BioPatriam: Biodiversity Preservation with Brazilian Native Plant

de Almeida, Maria Eduarda

Biological contamination is the second largest cause of biodiversity loss on Earth. The genus Pinus is the most problematic invasive specie on the globe. Brazil has 1.59 million hectares of Pinus spp. which has been planted ever since 1960. Pinus has easy dispersion, adaptation and competes with native species. These change the composition of water and decreases soil fertility. The aim of this project was performing an unpublished study with a Brazilian native plant substance for inhibit Pinus elliottii germination. For that, native plants allelopathic potential was studied and Schinus terebinthifolius was selected. Extract was obtained from the leaves of this specie. Experiments were performed in triplicate using a 2^2 factorial design with response surface methodology in order to evaluate the variables temperature and extract concentration in inhibition of Pinus elliottii germination. The photoperiod was remained constant during 12h. Analysis of Variance was used to analyze the significance of the proposed model at 95% of reliability. I performed analysis of phenols. All concentrations that I used decreased seeds vigor. The germination inhibition was obtained with at least 500 ppm. Results pointed that concentration, temperature and interaction between them affect the germination of the Pinus seed. I have tested others seeds with the extract and I could observed that the seeds were not inhibited by it. This fact proved that my extract is selective. The production cost of 1 L was US$ 0,4. Therefore, Schinus Terebinthifolius extract is an innovative and sustainable solution to control the Pinus elliottii dispersial in Brazil, as well as the unique alternative viable. Key words: biodiversity, pinus elliottii, schinus terebinthifolius

Awards Won:
Fourth Award of $500