

BioPatriam: Biodiversity Preservation with Brazilian Native Plant

de Almeida, Maria Eduarda (School: ETEC Guaracy Silveira)

Biological contamination is the second largest cause of biodiversity loss on Earth. The genus *Pinus* is the most problematic invasive species 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 decrease 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 The aim of this project was performing an unpublished study with a Brazilian native plant substance for inhibit *Pinus elliottii* germination.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 species. Experiments were performed in triplicate using a 2² 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* dispersal in Brazil, as well as the unique alternative viable. Key words: biodiversity, *pinus elliottii*, *schinus terebinthifolius*

Awards Won:

Fourth Award of \$500