SER 2017
Iguassu Brazil

Linking Science and Practice for a Better World

VII World Conference on Ecological Restoration

V Congreso Iberoamericano y del Caribe de Restauración Ecológica

I Conferência Brasileira de Restauração Ecológica

August 27 to September 1, 2017
Recanto Cataratas Thermas Resort & Convention
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BOOK OF ABSTRACTS

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(pasture lands) previously covered by invasive grasses and sowed fast growing native species (including legumes). The relative density (seedlings/seeds sowed) and cover estimations were measured 90 days after sowing. The experiment was installed in four permanent preservation areas at the Serra do Facão Hydroelectric Power Plant in Catalão - Goiás, Brazil. In each area, five fast growing native species (Tachigali rubiginosa, Solanum lycocarpum, Guazuma ulmifolia, Solanum paniculatum, Senna alata) and three fast growing legumes (Cajanus cajan, Canavalia ensiformis, Crotalaria spectabilis) were sown in 12 plots of 1.8 × 3-m per species. Relative density and plant cover were respectively: S. alata 36.09%/11.38%; S. lycocarpum 18.46%/2.90%; G. ulmifolia 2.92%/0.02%; S. paniculatum 2.53%/0.02%; T. rubiginosa 0.89%/0.06%; C. ensiformis 24.83%/7.71%; C. spectabilis 24.03%/14.56%; C. cajan 10.42%/1.09%. S. alata, C. ensiformis and C. spectabilis had a high relative density and soil cover in short time, representing better species to use in restoration projects. The other tested species showed low relative density and slower growth. Future assesments can show their potencial long term.

T19-P06 - Woody species and strategies for restoration in the Cerrado biome

DANIEL LUIS MASCIA VIEIRA; ALEXANDRE BONESSO SAMPAIO; LADISLAU A. SCORUPA; MARCELO FRANCIA ARCO VERDE; EDUARDO FRANCIA CARNEIRO CAMPELLO; LUIZ FERNANDO DUARTE DE MORAIS; MARCELO KUHLMANN PERES; FERNANDO SOUZA ROCHA; ROBERTO SHOJIROU OGATA; MARIA CRISTINA DE OLIVEIRA; GISELDA DURIGAN; INGO ISERNHAGEN; RONESSA BARTOLOMEU DE SOUZA; CAROLINE TURAZI; JOSÉ FELIPE RIBEIRO
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The success of native vegetation reclamation depends upon the knowledge about the species and planting strategies/models best suited for the area to be recovered. This work suggests more than 200 native species with their physiognomies of occurrence for the Cerrado biome, associated to its ecological strategy of occupation (covering or diversity) and main categories of potential economic utilization for using in eight planting strategies/models. It aims to guide technicians and owners of rural areas on the choice of species and appropriate strategies for woody (forest and savannah) vegetation recovery of Cerrado biome. Strategies for restoration with woody native vegetation vary from passive actions, as natural regeneration, to high intervention actions, such as those in Agroforestry Systems. Areas with greatest potential for natural regeneration have presence of regenerating seedlings, greater cover of native vegetation nearby and low presence of exotic and local competitors and it requires less labor and costs while areas with low potential for natural regeneration demand intense intervention and more expensive technics. All restoration action has risks and must be monitored and managed according to the expected results. These actions will indicate if your strategy was adequate and well conducted. Actions should start in small areas to support new decisions if something fails. To attend the law of Protection of Native Vegetation, these strategies can be applied in Brazil for Legal reserve (ARL) and Permanent Preservation (APP) areas.

T19-P07 - Seed germination traits: implications for the restoration of Brazilian savanna in a climate change

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In a climate change scenario, restoration ecology strategies must incorporate the different outcomes projected by recent studies, in order to mitigate its effects in the long term. Therefore, using propagules of regions with different climate conditions and seeds with distinct traits can be a good strategy to ensure species or populations adaptation. To improve the selection of populations more likely to accommodate to severe climate conditions in the Brazilian savanna, we compared different populations of native species to verify which seed traits are correlated with climate attributes, mainly temperature and water availability. We collected seeds of three species of trees in two different savanna areas that are distinct in terms of average annual rainfall and dry season, in the Northeast of Mato Grosso (humid savanna) and North of Minas Gerais (drier savanna), in Brazil. We compared seed germination traits (germinability, fluctuation temperature and water potential), morphological traits (size, shape and weight) and biophysical traits (water content). Germination traits were different among the two populations evaluated for all species. Seeds from the drier region germinated under higher temperature and lower water potential. There was no difference in the morphological and biophysical traits. These results indicate that populations of native species in Minas Gerais are already adapted to drought and higher temperatures, and the populations of Mato Grosso can be negatively affected by climate change. Therefore, using seeds from distinct locations could be a good strategy in future restoration projects in order to mitigate the impact of severe climate conditions.