $3704 \text{ seeds/m}^2$ ); LEG - two species of leguminous seeds cocktail ( $14 \text{ seeds/m}^2$ ); and NAT+LEG - seed cocktail combination of native species and legume seeds. The seeds were sown in  $1.8\text{m}^2$  plots bounded by a wooden frame and covered with a jute fabric mat, to fix the seeds to the substrate. The substrate had bioavailable levels of Ni= $15.7 \text{ mg.kg}$  soil; P= $1 \text{ mg kg}$ ; Cr (VI)= $273 \text{ mg.kg}$  soil; M.O< $1\%$ ; Ca/Mg=0.11; and silt/clay=0.70. The plots were previously fertilized with appropriate dose of NPK fertilizers. Were applied also 50 ml of inoculant of diazotrophic bacteria. The dynamics of occupation and land cover percentage provided by the species were monitored from January/2013 to May/2015. Throughout this period, there was emergence of eight species: *Aspidosperma* sp., *Bauhinia* sp., *Mimosa clausenii*, *Setaria parviflora*, *Axonopus chrysoblepharis*, *Vernonia megapotamica*, *Hypenia brachystachis* and *Heliotropium salicoides*. The percentage of land cover changed slowly during the two years following the implementation of the experiment. In February/2015 the presence of young individuals of *M. clausenii* was observed, which probably originated from seeds that have been dormant all this time, together with the species *H. salicoides*, *V. megapotamica*, and *H. brachystachis*. The percentage of soil coverage after 860 days was: N= $4.2\%$  < LEG= $6.5\%$  < NAT+LEG= $33.6\%$  < NAT= $43.7\%$ , showing that native species and the combination with legumes were essential to begin the process of colonization of the area and of soil covering.