

VOC Regulations and Implications to IPM

Rick Roush

UC Statewide IPM Program



Air Quality Issues in California

- **Dust: Particulate Matter, PM_{10} & $PM_{2.5}$**
- **Volatile Organic Compounds (VOC) and nitrogen oxides (NO_x) react with sunlight to form ozone**
- **Many fumigants and pesticide inert ingredients are VOCs**

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ERIN KENNEDY

30 years of talk hasn't cleared air

Nearly 100 people packed the San Joaquin Valley Air Pollution Control Board's Wednesday public hearing to talk about dust and how to reduce it before the federal government pressures us any more. They talked so much that the meeting was held over to today to give board members a chance to talk some more, maybe even delay the decision a few weeks.

Most talk, more delays. More kids missing school and chugging inhalers. More senior breathers. What's left to talk about?

Just ask Bruce Morris. He sat on the committee that came out with the Valley's first air-quality study 30 years ago. He talked at the Wednesday's meeting and gave everybody a tongue-battering. "Why haven't industry and agriculture sat down and worked out a solution yet?" he asked.

Why indeed? With harsh federal penalties looming and a two-month deadline staring the board in the face to enact dust regulations, industry and agriculture were touting their just-launched study on the worst causes of particulate matter in their businesses. What took so long?

No one said anything surprising — except maybe when farmers asked the board to take

LATE FINAL EDITION

The key to finding the right couch is a little bit of patience and a clear sofa goal. **HAGREE**

Board takes up dust rule today

Session added to OK nine changes and prepare for approval.

By MARK GROSS
AND BARBARA ANDERSON
THE FRESNO BEE

The San Joaquin Valley's dust rule — already four years late — has hit a fast track, with the local air board adding a session this afternoon to accept a flurry of changes and prepare for approval in two weeks.

The San Joaquin Valley Air Pollution Control District board heard five hours of comment Wednesday, including conflicting advice from industry groups and community representatives. Industries said slow down to make the rule reasonable; environmentalists said move ahead to make the Valley safe.

Bulldogs Charles this w



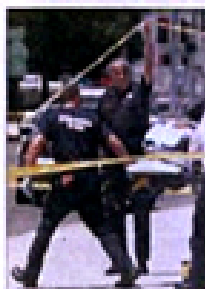
in front of Fresno City Hall after the car smashed into the hall doors, police

at a woman who
gh downtown.

dove into the doors and then struck an officer's motorcycle. Police siren and gunshots prompted dozens of people to spill out of downtown Merceda Mall office buildings. They stared in disbelief as police closed P Street and sidewalks attended to LaCetra. Several City Hall employees and went home early.

not delayed and diverted a man scheduled to announce Jerry Dyre's to police chief. It was held at Fresno police headquarters rather City Hall.

Please see B007 Page A3



Rene Marie LaCetra, 45, who was driving Wednesday, is carted away before City Center. She was reported in serious

EPA wants Valley farmers to seek air pollution permits

By MARK GROSS
THE FRESNO BEE

A dispute filled with potential controversy. The U.S. Environmental Protection Agency is expected this week to reject a long-standing exemption allowing San Joaquin Valley farmers without air pollution permits.

The move may someday trigger a confrontation between the EPA and the state, which excludes farming from regulation by local air pollution districts.

The EPA rejection is expected to appear this week in a Federal Register notice, yet the agency also will announce "limited" approval of the San Joaquin Valley Air Pollution Control District rule that contains the exemption.

The agency says the rule will strengthen the district overall, but the farm exemption isn't acceptable. Similarly, the EPA will approve another rule but disapprove some technical parts of it. Please see POLLUTION, Page A2

JOHN CROOKER/BEA

LATE FINAL EDITION

Levy case revived as Rep. Gary Condit is issued a subpoena by a grand jury. **PAGE A4**

Air board approves dust rule for Valley

Critics, though, say they were left out of talks on the long-debated issue.

By MARK GROSS
AND BARBARA ANDERSON
THE FRESNO BEE

Federal officials and farmers the month privately reached broad agreement on a controversial dust regulation, clearing the way Thursday for local air district approval of the rule and an end to years of debate.

But Thursday's decision didn't come without criticism. The groups left out of the recent federal talks objected to the San Joaquin Valley Air Pollution Control District board. Construction industry spokesman Bill Sparks said the compromise was a surprise.

"This thing is just about as clear as mud to me," said Sparks, representing the Building Industry Coalition. "The



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AIR QUALITY

EPA sued for delay in Valley

Agency is failing to protect the public, groups allege.

By MARK GROSS
THE FRESNO BEE

Community, medical and environmental groups sued the federal government Thursday over the San Joaquin Valley's air, alleging years of cleanup delays as one of the nation's most polluted air basins.

"There is no region in California where the U.S. Environmental Protection Agency has more abandoned its statutory duty to protect the breathing public than in the [Valley]," the introduction of the complaint says.

The lawsuit, filed in U.S. District Court in San Francisco by the environmental legal firm Earthjustice, says the EPA failed to make major decisions to accept or reject local cleanup plans dating back as far as 1994.

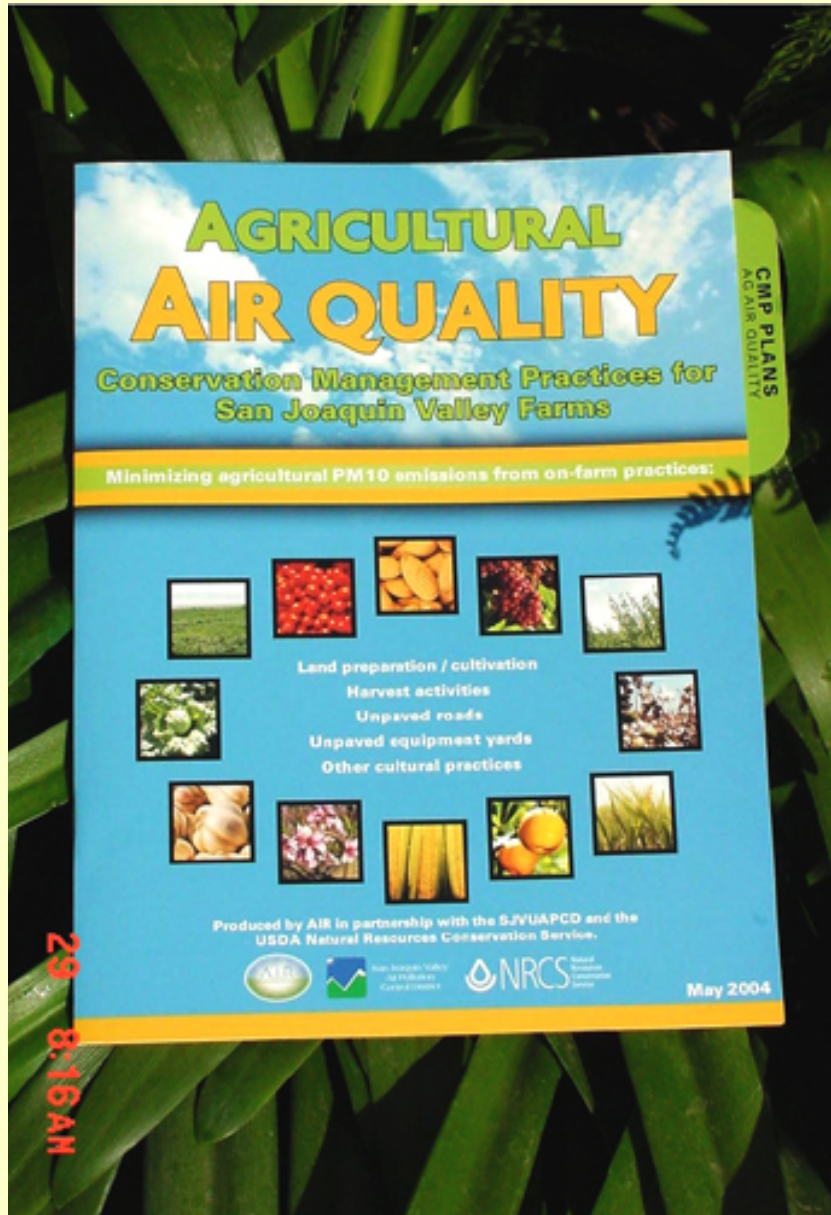
Environmental lawyers also seek to end an exemption for ozone rules, granted to industries, power and oil companies, west of Interstate 5 in Kern, Kings and Fresno counties.

EPA officials agreed they have been late in dealing with a particulate matter, or dust and soot, plan submitted by the San Joaquin Valley Air Pollution Control District in 1997. EPA will move ahead with the plan, officials said, but the timetable is uncertain because the issue will be in court.

"Earthjustice is right," said Deborah Jordan, spokeswoman for the Building Industry Coalition. "The

Air board

CONSERVATION MANAGEMENT PRACTICES (CMP)



FARMERS DO THEIR SHARE TO CLEAN THE AIR



*America's Private Lands
Conservation Agency*

NO TILL FARMING

WWW.SICRCD.ORG



**SAN JOAQUIN COUNTY
RESOURCE**
CONSERVATION DISTRICT

Ozone & 1994 SIP Requirements

- **VOCs from pesticide applications contribute to ozone (EC, fumigants)**
- **Ozone regulated under State Implementation Plan (SIP) due to Clean Air Act**
- **If SIP requirements are not met by deadlines:**
 - **Federal Implementation Plan (FIP) imposed**
 - **Loss of federal highway funds**



DESIGNATION

Attainment

Unclassifiable /
Attainment

Nonattainment Classification

- Extreme - 20 years
- Severe - 17 years
- Severe - 15 years
- Serious - 9 years
- Moderate - 6 years
- Marginal - 3 years
- Transitional **

Sources: 40 CFR 81
SEC. 303 (AZ), 305 (CA)***,
312 (HI), 329 (NV), 352 (Amer. Samoa)****, 353 (Guam)
and 354 (N. Mariana Is.)**** (JUL 1 03).
***San Diego: FR V68 P37976 (JUN 26 03);
***Santa Barbara: FR V68 P40789 (JUL 9 03);
***San Joaquin Valley: FR V69 P20550 (APR 16 04);
***East Kern: FR V69 P21731 (APR 22 04).
Notes: * San Francisco Bay Area is designated
'Not Classified / Moderate' under 23 U.S.C.
Sec. 104(b)(2) and has a 2006 attainment deadline
** Clean Air Act Section 185A Area
**** American Samoa and Northern Mariana Islands
(not shown on map) are designated 'Unclassifiable/Attainment'



REGION IX

NATIONAL AMBIENT AIR QUALITY STANDARDS

ATTAINMENT DESIGNATIONS

FOR

OZONE

1-HOUR STANDARD

CALIFORNIA

NEVADA

ARIZONA

HAWAII

GUAM

50 0 50 100 150 200 Miles

June 21, 2004

Chico

Yuba City

Reno

Sacramento
Metro

San
Francisco
Bay
Area

San

Joaquin

Valley

Southeast Desert
Modified AQMA

Ventura

South Coast

Imperial

Phoenix

VOCs: Difficulty in Achieving Ozone Standard

About 30% VOC reduction of all sources needed to achieve 1-hour ozone standard in SJ Valley

Category	% of 2004 Emissions
LIVESTOCK WASTE (DAIRY CATTLE)	9.6
LIGHT AND MEDIUM DUTY TRUCKS	9.1
LIGHT DUTY PASSENGER CARS	8.3
PRESCRIBED BURNING	7.5
OIL AND GAS PRODUCTION	7.4
PESTICIDES	6.3
CONSUMER PRODUCTS	6.2

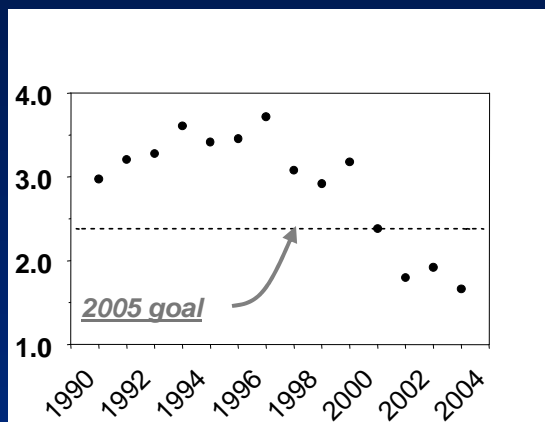
VOC Calculations

- VOC emission from a pesticide product
= emission potential x amount of product
- Amount of product determined from
pesticide use reports (PUR)
- May 1 – Oct 1 (peak ozone period)
for each year

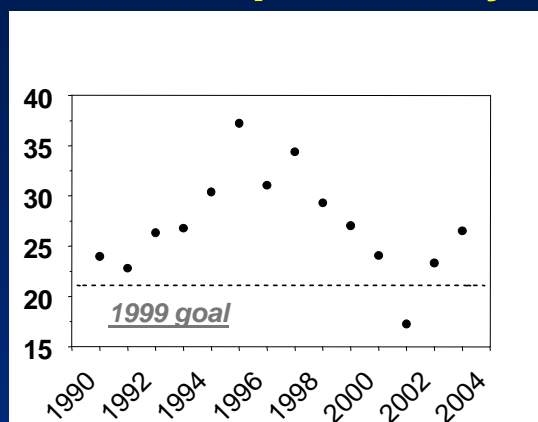
1990-2003 May-October Pesticide VOC Emissions

Sac Metro Area

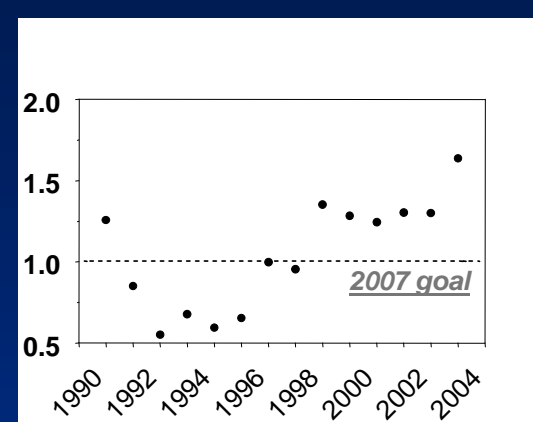
emissions (tons/day)



San Joaquin Valley

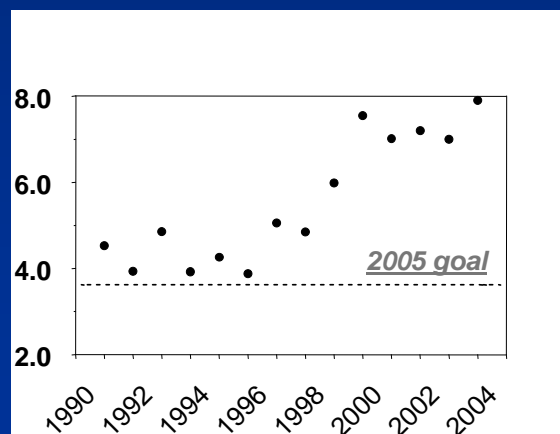


Southeast Desert

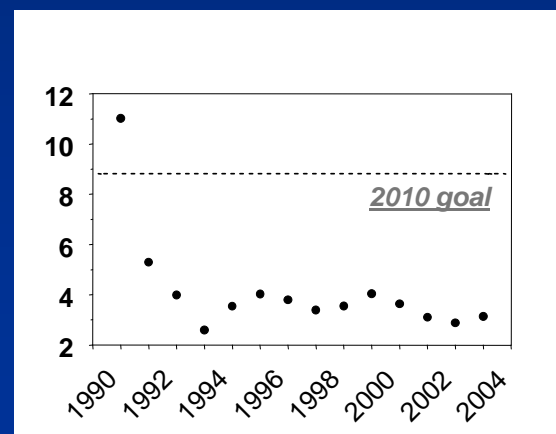


Ventura

emissions (tons/day)



South Coast



1994 SIP Requirements

- **Pesticide VOC emissions must be reduced by the following amounts of the 1990 base year:**
 - **Southeast Desert: 20% by 2007**
 - **Ventura: 20% by 2005**
 - **San Joaquin Valley: 12% by 1999**
- 30% more to meet new 8 hr standard!**

DPR and ARB Sued: Regulatory Actions

- **DPR has begun to investigate reformulation of liquid products**
 - **Establish a VOC emissions limit (20% emissions potential (EP)?)**
 - **Primarily emulsifiable concentrates**
- **Could affect hundreds of products**

The VOC Issue: Focus on SJV

In SJV, about 50% of VOCs from fumigation

27% from metam sodium

14% Telone

- 40% from EC formulations of pesticides
(e.g., Lorsban, 9%)**
- Southeast Deserts & Ventura >75% fumigant**

SJV Top Contributors by Crop

- **About 18% carrots (fumigation)**
- **13% cotton (e.g., Lorsban, an EC)**
- **10% almonds (EC and fumigants)**
- **5% Grapes (EC, giberrellins, fumigants)**
- **5% Citrus (EC, giberrellins)**
- **5% Potatoes (fumigants)**

What is UC doing about it?

- **Reductions in uses of EC & emission potentials of ECs wherever possible (gibberellins in citrus?)**

Change timing of fumigant applications?

- **Reduce dependence on fumigants, e.g.,**
 - **strawberries (Ventura, SE desert)**
 - **carrots (SJV, SE desert)**

Carrots

- **Fumigation for control of nematodes, diseases**
 - Few alternative controls,**
 - Need sampling for when fumigation is needed (esp., diseases)**
 - Contain the fumigants better (water seals)**

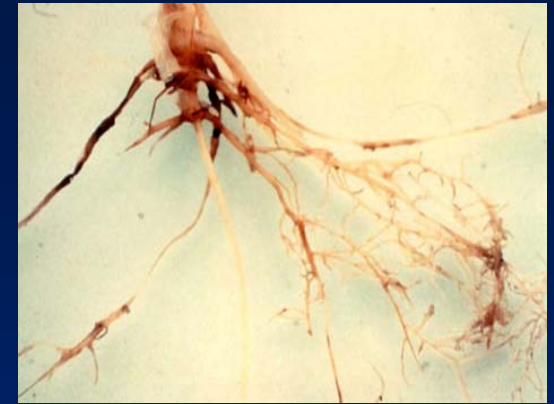
Nematodes: Host Plant Resistance

**Imperator 58
(Susceptible)**



**8524B
(Resistant)**

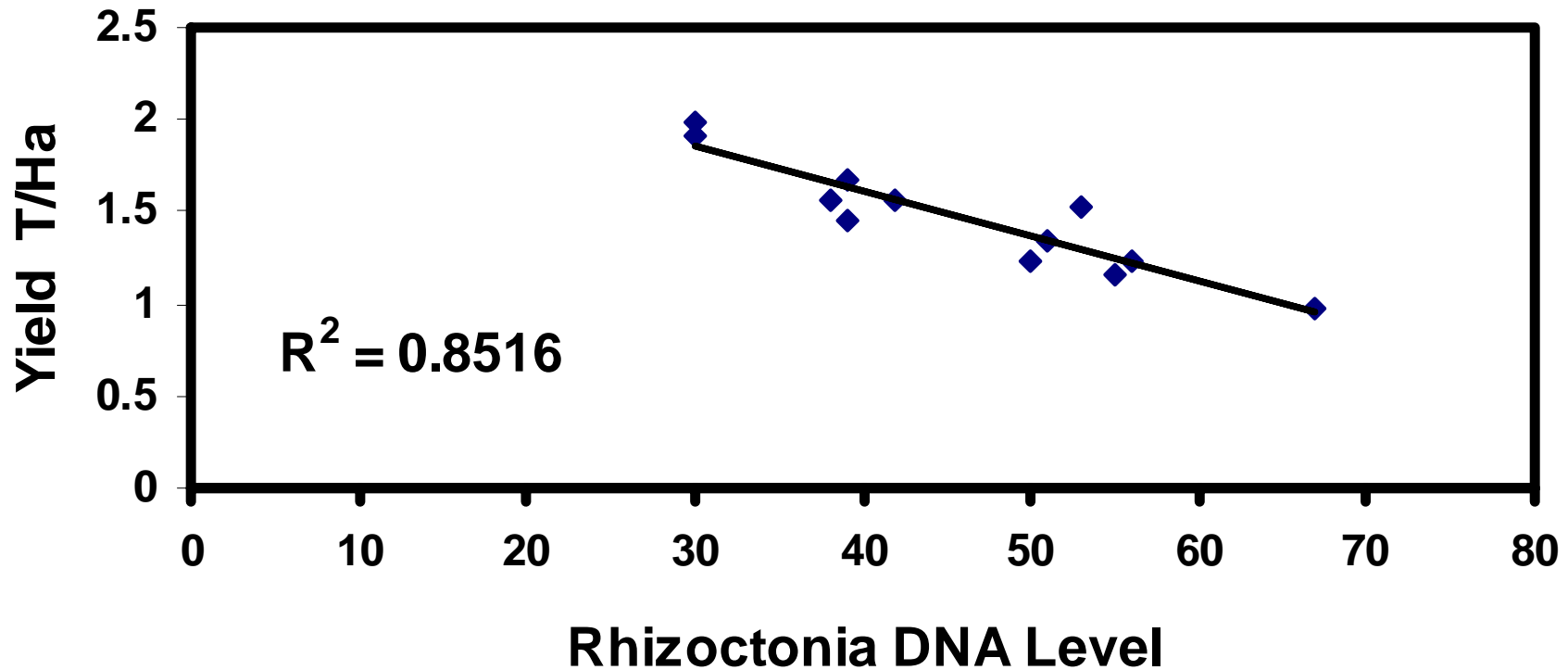
Photo by J. Nunez



Quantitative detection of soil-borne plant pathogens by DNA sampling



Yield response to Rhizoctonia



Relevance to the Rest of US

**--Role of IPM in addressing air
quality**

**--Reformulation driven by
California Dept of Pesticide
Regulation?**