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

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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

1993-2001 Pesticide Use in Madera County

- fungicides except sulfur
- herbicides
- insecticides
- fumigants
- sulfur
Pesticide Use in Napa County by A.I. Type 1993 - 2001

1993-2001 Pesticide Use in Napa County

Thousands Lbs. A.I.

Thousands Lbs. Sulfur

0 50 100 150 200 250 300 350


fungicides except sulfur
herbicides
fumigants
sulfur
insecticides
Pesticide Use in Sonoma County by A.I. Type 1993 - 2001

1993-2001 Pesticide Use in Sonoma County

- fungicides except sulfur
- herbicides
- insecticides
- fumigants
- sulfur

Thousands Lbs. A.I.

Thousands Lbs. Sulfur A.I.

Year

Winegrape Acreage in three Counties with no Insecticide Use and only Glyphosate used as Herbicide
Sulfur use intensity related to general pesticide management

Rates of sulfur application as related to general pesticide management

- fields with no reported use of insecticides, only glyphosate as herbicide
- fields with no reported use of insecticides, only sulfur as fungicide, only Glyphosate as herbicide
- average of all winegrape fields
Limitations of PUR analysis

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

- Napa 2000
- Napa 1999
- Napa 1998
- Napa 1997
Locations of Winegrape Pesticide Applications in Sonoma
Simazine, 1,3 - Dichloropropene (Telone), and Sulfur Use Variation among Sonoma Appellations

Variable Sulfur Management (lbs/acre planted) among Sonoma Appelations

Sonoma Appelations

- Carneros
- Sonoma
- Russian River
- Chalk Valley
- Dry Creek
- Alexander Valley
- Knights Valley

- Sulfur
- 1,3-dichloropropene
- Simazine
Selected Fumigant Use Trends: Napa County 1993 - 2001

Selected Fumigant Use on Winegrapes in Napa County 1993-2001
Selected Fungicide Use Trends: Napa County 1993 - 2001

Selected Fungicide Use in Napa County Winegrapes 1993 - 2001

Year

'000s Lbs. A.I.

- Mancozeb
- Myclobutanil
- Iprodione
- Potassium Bicarbonate
Distribution of FQPA I & II Use Intensities in Napa 1993 – 2001
(based on average lbs./ac. planted for all years)

<table>
<thead>
<tr>
<th>Year</th>
<th>% of Growers</th>
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<tbody>
<tr>
<td>1993</td>
<td>50 - 100% of County Average</td>
</tr>
<tr>
<td>1994</td>
<td>25 - 50% of County Average</td>
</tr>
<tr>
<td>1995</td>
<td>0-25% of County Average</td>
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<td>1996</td>
<td>0-25% of County Average</td>
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<td>1999</td>
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</tr>
<tr>
<td>2000</td>
<td>0-25% of County Average</td>
</tr>
<tr>
<td>2001</td>
<td>0-25% of County Average</td>
</tr>
</tbody>
</table>

County Average of FQPA I & II Lbs/Ac. Planted = .77
Percent of Napa Growers with **no** FQPA I or II Applications

### Graph Details

- **Title**: Percent of Napa Growers with no FQPA I or II applications by Pesticide Class
- **Axes**:
  - **Y-axis**: PERCENT
  - **X-axis**: YEAR (1993 to 2001)
- **Legend**:
  - FUMIGANT
  - FUNGICIDE
  - HERBICIDE
  - INSECTICIDE
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?