State of California
AIR RESOURCES BOARD

Resolution 81-41

June 24, 1981

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705;

WHEREAS, an unsolicited research Proposal Number 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops", has been submitted by the University of California, Riverside to the Air Resources Board; and

WHEREAS, the Research staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

> Proposal Number 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops", submitted by the University of California, Riverside for an amount not to exceed $66,044;

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

> Proposal Number 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops", submitted by the University of California, Riverside for an amount not to exceed $66,044,

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed $66,044.

I certify that the above is a true and correct copy of Resolution 81-41 as adopted by the Air Resources Board.

Sally Rump

Sally Rump
Board Secretary

State of California
AIR RESOURCES BOARD

ITEM NO: 81-11-3b
DATE: June 24, 1981

ITEM: Research Proposal No. 1029-83 entitled, "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops".

RECOMMENDATION: Adopt Resolution 81-41 approving Research Proposal No. 1029-83 for funding in an amount not to exceed $66,044.

SUMMARY: Although considerable research has been conducted to determine the effects of air pollutants on various plant species, the majority of this research has focused on either acute exposures to plants or the study of annual, as contrasted with perennial, crops. This study was undertaken in the spring of 1979 to evaluate the potential oxidant damage to two of the most important perennial San Joaquin Valley crops grown under field conditions, alfalfa and Thompson Seedless grapes. This proposed study is for the third year effort of what was originally planned as a three-year effort.

The major objectives of this study are to:

- o determine whether Thompson Seedless grapes are being damaged by existing levels of oxidant-type air pollution (reduction in yields and/or fruit quality).
- o determine the effects of SO_2 and ambient, subambient, and artificially elevated oxidant concentrations on alfalfa growth and quality.

Alfalfa and Thompson Seedless grapes are being grown in open-top growth chambers under actual field conditions supplied with air containing pre-determined levels of pollutants. In the proposed third year of the alfalfa study, the air pollutant treatments are as they were last year: (1) ambient, non-filtered air, (2) carbon-filtered air, (3) carbon-filtered air to which SO_2 is added, (4) ambient air to which SO_2 is added, (5) carbon-filtered air to which ozone is added to increase ozone dose by 50 percent, and (6) a non-enclosed ambient plot to test chamber effects. For the third year of the Thompson Seedless grapes study, treatments will be: (1) filtered air and (2) ambient (non-filtered) air. All plant responses are correlated with calculated pollution dose, as well as oxidant and/or SO_2 concentration.