California Environmental Protection Agency
Department of Pesticide Regulation

# Pesticide Air Monitoring Network

May 20, 2010

Pesticide Registration and Evaluation Committee

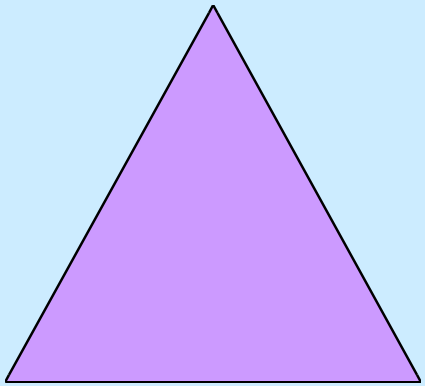
Email during meeting: preccomments@cdpr.ca.gov

# Objectives

- Identify common pesticides in air and determine seasonal, annual, and multiple-year concentrations
- Compare concentrations to subchronic and chronic health screening levels
- Track trends in air concentrations over time
- Estimate cumulative exposure to multiple pesticides with common modes of action
- Attempt to correlate concentrations with use and weather patterns

# Key technical issues

How many samples?
How often should we sample?



Which communities should we monitor?

Which pesticides should we monitor?

# How many samples – sampling plan

- DPR conducted 1-year monitoring study in Parlier
- Based on analysis of Parlier data
  - One monitoring location in each community
  - **One** 24-hour sample collected each week

# Pesticide selection criteria

- Evaluated top 100 pesticides used in 5 high-use areas, except inorganics, oils, antimicrobials
- Prioritized pesticides based on
  - Use: indicator of exposure, rated 0 – 4
  - Volatility: indicator of exposure, rated 1 – 4
  - DPR risk assessment priority: indicator of toxicity, rated 1 – 4
  - Total rating 2 – 12
  - Feasibility of including several pesticides in single method

# Pesticides included

- Monitoring Method 1 (Modified Parlier Method): Revise Parlier method to include 21 – 26 pesticides
- Monitoring Method 2 (VOC Method): 4 pesticides included in volatile organic compound method
- Monitoring methods that detect a single pesticide
  - **Methyl isothiocyanate (MITC)**
  - **Chloropicrin**

# Community selection criteria

- Use of 34 proposed pesticides
  - Community zone
  - Local zone (1 mile)
  - Regional zone (5 miles)
- Population characteristics
  - Children
  - Seniors
  - Disabled
  - Farming, etc. employees
- Other
  - Suitable monitoring site available
  - Complementary monitoring, related studies
  - Geographic distribution of communities

# Communities with the highest use ratings of 34 proposed pesticides

| Communities | County | Rating |
|---|---|---|
| Linden, Ripon, Salida, Escalon, Manteca, Del Rio, Riverdale Park, Lathrop, Modesto, **Stockton**, Hickman | San Joaquin Stanislaus | 3.23-2.71 |
| Shafter, Wasco, Arvin, Rosedale, Mettler | Kern | 3.01-2.77 |
| **Greenfield**, Soledad, **Salinas**, **Gonzales**, King City, **Castroville** | Monterey | 2.96-2.62 |
| ~~Patterson, Westley~~ | Stanislaus | 2.93 |
| Camarillo, **Oxnard** | Ventura | 2.89-2.86 |
| Cantua Creek, **Huron**, **Mendota** | Fresno | 2.85-2.71 |
| Reedley, **Parlier** | Fresno | 2.77-2.62 |

# 3 communities selected

- **Ripon** selected over Linden due to higher use of 1,3-D and greater number of pesticides with increasing use.
- **Shafter** selected over Wasco due to higher use of organophosphates and air station.
- **Salinas** selected over Greenfield and Castroville due to Castroville's proximity to the coast and Greenfield's lower use of fumigants. Salinas has two air stations.

# Candidate communities

# Other community considerations

- The 3 communities provide good geographic distribution
- The 3 communities have relatively high use for most selected pesticides
- Monitor each community for at least **2 years**, then consider moving to other communities
- Depending on the resources needed, DPR may expand air network in later years to include more frequent sampling, or more pesticides, or more communities

# Next steps

- Prepare protocol: summer 2010
  - Review by PREC
  - Public comment
- Begin sampling: Jan 2010?
- Report first results: summer 2011?  Compare to PUR?

# Questions and additional information

- Lead staff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- DPR web site: www.cdpr.ca.gov
  - Select “Air” under Quick Finder
  - Select “Air Monitoring Network”