

CDEA PD/GWSS BOARD PROGRESS REPORT
March 1, 2009

I. Project Title

The Benefits and Costs of Alternative Policies for the Management of Pierce's Disease

II. Principal investigator and cooperators

Principal Investigator

Professor Julian M. Alston

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Co-operator(s)

Professor M. Andrew Walker

Department of Viticulture and Enology, University of California, Davis

Professor Kym Anderson

Department of Economics, University of Adelaide

Dr Mark Hoddle

Department of Entomology, University of California, Riverside

Professor Philip G. Pardey

Department of Applied Economics, University of Minnesota

Professor Jennifer S. James

Department of Agribusiness, California Polytechnic State University, San Luis Obispo

Professor Nicholas Kalaitzandonakes

Department of Agricultural Economics, University of Missouri-Columbia

Other

Dr Bob Sutherst, consultant, Brisbane, Australia

Ms Kate Fuller, Graduate Research Assistant

Department of Agricultural and Resource Economics, University of California, Davis

III. List of objectives and description of activities conducted to accomplish each objective

The overall objective of the proposed research is to develop a detailed, practical, quantitative understanding of the economic consequences of Pierce's disease and alternative management strategies. More specific objectives are to quantify the current and potential economic impact of the disease, to estimate the potential economic payoff to investments in Pierce's disease R&D, to evaluate alternative management strategies including alternative

research investments, and to guide policy decisions, including research priorities. To pursue these objectives we propose to develop an economic model of the California wine and wine-grape sector. The model will be structured to allow us to simulate market outcomes under alternative scenarios for the prevalence of Pierce's disease, and alternative technologies and policies for its management, and to assess the economic consequences of these alternatives for various stakeholder groups. The model will be designed specifically with a view to using it to evaluate the likely expected benefits from investments in alternative R&D projects related to the management of Pierce's disease.

In our proposal we specified a plan of work over three years. The more-specific objectives for the first year of the project were defined as follows:

- Consult in depth with scientists and industry and conduct literature reviews to learn about Pierce's disease and industry technology
- Identify technological alternatives and policies to be evaluated
- Complete simple model and applications
- Work on development and adaptation of world-wide-wine market model
- Prepare foundation for more complete bio-economic model

Our project commenced formally on September 1, 2009. Kate Fuller has been employed as a Graduate Research Assistant to work half-time on the project. We envision that Kate's doctoral dissertation work will form an element of the project.

In the work to date we have emphasized investment in developing our own knowledge and information resources. One important element of this is to develop a detailed data base on the economics of wine and wine grape production in California. We have almost completed the data gathering phase of this element. We are compiling this information into a report documenting by county and crush district for each important grape variety the area planted, yield, quantity produced (crush volume), price, and other such variables over the past 40 years. This information will be useful for other purposes as well as for parameterizing our model of the industry, which is our primary purpose for developing the data base. We have also made some investment in learning about how to structure and use models of spatial-dynamic processes such as the spread of disease.

We have also made significant progress in developing an understanding of the pest and disease problem, and an overview of the issues through consulting with scientists and others and reviewing literature. We have learned that the PD/GWSS problem will be more difficult in some ways to model than we envisioned, so we have opted to focus initially on studying the issues as they arise in the north coastal valleys where Pierce's Disease is spread by native sharpshooters. This approach has the advantage that the pest and disease is a regular continuing phenomenon, which will enable us to develop some economic data and insight into the problem, management strategies, and costs of prevention, control, and eradication strategies. In this way we hope to develop a better understanding that will help us in designing approaches to study the more general problem, including the role of the GWSS.

The objectives for what remains of this first year are:

- To continue to consult with scientists and others and conduct literature reviews to learn about Pierce's disease and industry technology as it relates to our project, and document what we have learned.
- Based on that knowledge, identify technological alternatives and policies to be evaluated
- Complete our work on developing data on the "economic geography" of the California grape and wine industry
- Combine the various pieces of technological and market information to develop a simple model and undertake initial applications
- All of this activity will contribute towards preparing the foundation for a more complete bio-economic model.
- The current plan is to defer the issue of integrating this analysis into an updated and revised world-wide-wine market model until later in the project. For the time being, we can represent these aspects reasonably well a relatively simplified form.

IV. Summary of major accomplishments and results for each objective

As described above, our work on this project has only recently commenced. We have been developing data and other information but do not have any specific major accomplishments to report beyond making progress as planned towards achieving the specified objectives for the first-year.

V. Publications or reports resulting from the project

None to date.

VI. Presentations on research

None to date.

VII. Research relevance statement

This project will contribute to solving the PD/GWSS problem in California by providing detailed, practical, quantitative information about the economic consequences of Pierce's disease and alternative management strategies. More specifically the project will provide quantitative information about (1) the current and potential economic impact of the disease, (2) the potential economic payoff to investments in Pierce's disease R&D, and (3) the benefits and costs of alternative management strategies (including alternative research investments), which can be used to guide policy decisions, including research priorities.

VIII. Lay summary of current year's results

In the first six months of the project we have concentrated on gathering data and other information and learning about Pierce's Disease and the sharpshooters that spread it. Our progress has led us to revise some aspects of the research strategy, but the work has gone generally according to plan, albeit after a delayed start.

IX. Status of funds

We have spent little of the funds to date, mainly because of some delays in the approval process and in establishing the grant account. Total expenditure by the end of February 2009 was about \$17,194.

X. Summary and status of intellectual property produced during this research project

None to date.