

State of California
AIR RESOURCES BOARD

Resolution 83-23
August 26, 1983

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 1220-101 entitled "Effects of SO₂ on Growth and Yield of Winter Crops Grown in California," has been submitted by the University of California, Riverside to the Air Resources Board;

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

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

Proposal Number 1220-101 entitled "Effects of SO₂ on Growth and Yield of Winter Crops Grown in California," submitted by the University of California, Riverside for a total amount not to exceed \$70,407; and

WHEREAS, the Governor's Executive Order D-18-83 prohibits State agencies from awarding research contracts through October 31, 1983;

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 1220-101 entitled "Effects of SO₂ on Growth and Yield of Winter Crops Grown in California," submitted by the University of California, Riverside for a total amount not to exceed \$70,407; and

BE IT FURTHER RESOLVED, that should an exemption from the prohibition contained in Executive Order D-18-83 on awarding contracts for research be granted, the Executive Officer is authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$70,407.

I certify that the above is a true and correct copy of Resolution 83-23 as adopted by the Air Resources Board.


Harold Holmes, Board Secretary

State of California
AIR RESOURCES BOARD

ITEM NO.: 83-12-6b1
DATE: August 26, 1983

ITEM: Research Proposal No. 1220-101 entitled "Effects of SO₂ on Growth and Yield of Winter Crops Grown in California".

RECOMMENDATION: Adopt Resolution 83-23 approving Research Proposal No. 1220-101 for funding in an amount not to exceed \$70,407.

SUMMARY: Recent work in England showed that perennial ryegrass is more sensitive to SO₂ during the winter than the summer months. Yield reductions of perennial ryegrass were reported to occur after exposure to 0.02 ppm SO₂ in winter and 0.04 ppm SO₂ in summer. Lettuce and wheat are two important California winter crops that may suffer reduced yields due to SO₂.

This proposed study will determine the relationship between exposure to sulfur dioxide in wintertime and effect on lettuce and wheat crops. The varieties used in this study will be Empire (lettuce) and Yecora Rojo (wheat), which are widely grown commercially in California. Lettuce and wheat seeds will be planted approximately November 1. Plants will be fumigated with the following pollutant treatments: 1) charcoal-filtered air; 2) ambient air; 3) filtered air plus 0.03 ppm SO₂; 4) filtered air plus 0.07 ppm SO₂; 5) filtered air plus 0.15 ppm SO₂; and 6) ambient air without a fumigation chamber so the chamber effects may be assessed. Fumigations will be done at the Air Resources Board fumigation facility at the University of California, Riverside. Pollution treatments will continue for 24 hours per day seven days per week for the duration of the growing season.

Plant parameters that will be recorded include injury, growth, yield and selected physiological processes. Visual leaf symptoms will be assessed. Fresh and dry weight of stems and leaves will be used as a measure of plant growth at harvest time. Yield per pot will be evaluated on a marketable basis for each crop: weight and quality of lettuce heads and seed weight per plant and 100-seed weight of wheat plants. Photosynthesis and transpiration will be measured to determine differences among treatments.

State of California
AIR RESOURCES BOARD

Resolution 83-27
August 26, 1983

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 1187-98 (R) entitled "Pollutant Transport Study: Bay Area to North Central Coast Air Basin", has been submitted jointly by the Bay Area Air Quality Management District, Monterey Bay Unified Air Pollution Control District and Lawrence Livermore National Laboratory to the Air Resources Board;

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

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

Proposal Number 1187-98 (R) entitled "Pollutant Transport Study: Bay Area to North Central Coast Air Basin", submitted jointly by the Bay Area Air Quality Management District, Monterey Bay Unified Air Pollution Control District and Lawrence Livermore National Laboratory for a total amount not to exceed \$150,000; and

WHEREAS, THE Governor's Executive Order D-18-83 prohibits State agencies from awarding research contracts through October 31, 1983;

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 1187-98 (R) entitled "Pollutant Transport Study: Bay Area to North Central Coast Air Basin", submitted jointly by the Bay Area Air Quality Management District, Monterey Bay Unified Air Pollution Control District and Lawrence Livermore National Laboratory for a total amount not to exceed \$150,000; and

BE IT FURTHER RESOLVED, that, should an exemption from the prohibition contained in Executive Order D-18-83 on awarding contracts for research be granted, the Executive Officer is authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$150,000.

I certify that the above is a true and correct copy of Resolution 83-27 as adopted by the Air Resources Board.


Harold Holmes, Board Secretary

State of California
AIR RESOURCES BOARD

ITEM NO.: 83-12-6b2
DATE: August 26, 1983

- ITEM: Research Proposal No. 1187-98 (R) entitled "Pollutant Transport Study: Bay Area to North Central Coast Air Basin".
- RECOMMENDATION: Adopt Resolution 83-27 approving Research Proposal No. 1187-98 (R) for funding in an amount not to exceed \$150,000. Approval is contingent upon receiving supplemental funding from another source(s) in the amount of \$75,000. Allocations of funds will be \$75,000 from FY 1983-84 budget and \$75,000 from FY 1984-85 budget contingent upon the Governor's approval of the 1984-85 budget proposal.
- SUMMARY: The ARB sponsored a tracer study during 1980 to quantify transport from the Bay Area Air Pollution Control District into the Monterey Bay Unified Air Pollution Control District. This study clearly demonstrated that ozone concentrations above the Federal Standard (12 pphm) in the North Central Coast Air Basin are generally observed only during conditions which allow transport from the San Francisco Bay Area.
- This project would use the aerometric data base collected during the ARB field study to perform air quality modeling computer simulations of proposed control strategies for this region.
- This study is needed to determine how transport affects ozone levels throughout the North Central Coast Air Basin and the Bay Area Air Quality Management District under varying 1987 control strategies such as hydrocarbon only and combinations of oxides of nitrogen and hydrocarbon controls. Results will be incorporated into the air quality attainment plans of both districts.