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Smoke Treatment on Seed Germination

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Abstract:*Smoke is thought to be one of the most import for the betterment of ecosystem and impact of smoke treatment on seed germination of species at community level. Smoke shows to stimulate s seed germination and growth of seedlings of economically important plant species. Smoke treatment can be used to improve growth and crop yield.*

Keywords: Smoke Treatment, Ecosystem, Crop Yield, Seed Germination, etc.

I. INTRODUCTION

Smoke, as a fire by product, in fire- prone areas, was identified as a seed germination promoter in 1910. Smoke affects the water uptake process is seed germination by changing the permeability of the internal cuticle via increased the number and size of permanents. Potential use as a management tool nun tested ecosystem.

II. METHODOLOGY

Identified species tested for the effects of smoke or it's active compound on seed germination. Evaluated the effects of smoke on seed germination or seedlings density through tests such as a paired t-test, ANOVA and MNOVA. Smoke water can be created by:

1. Using drum technique containing water.
2. Using small grill, charcoal and native vegetation.
3. Using commercially smoke available product.

III. LITERATURE REVIEW

Smoke, as a fire by-product, in fire-prone areas, was identified as a seed germination promoter in 1990 (de Lange and Boucher 1990). Research addressing germination response to smoke has occurred in fire prone areas, such as Fynbos in Africa (see Brown et al. 2003 as a review), California chaparral in America (Keeley and Fotheringham1998), Some in-situ smoke-stimulated seed germination tests have shown that smoke application has a potential role in large-scale restoration.

IV. RESULT

Binary Logistic Regression Analysis of all recorded species I found 1662 qualified seed germination tests, whichincluded974speciesfrom105familiesin39orders(AppendixB).Nineorders(Saxifragales,Sapindales,Rhamnales, Proteales, Liliales, Lamiales, Dioscoreales, Dilleniales, and Cornales) had over 50% of species tested respond to smoke application. The binary logistic regression model was not well fit (based on the -2 Log likelihood, estimation2097.471),butseedsourceandsmokeapplicationwereidentified.

*Identified Species Figure Parameter Tests Identified species characteristics (order, growth form, and fire-relation *order) were used in a binary regression (all parameters entered at once) to detect the main. The prediction model of Caryophyllales, Lamiales, Myrtales, Asterales and Ericales with the parameters of order, growth form, and order *fire-relation showed that though the overall percentage of prediction was low (68.1%), the model had a 93.8 %correctpredictionofthesmokeresponse.

V. CONCLUSION

It is concluded that thepresent work of plant derived smoke significantly increased seed germination, seedling androotshootgrowth.Thepositiveresponseingermination,seedling.

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