CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)

Korrin L. Bishop

Project Number

J1603

Project Title

Pitch Canker: Potential Infestations to Coastal Conifers in Humboldt County

Abstract

Objectives/Goals

The goal of my project is to investigate the pitch canker pathogen in California and its specific affects, if any, on Humboldt County conifers. When directly inoculated with the pitch canker pathogen, will selected coastal conifer (redwood, cedar, Douglas fir and Monterey pine) seedlings become infected with pitch canker? My objective is also to learn more about the geographic range in Humboldt County, the dynamics of the disease, the pitch canker lifecycle and any recommendations that would prevent the spread of pitch canker and from the damaging it could produce on the diversity of our redwood forest and its coastal conifer species.

Methods/Materials

I researched and learned about the pitch canker fungus from a variety of sources and enlisted the assistance of specialists in the field of pitch canker study. I obtained state permit applications, coastal seedlings and materials for planting and inoculating 55 seedlings. Basic materials used for this project were: coastal seedlings (total of 55 used and put in 3 groups, each with a control seedling), 48, 6 inch pots, "backyard" soil, tools for planting seedlings, State/Federal permit for the handling of the pitch canker pathogen, autoclave, beakers, pipetor tips, hemocytometer, pipetor, deionized water, 2 plates with grown spores, slides, ethanol.

Results

Results:
After being inoculated with the pitch canker pathogen within 15 days in Group I, II and III Monterey pines and Douglas fir seedlings showed severity of symptoms some seedlings died. While redwoods and cedars in Group I, II and III showed no symptoms. Seedlings were also crossed checked by its control seedling. Seedling data was determined by using a categorical system, categories were defined based on the severity of symptoms.

Conclusions/Discussion

If seedlings are directly inoculated with the pitch canker fungus they will succumb to the disease? My conclusion yielded some surprises. My hypothesis was 50 percent correct and 50 percent incorrect (see results above). I was most surprised at the results of the Douglas fir seedlings. Douglas fir is a major timber crop in Humboldt County. A pitch canker infestation would devastate the timber industry, the economy, and the beauty of our redwood forest, as well as inland forests areas.

Summary Statement

My project is about pitch canker and its potential infestations to coastal conifers in Humboldt County.

Help Received

Dr. Michael Camann, HSU, Dr. U Win, CSU, Monterey, Dr. David L. Wood, U.C. Berkeley, Dr. David Largent, HSU, Dr. Tom Gordon, U.C, Davis, Humboldt County Agriculture Dept., Simpson Timber, Sharon Kirkpatrick, U.C. Davis and my mother who proofread my project.