



# **On Farm Innovation: Identifying Farmer Innovations of Low Risk Pest Management Using PUR**

---

**USEPA Region 9 Grant 2002 - 2003**

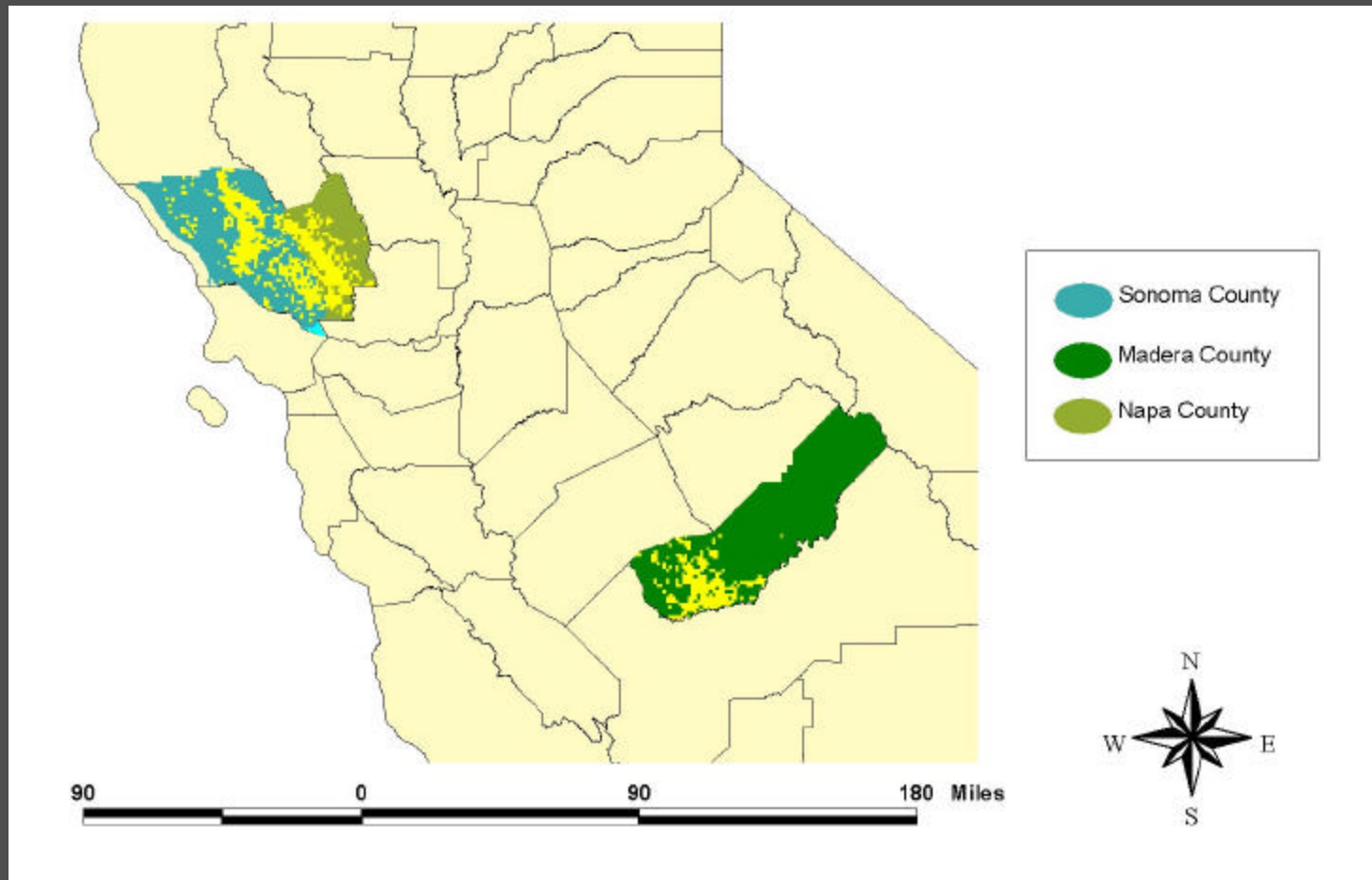
Jennifer Campos and Minghua Zhang  
Agricultural Geographic Information System Laboratory  
University of California, Davis

# Objectives

1. Characterize Food Quality Protection Act (FQPA) Pesticide Use Trends in Winegrapes and Walnuts
2. Differentiate grower level PUR profiles to distinguish reduced risk pest management
3. Validate grower pest management practices
4. Share results to strengthen farmer-to-farmer knowledge exchange



# Study Sites: Napa, Sonoma, and Madera Counties



# Measures

Total pounds chemical used

 By Active Ingredient (A.I.)

Pounds A.I. applied per acre  
planted

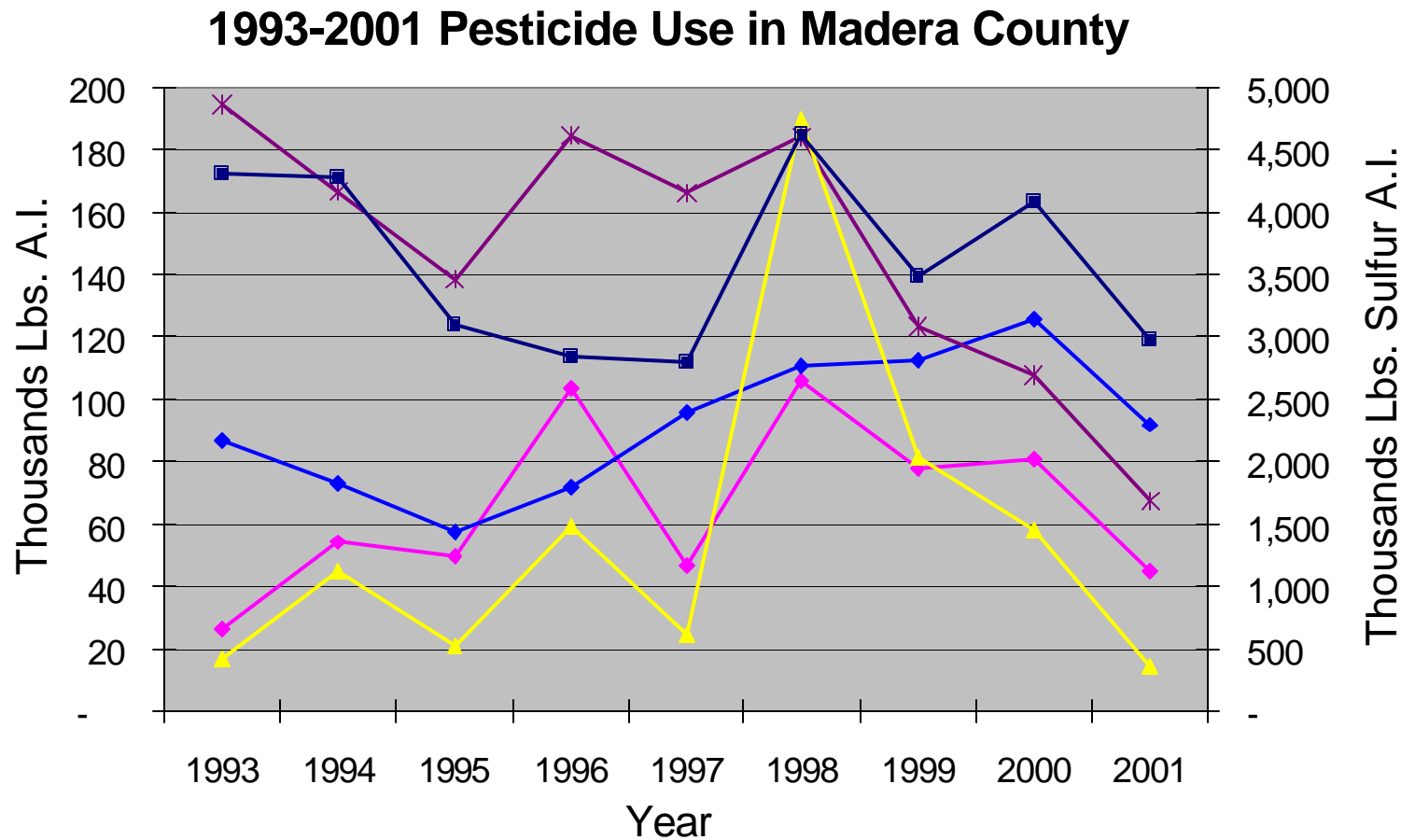
 Use intensity

Pounds A.I. applied per acre  
treated

 Use rate

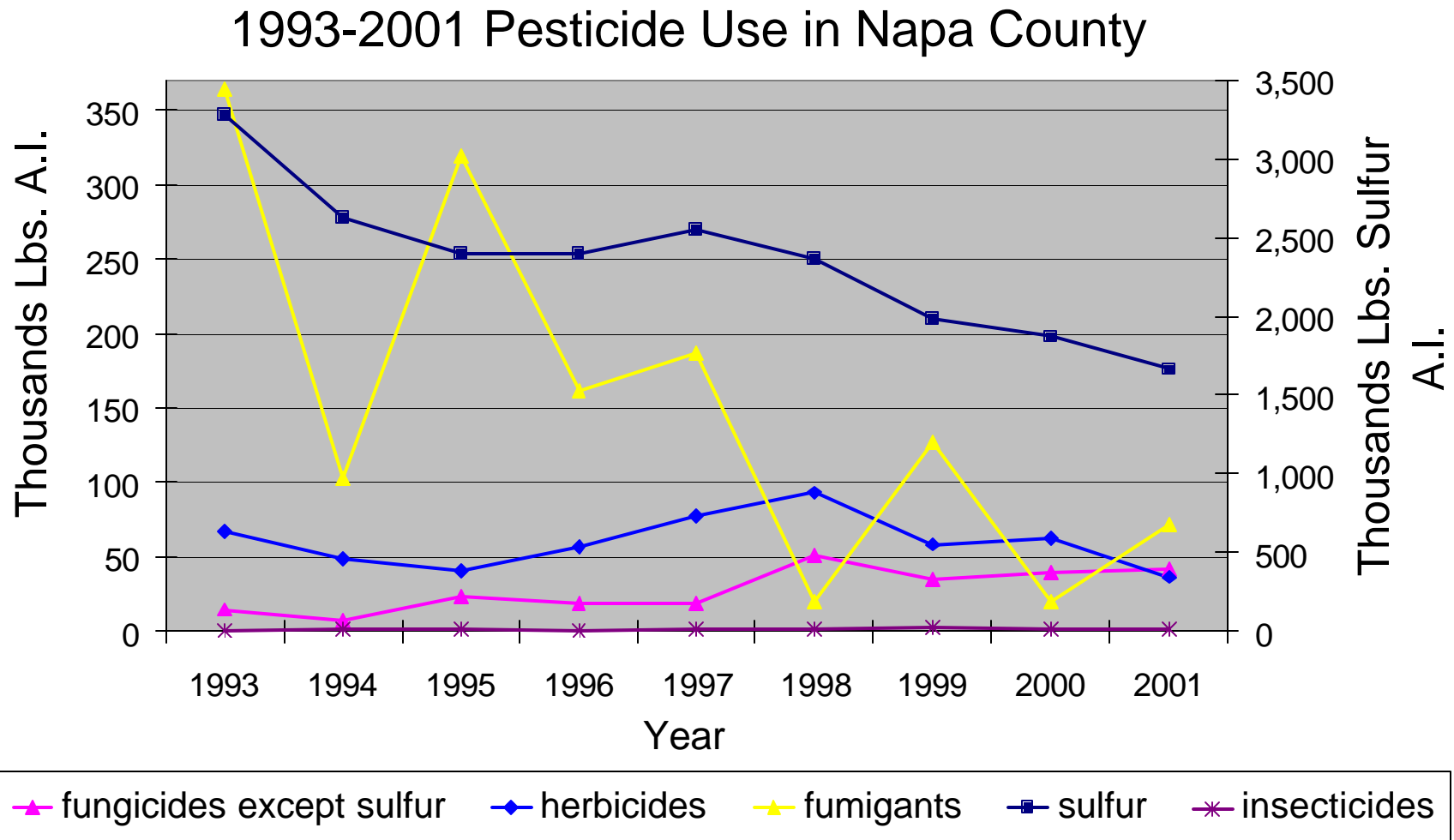


# Pesticide Use in Madera County by A.I. Type 1993 - 2001



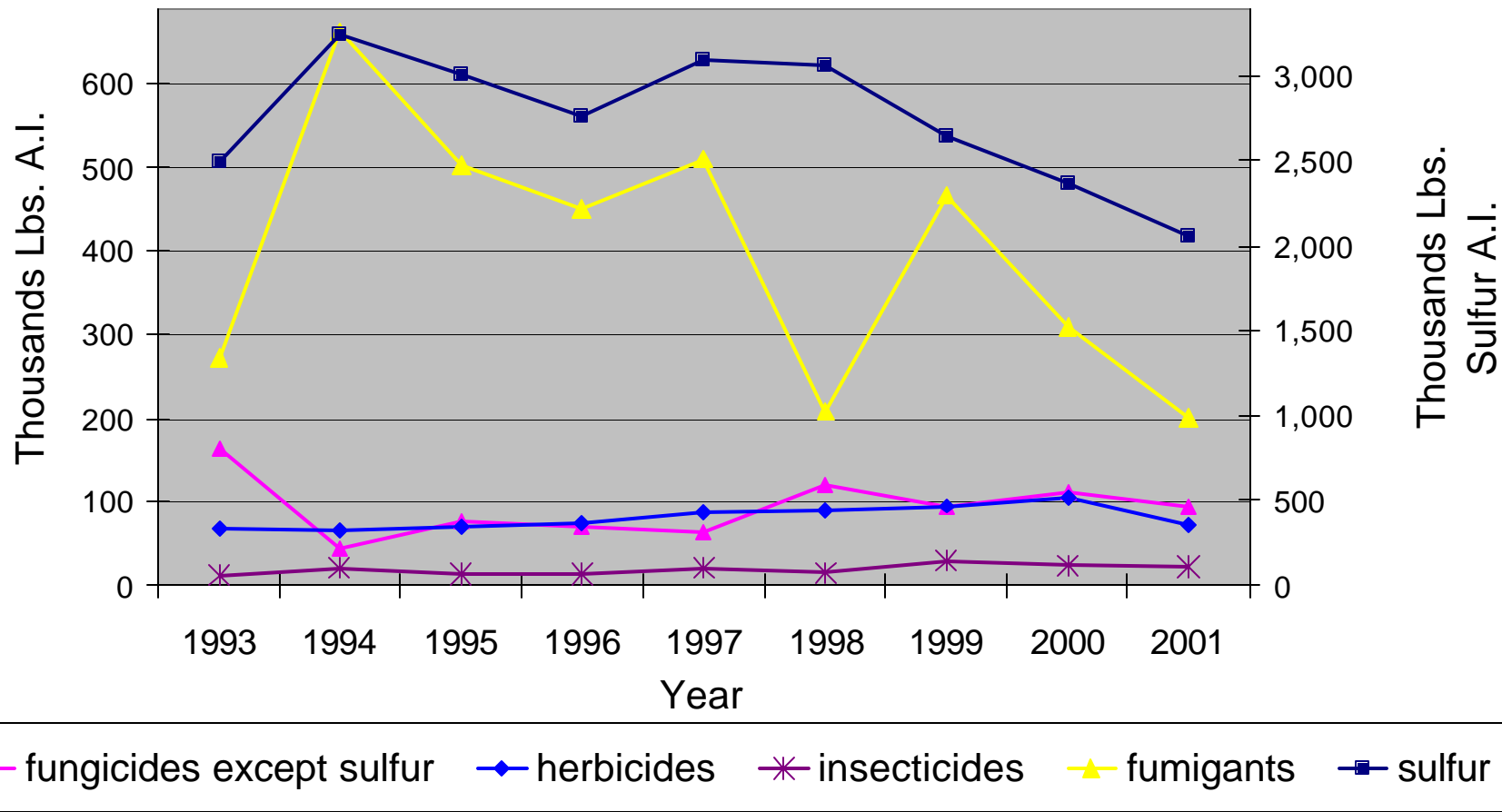
◆ fungicides except sulfur    ◆ herbicides    ✱ insecticides    ▲ fumigants    ■ sulfur

# Pesticide Use in Napa County by A.I. Type 1993 - 2001



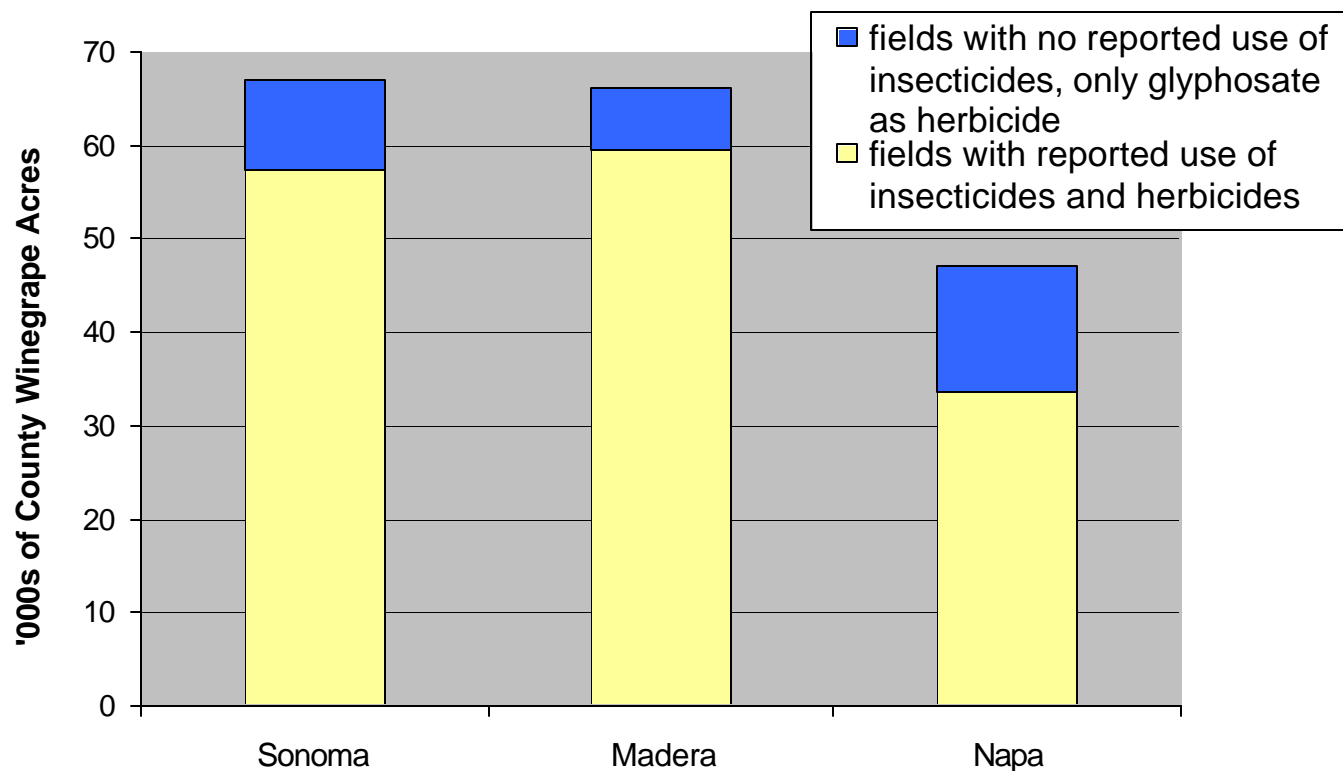
# Pesticide Use in Sonoma County by A.I. Type 1993 - 2001

1993-2001 Pesticide Use in Sonoma County



# Winegrape Acreage in three Counties with no Insecticide Use and only Glyphosate used as Herbicide

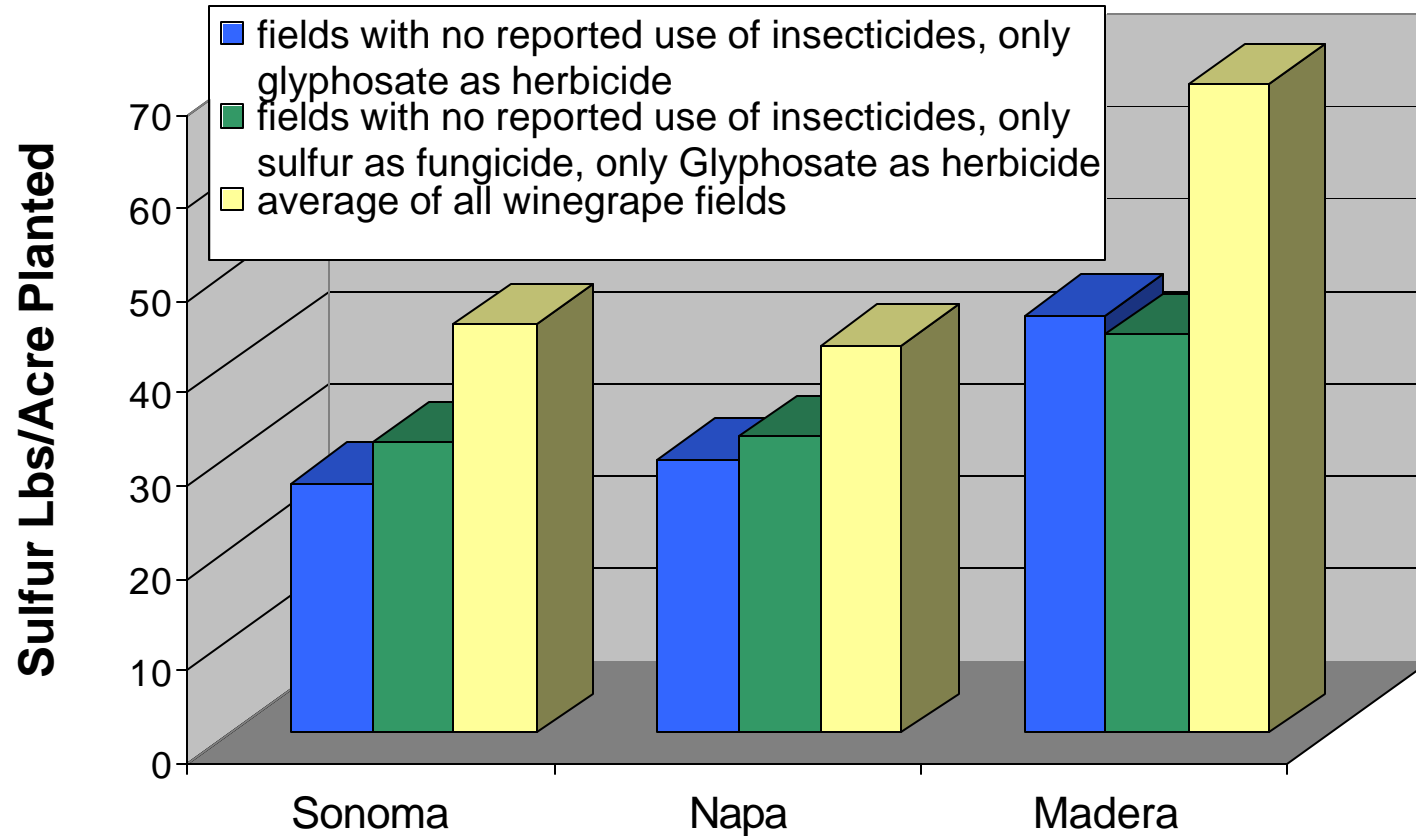
**Winegrape Acreage under Variable Pesticide Management:  
Blue Represents Winegrape Acres with No Insecticide Use  
and Only Glyphosate as Herbicide**





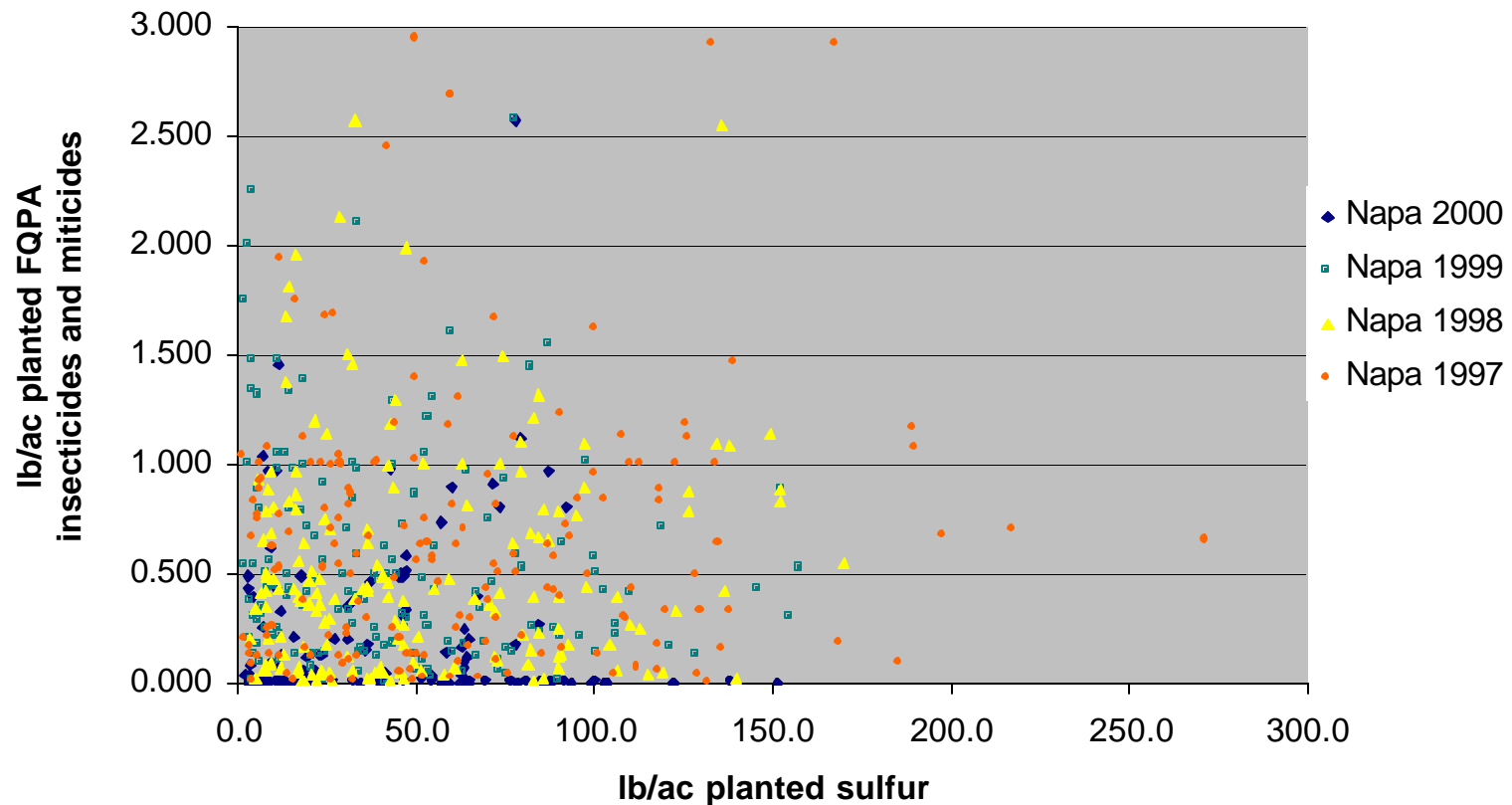
# Sulfur use intensity related to general pesticide management

## Rates of sulfur application as related to general pesticide management

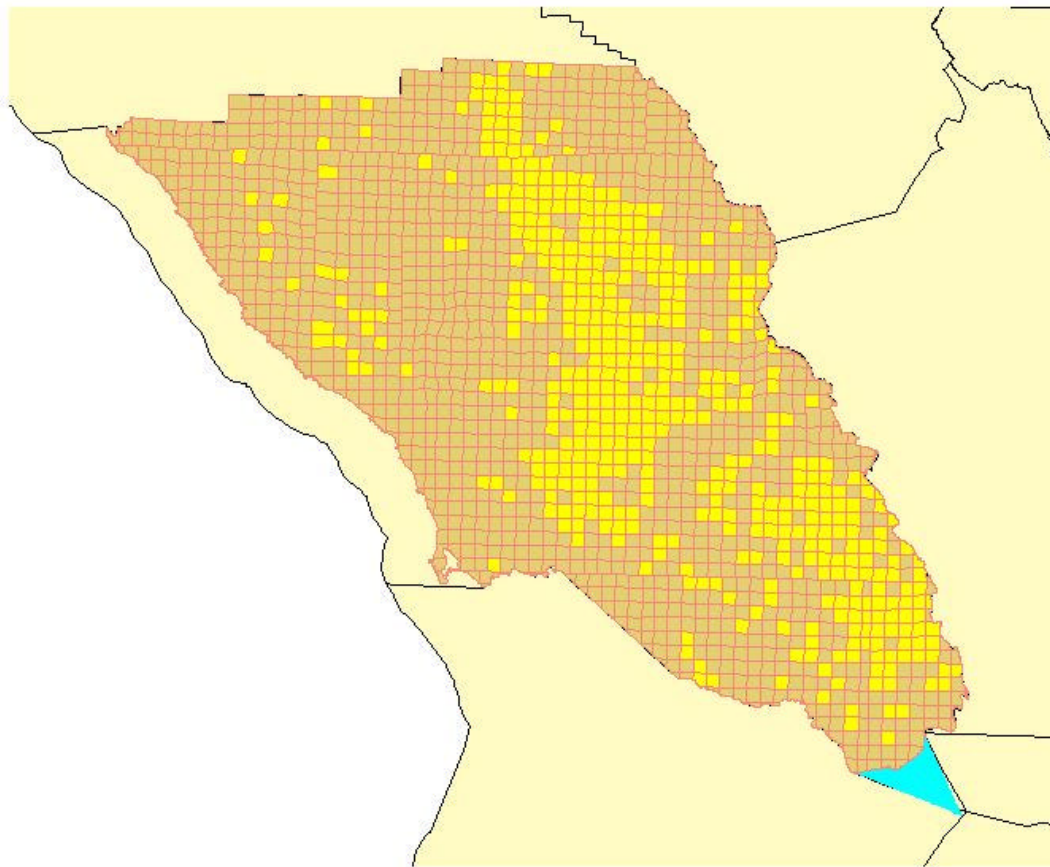


# Limitations of PUR analysis

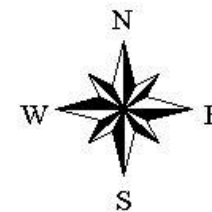
**Sulfur Use Intensity Related to Use of FQPA Insecticides and Miticides in Napa County Winegrapes**



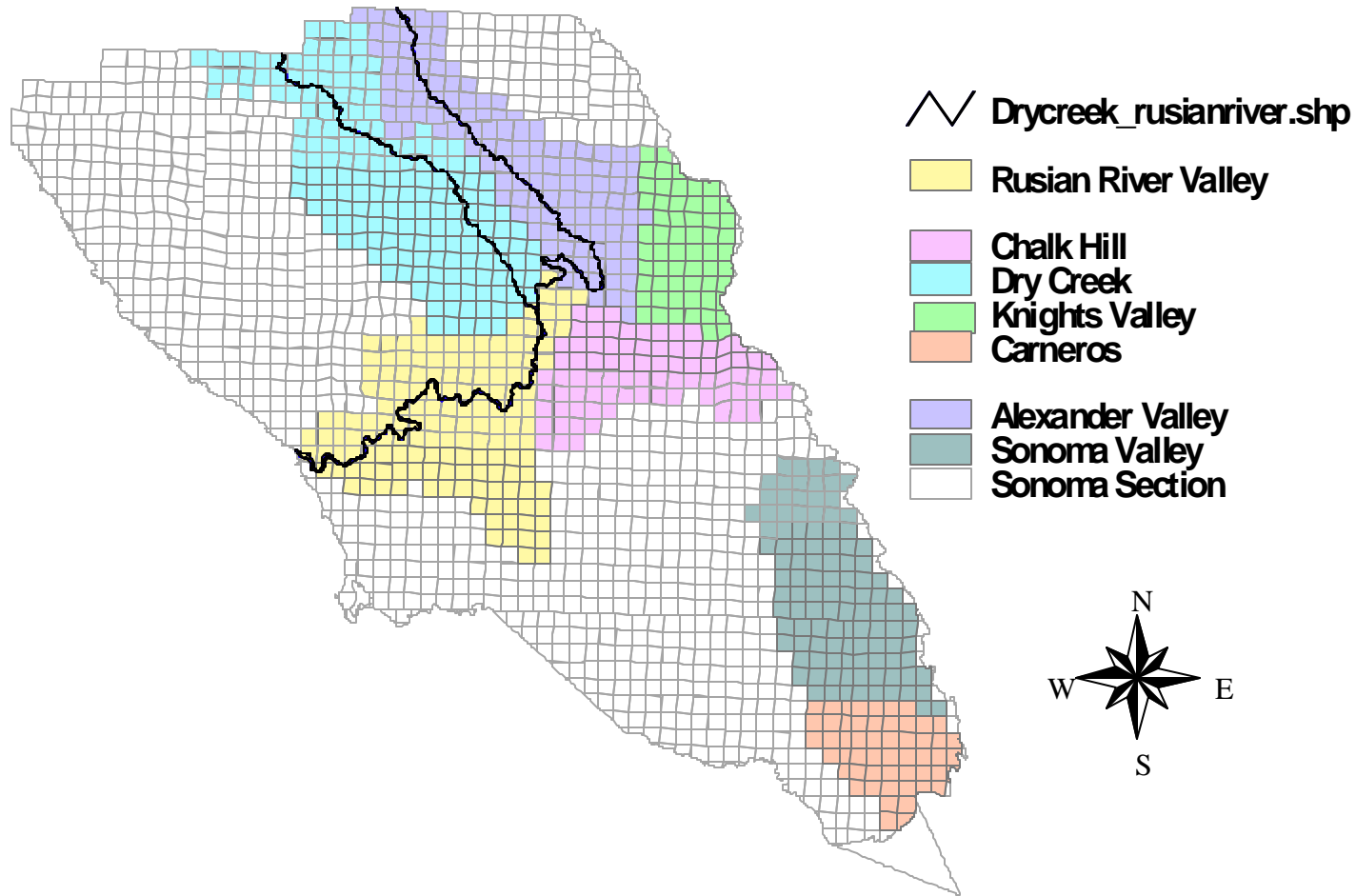
# Locations of Winegrape Pesticide Applications in Sonoma



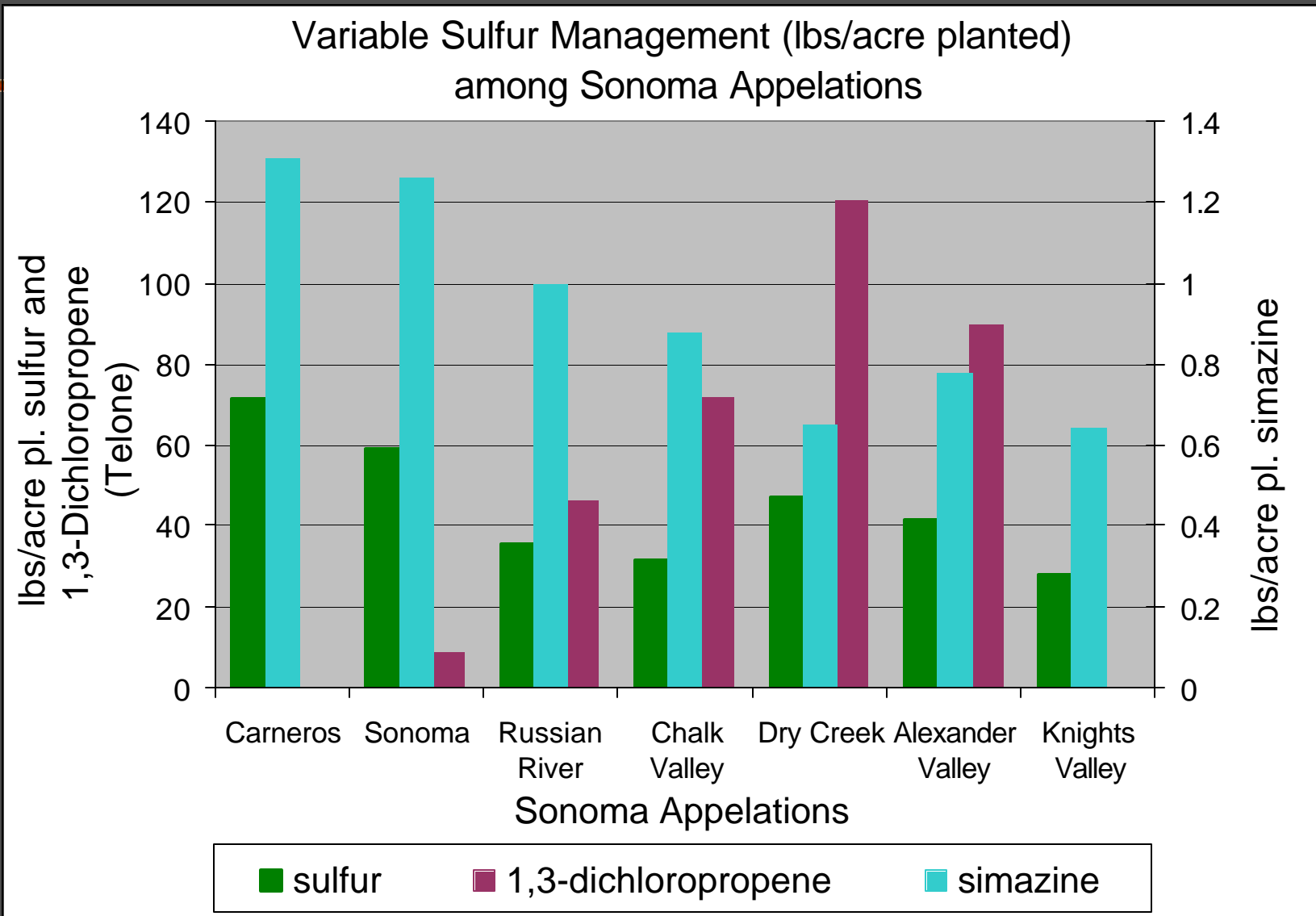
**PLSNET - Sonoma**  
■ Section  
■ Water Body  
■ County Boundaries



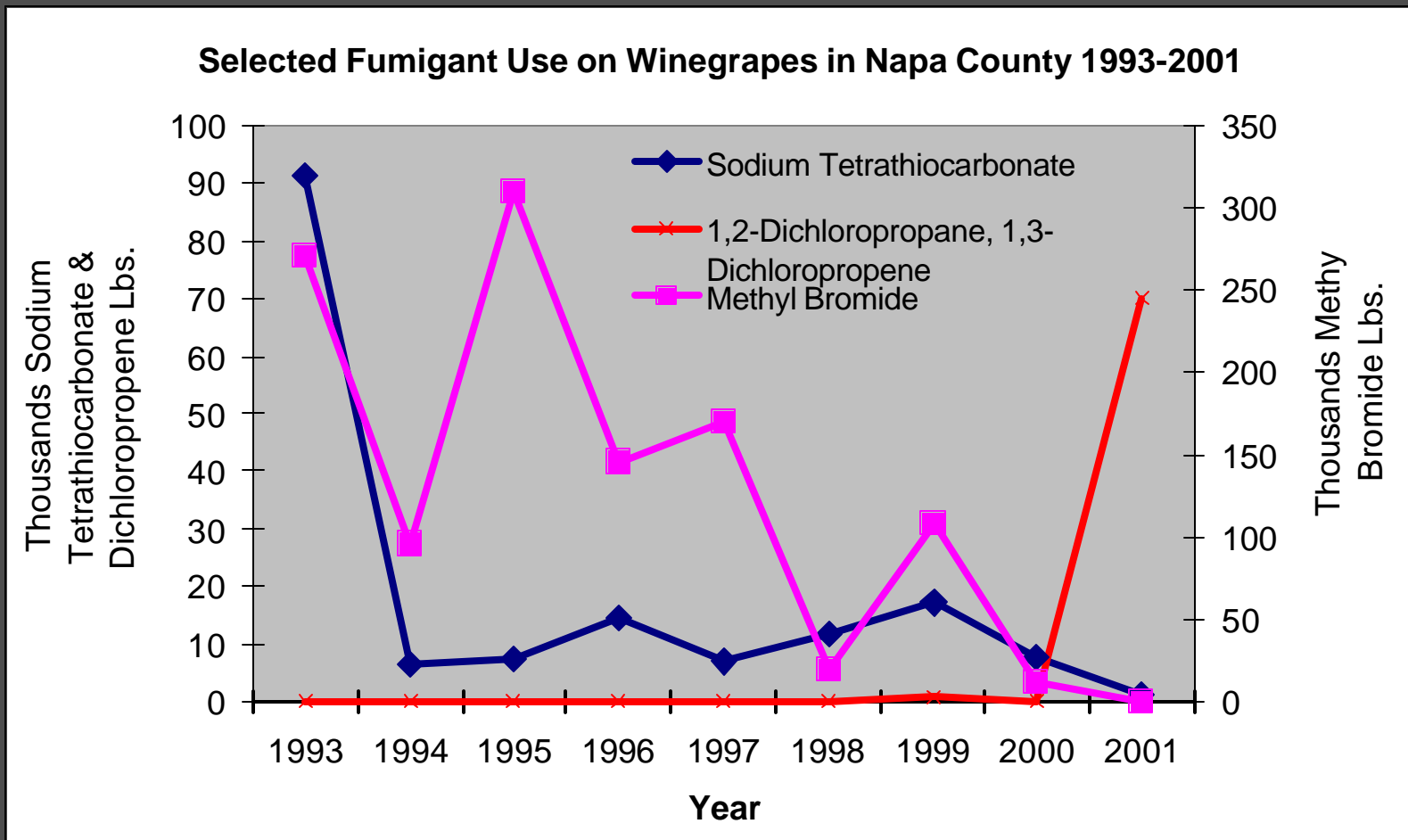
# Sonoma Winegrape Appellations



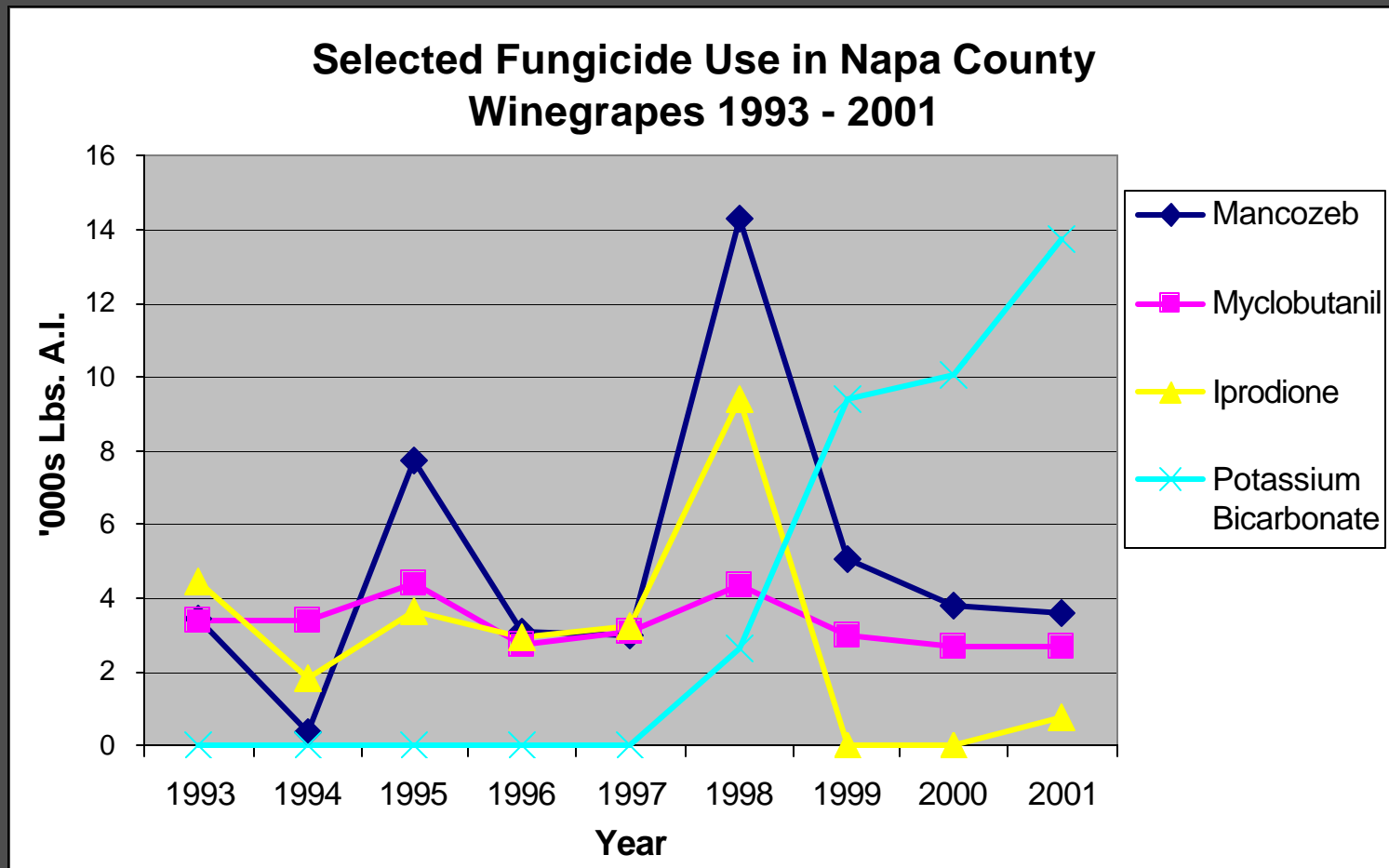
# Simazine, 1,3 - Dichloropropene (Telone), and Sulfur Use Variation among Sonoma Appellations



# Selected Fumigant Use Trends: Napa County 1993 - 2001

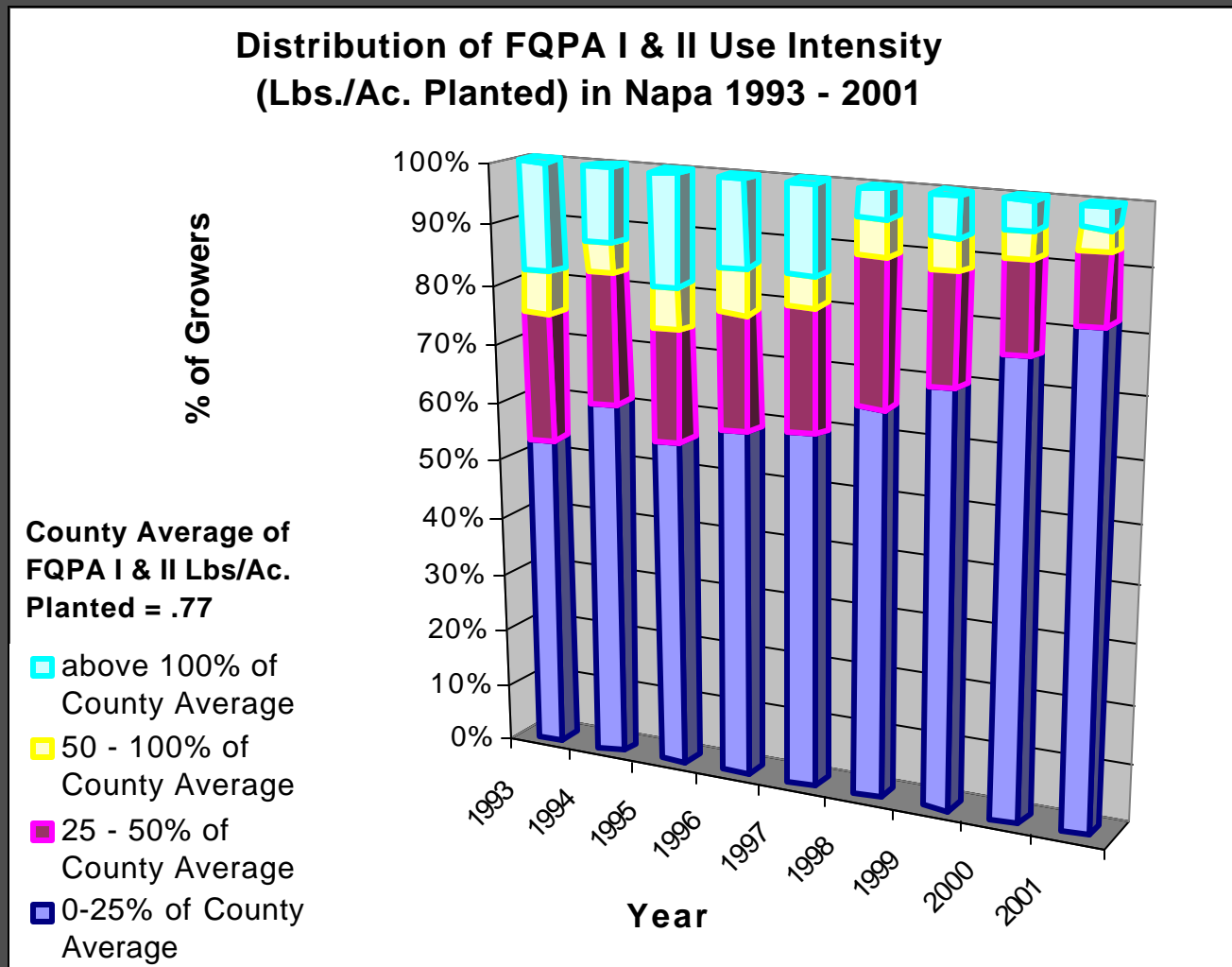


# Selected Fungicide Use Trends: Napa County 1993 - 2001



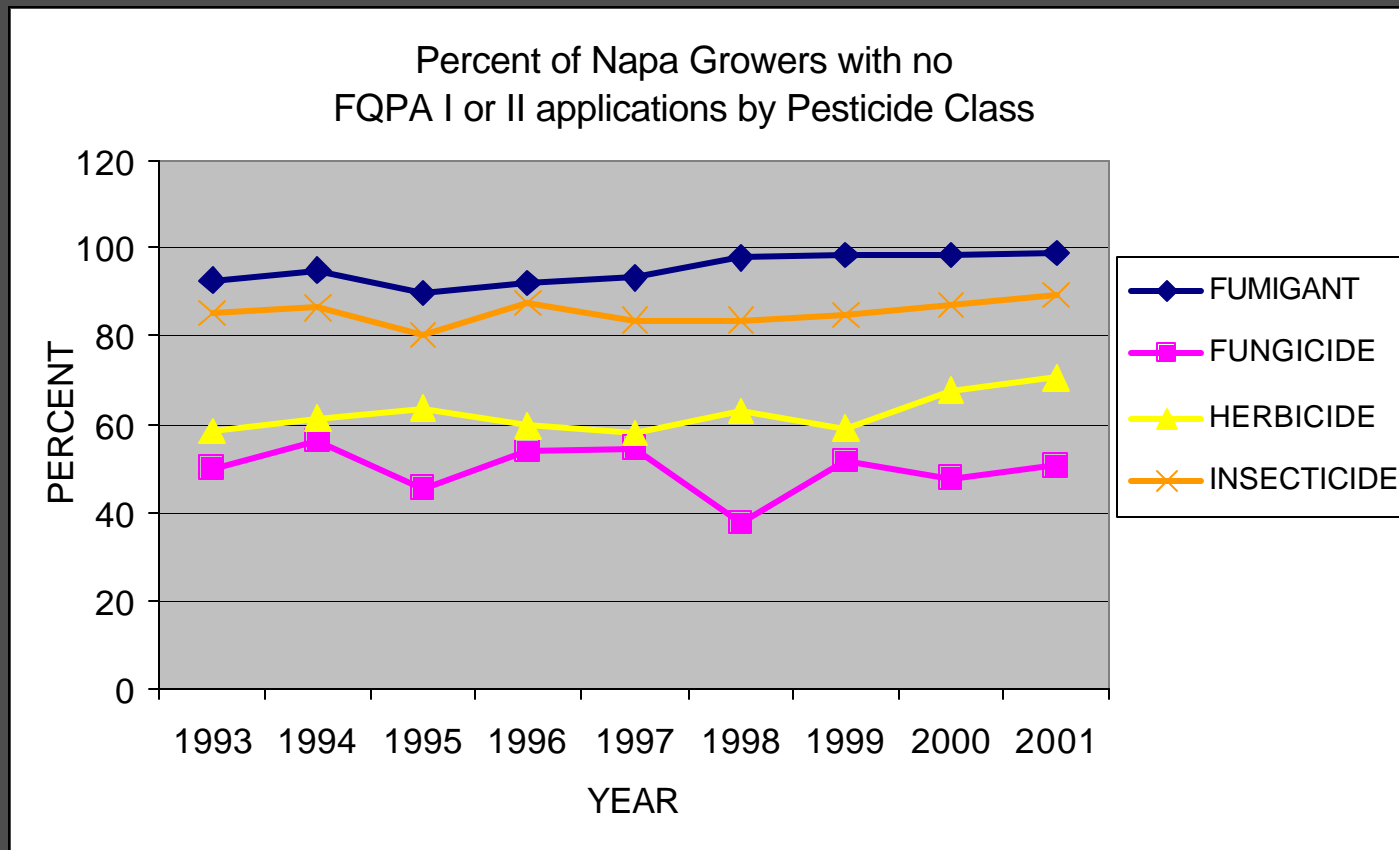
# Distribution of FQPA I & II Use Intensities in Napa 1993 – 2001

(based on average lbs./ac. planted for all years)





# Percent of Napa Growers with no FQPA I or II Applications



# What have we learned?

---

- ✍ PUR can be used to identify low-use growers and their pesticide management
  - ✍ PUR is effective in documenting pesticide use trends
  - ✍ PUR has limitations in analysis of pesticide use as it related to pest pressure
-

Questions?

